

Department of Computer Science,
IMS Engineering College

This is the monthly e-magazine
Released by our computer
science department for sharing of information and updating
students with information useful to
them and helpful in their
development

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VISION - OUR VISION IS TO IMPART VIBRANT, INNOVATIVE AND GLOBAL EDUCATION TO MAKE IMS THE WORLD LEADER IN TERMS OF EXCELLENCE OF EDUCATION, RESEARCH AND TO SERVE THE NATION IN THE 21<sup>ST</sup> CENTURY.

#### MISSION -

- TO DEVELOP IMSEC AS A CENTRE OF EXCELLENCE IN TECHNICAL AND MAN-AGEMENT EDUCATION.
- TO INCULCATE IN ITS STUDENTS, THE QUALITIES OF LEADERSHIP, PROFES-SIONALISM, EXECUTIVE COMPETENCE AND CORPORATE UNDERSTANDING.
- TO IMBIBE AND ENHANCE HUMAN VALUES, ETHICS AND MORALS IN OUR STU-DENTS.
- TO TRANSFORM STUDENTS INTO GLOBALLY COMPETITIVE PROFESSIONALS.

#### **DEPARTMENT**

VISION - TO BE RECOGNIZED AS A CENTRE OF EXCELLENCE IMPARTING QUALITY EDUCATION AND CREATING NEW OPPORTUNITIES FOR STUDENTS TO MEET THE CHALLENGES OF TECHNOLOGICAL DEVELOPMENT IN COMPUTER SCIENCE & ENGINEERING.

#### MISSION -

- TO PROMOTE TECHNICAL PROFICIENCY BY ADOPTING EFFECTIVE TEACHING LEARN-ING PROCESSES.
- TO PROVIDE ENVIRONMENT & OPPORTUNITY FOR STUDENTS TO BRING OUT THEIR IN-HERENT TALENTS FOR ALL ROUND DEVELOPMENT.
- TO PROMOTE LATEST TECHNOLOGIES IN COMPUTER SCIENCE & ENGINEERING AND ACROSS DISCIPLINES IN ORDER TO SERVE THE NEEDS OF INDUSTRY, GOVERNMENT, SO-CIETY AND THE SCIENTIFIC COMMUNITY.
- TO EDUCATE STUDENTS TO BE SUCCESSFUL, ETHICAL AND EFFECTIVE PROBLEM-SOLVERS AND LIFE-LONG LEARNERS WHO WILL CONTRIBUTE POSITIVELY TO THE SOCI-ETY.

#### PROGRAM EDUCATIONAL OBJECTIVES

- GRADUATES OF THE PROGRAM WILL BE ABLE TO APPLY FUNDAMENTAL PRINCIPLES OF MATHEMATICS, ENGINEERING, MANAGEMENT, BASIC PROGRAMMING LANGUAGES IN PROBLEM UNDERSTANDING & FORMULATING ITS SOLUTIONS. THEY WILL BE AWARE OF THE ROLE OF COMPUTING IN MULTIPLE DISCIPLINES.
- GRADUATES WILL LEARN TO APPLY THE PRINCIPLES OF ADVANCED COMPUTER PROGRAMMING & APPROACHES, SOFTWARE ENGINEERING, PROJECT MANAGEMENT, EMERGING TECHNIQUES & TOOLS WHILE DEVELOPING REAL WORLD COMPUTATIONAL SOLUTIONS AND PROJECTS. GRADUATES SHOULD ALSO LEARN TO COLLABORATE & APPLY INNOVATIVE ASPECTS IN PROBLEM SOLVING.
  - GRADUATES WILL ENHANCE THEIR TECHNICAL, APTITUDE, COMMUNICATION & PROFESSIONAL SKILLS THROUGH VALUE ADDITION PROGRAMS, PROJECT BASED LEARNING, ENGINEERING EVENTS, SELF-LEARNING, RESEARCH, INTERACTION WITH INDUSTRY & ALUMNI. HELP OUR GRADUATES TO ESTABLISH A PRODUCTIVE COMPUTER SCIENCE AND ENGINEERING CAREER IN INDUSTRY, GOVERNMENT OR ACADEMIA.
- TO PROMOTE THE UNDERSTANDING OF PROFESSIONALISM, ETHICS, SOCIAL RESPONSIBILITIES AMONG GRADUATES. THEY WILL CONTRIBUTE TO THE SOCIETY THROUGH ACTIVE ENGAGEMENT WITH PROFESSIONAL SOCIETIES, SCHOOLS, CIVIC ORGANIZATIONS OR OTHER

### PROGRAM SPECIFIC OUTCOMES (PSO'S)

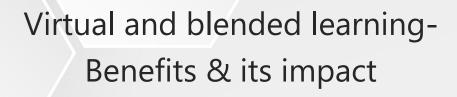
- STUDENT SHOULD LEARN TO DEMONSTRATE THE BASIC UNDERSTANDING OF COMPUTER SCIENCE & ENGINEERING FUNDAMENTALS, PROGRAMMING, AND PROFESSIONAL SOCIAL ETHICS AND APPLY MATHEMATICAL FOUNDATIONS TO DESIGN & SOLVE COMPUTATIONAL PROBLEMS.
- STUDENT SHOULD LEARN TO APPLY ANALYSIS, DESIGN,
  DEVELOPMENT, TESTING & MANAGEMENT PRINCIPLES IN
  THE DEVELOPMENT OF COMPUTATIONAL SOLUTIONS &
  SOFTWARE SYSTEMS; HE/SHE IS EXPECTED TO FUNCTION
  EFFECTIVELY IN DEVELOPMENT TEAMS.
- STUDENT IS EXPECTED TO GAIN ENOUGH VALUE ADDITION AND TECHNICAL EXPERTISE ON LATEST INDUSTRY SPECIFIC SKILLS THROUGH SELF LEARNING & TRAINING.

  THEY ARE EXPECTED TO HAVE GOOD COMMUNICATION SKILLS WITH CORRECT ATTITUDE AND APTITUDE.
  - STUDENTS ARE EXPECTED TO INSPIRE FOR LIFELONG

    LEARNING & DO WELL IN THEIR PROFESSIONAL CA
    REERS. THEY ARE ALSO EXPECTED TO ACT AS A GOOD

    CITIZEN BY INCULCATING IN THEM MORAL VALUES &

    ETHICS.



ONLINE LEARNING IS ONE OF THE FASTEST GROW
ING TRENDS IN EDUCATIONAL USES OF TECHNOLOGY.

EXPERTS EFFECTIVELY, ONLINE EDUCATION CAN NOT
ONLY MATCH, BUT ALSO SURPASS TRADITIONAL FACE-TOFACE LEARNING (MEANS ET AL., 2010). CHANGES ARE VISI
BLE IN THE WAY HIGHER EDUCATION IS BEING TAUGHT TODAY
AND IN WAY STUDENTS ARE LEARNING. THOUGH THE CLASSROOM
TEACHING WILL CONTINUE TO FORM THE BEDROCK AG HIGHER EDUCATION SYSTEM, IT WILL BE SUPPLEMENTED BY THE INTEGRATION OF
NEW TOOLS AND PEDAGOGIES.

OVER A DECADE, VIRTUAL LEARNING ENVIRONMENTS (VLE) HAVE EMERGED AS ONE OF THE MOST EFFECTIVE LEARNING STRATEGIES IN EDUCATIONAL THEORY AND PRACTICE (WELLER, 2007). A VIRTUAL LEARNING ENVIRONMENT (VLE) IS A WEB-BASED PLATFORM FOR THE DIGITAL ASPECT OF COURSES OF STUDY, USUALLY WITHIN EDUCATIONAL INSTITUTION. A WELL MAINTAINED VLE SHOULD ENABLE STUDENTS OF ALL LEARNING STYLES TO RECEIVE THE BEST POSSIBLE EDUCATION, IN A WAY THAT THEY MAY NOT IN AN EXCLUSIVELY LECTURE-BASED ENVIRONMENT WHICH LEADS TO BE FOCUSED IN AUDITORY LEARNERS ONLY (I.E. THOSE WHO LEARN BEST BY LISTENING) (WILLIAMS AND FARDON, 2005). HOWEVER, THE ISSUE LIKE QUALITY OF TEACHING MATERIAL, VALIDATION OF CONCEPTS, PLAGIARISM, DUPLICATION ETC WILL ALWAYS POSE SOME CHALLENGES TO LEARNING.

#### BENEFITS & ITS IMPACT

ONE OF THE ADVANTAGES OF VIRTUAL LEARNING IS THAT IT AL-LOWS THE INSTRUCTOR TO MONITOR & INTERPRET THE ACTIVI-TIES THAT STUDENTS CARRY DURING THEIR LEARNING, WHICH ARE NOT NORMALLY VISIBLE TO US IN THE 'TRADITIONAL' CLASSROOM. THIS ENABLE BETTER UNDERSTANDING OF THE

- STUDENTS' LEARNING. THE INSTRUCTOR CAN LOG IN TO MONITOR COURSE REVIEW, ASSIGNMENTS VIEW, FORUM VIEW, DISCUSSION VIEW AND SEE WHAT THEIR STUDENTS HAVE NOT UPLOADED BY CERTAIN TIME OR DATE, LEARNERS CAN LEARN AT THEIR OWN PACE.
- SELF-PACED OR ASYNCHRONOUS LEARNING: EACH LEARNER IS DIFFERENT, SOME COMPREHENDS NEW KNOWLEDGE FASTER, WHILE THE OTHER NEED SOME MORE TIME. AS THE LEARNING MATERIALS ARE ACCESSIBLE 24/7, EVERY STUDENT CAN LEARN AT THEIR OWN PAVE AND AS PER THEIR CONVENIENCE.
- STUDENT COMMUNICATION AND COLLABORATION: IN BLENDED LEARNING THE CLASSROOM BECOMES A COLLABORATION CENTRE, WHERE THE LEARNERS CAN QUICKLY COMMUNICATE AND CONCENTRATE THEIR EFFORTS ON THE MOST PRESSING QUESTIONS. THE INSTRUCTOR CAN ALSO GATHER IMMEDIATE FEEDBACK AND CHANNEL THE DISCUSSION IN THE RIGHT DIRECTION TO MAXIMIZE THE LEARNING MATERIAL COMPREHENSION.
- INSTRUCTOR HAS ACCESS TO MANY ONLINE TOOLS LIKE DRAWING TOOLS, USE OF GRAPHICAL ANALYSIS, QUIZZES ETC. TO ENGAGE THE LEARNERS IN MUCH EFFECTIVE MANNER.
- PROGRESS TRACKING, GRADING AND ANALYSIS: INSTRUCTOR CAN KEEP A TRACK OF EACH LEARNER'S PROGRESS, PROVIDE HELP TO EACH AT ANY TIME, COMMUNICATE WITH HIM, ANALYSE HIS PERFORMANCE. MONITORING THE STUDENTS AT SUCH A DETAILED LEVEL IS NOT POSSIBLE WITH CLASSROOM TEACHING.
- IT HELPS OVERCOME THE LIMITS OF GEOGRAPHY AND TIME, REACHING TRAINEES WHO OTHERWISE CANNOT PARTICIPATE. BLENDED LEARNING PROVIDES THE FLEXIBILITY NECESSARY FOR PARTICIPANTS TO LEARN, WHEN AND WHERE THEY ARE READY TO LEARN (SIMON, 2015).
- IMPROVED OUTCOMES: ACCORDING TO A STUDY, INTRODUCTION OF BLENDED LEARNING CAN LEAD TO IMPROVED COURSE OUTCOMES, IN TERMS OF HIGHER STUDENT RETENTION AS WELL AS INCREASED PASS RATES. THE EVIDENCE SUGGESTS THAT BLENDED LEARNING CAN IMPROVE RETENTION OF TRADITIONAL NON-LEARNERS, ALTHOUGH IT MAY NOT IMPROVE ATTAINMENT. WITH THE USE MOBILE TECHNOLOGIES LIKE TABLETS AND CELL PHONES THAT ALLOWS QUICK INFORMATION ACCESS, VIRTUAL & BLENDED LEARNING MODES HAS BEEN AN INTEGRAL PART OF DIGITAL NATIVES' LEARNING PROCESSES AND HABITS [MARC,2001]. VLE HAS ENABLED THE EDUCATIONISTS FROM ALL OVER WORLD TO SHARE THEIR LEARNING, THUS CONTRIBUTING TO THE OVERALL ENRICHMENT OF THE SUBJECT CONTENTS. VIRTUAL AND BLENDED LEARNING HAVE OPENED NEW FRONTIERS, WHERE THE ROLES OF STU-

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Ry Brad Phones Feb. E. 2015 LC20 AM

The world's lead figuring out how week, UN officials unlikely that any ne

## MBC NEWS The Trouble with Almonds

Amid California's historic drought, farmers insist 'we're not the villain'

BY MALLIE MCKEON, TRACY CONNOR, JOHN MAKELY, AND MAY 13, 2015 5:00 AM

Standing in the middle of his family orchard in the San Joaquin Valley. Tom Rogers plucks an almond from a tree and slices it open to reveal the meat inside.



The New York Times

No LINE

## A Life in Motion, Stopped Cold

It was the most unbelievably heartbreaking thing I've ever heard my life — someone's desperation wh they can't move.'

et and

BY SARAW EXILE AND MARGARET CHEATHAM WILLIAMS AMY 12, 2015

PARKCITY, Utah-It was just the top of imountain, but to Lafs Souza, poised on her



## cientists agree: offee naps are better s alone

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NO CHES

ing sleepy and want to wake and have 20 minutes or so to ou need to be fully alert an way about dem to more



Should You Invite Your Toxic Mom to Your Wedding? It's complicated. Kind of.

BY LAURA BECK MONDAY 4:13 PM

Over at The Washington Post, advice columnist Carolyn Hax tackles the question of whether or not a bride should invite to "toxic mother" to her world in be writes that che

#### 19 THINGS TO DO MORE OF IN 2019

- 1. PRACTICE GRATITUDE. SOMEHOW, WE'VE CULTIVATED HABITS OF PRACTICING JUDGMENT, JEALOUSY OR SELF-PITY. IMAGINE IF YOU SPENT THAT TIME TELLING YOURSELF ONE THING YOU'RE GRATEFUL FOR INSTEAD. IT CAN BE SOMETHING BIG OR SMALL; SOMETHING OBVIOUS OR MAYBE A HIDDEN SILVER LINING. SPEND LITERALLY A FEW MOMENTS IN THE MORNING OR EVENINGS DOING THIS SIMPLE ACTION. SET AN ALARM, MAKE IT YOUR BEDTIME TRADITION, GET IN THE HABIT. SOON, YOUR GRATITUDE WILL COME TO YOU NATURALLY AND YOU'LL START TO FEEL HOW FULL YOUR LIFE REALLY IS.
- 2. JOURNAL. THEY SAY THERE'S POWER IN WRITING THINGS DOWN. SPEND MORE TIME JOTTING DOWN WHAT'S FLOATING IN YOUR MIND; GET IT OUT OF YOUR HEAD AND INTO THE UNIVERSE.
- 2. LISTEN TO YOUR INTUITION. IF I LEARNED ANYTHING THIS YEAR, IT'S THAT MY INTUITION IS MORE POWERFUL THAN I GIVE IT CREDIT. AND I BET YOURS IS, TOO. DON'T UNDERESTIMATE THE FEELING YOU GET IN YOUR GUT WHEN YOU SENSE SOMETHING IS OR IS NOT RIGHT. YOU MOST LIKELY ALREADY KNOW THE ANSWER.
- 4. EMBRACE YOUR SOLITUDE. GET COZY WITH YOUR ALONE TIME. DO THINGS YOU LIKE BY YOURSELF. BECOME COMFORTABLE WITH YOUR OWN PRESENCE.



- 5. INDULGE IN A PASSION PROJECT. REFLECT ON SOMETHING YOU'VE ALWAYS WANTED TO DO PLAYING GUITAR, JEWELRY MAKING, BECOMING A FITNESS INSTRUCTOR, PHOTOGRAPHY, KNITTING, ANYTHING! PICK ONE THING AND COMMIT TO DOING IT THIS YEAR. NOW LISTEN UP: THIS IS NOT ME TELLING YOU TO BECOME AN EXPERT AT SOMETHING AND STRESS YOURSELF OUT. THIS IS ME TELLING YOU TO FEEL JOY IN DOING, TO REMIND YOURSELF WHAT IT'S LIKE TO BE HUNGRY TO LEARN, AND TO PROVE TO YOURSELF THAT YOU CAN DO IT.
- 6. FOLLOW THROUGH ON YOUR PROMISES AND COMMITMENTS. WHEN I SAY THIS, I MEAN YOUR PROMISES TO OTHERS AND TO YOURSELF. BECOME SO RELIABLE THAT PEOPLE KNOW WHEN YOU SAY YOU'LL DO SOMETHING, IT'S A DONE DEAL.
- 7. FORGIVE YOURSELF. NOW, IN THE SAME VEIN, DON'T BE TOO HARD ON YOURSELF. YOU WILL MAKE MISTAKES THIS YEAR IT'S BOUND TO HAPPEN. BUT WHEN YOU DO, FORGIVE YOURSELF. YOU'RE ONLY HUMAN, AND IT'S OKAY TO MESS UP.
- 8. SET AN INTENTION EVERY DAY. AN INTENTION CAN BE SOMETHING SIMPLE A WORD OR PHRASE. LIKE, PRACTICING PATIENCE OR ACCEPTANCE, OR LISTENING TO OTHERS AROUND YOU A LITTLE MORE CLOSELY IN SETTING THESE SMALL BUT MIGHTY GOALS, YOU WILL BEGIN TO LIVE WITH MORE PURPOSE AND DIRECTION AND FEEL EMPOWERED IN KNOWING YOU CHOOSE WHAT YOU BRING INTO YOUR DAY.



- 9. TELL PEOPLE WHY YOU LOVE THEM. THE NEXT TIME YOU TELL SOMEONE YOU LOVE THEM, GIVE THEM THREE REASONS WHY. WATCH THEM GLOW.
- 10. GIVE YOURSELF LOVE, TOO. YOU KNOW WHEN YOU'RE LOOKING AT YOUR BEST FRIEND AND YOU START THINKING ALL OF THESE AMAZING THINGS ABOUT THEM? HOW OFTEN DO YOU LOOK AT YOURSELF AND DO THE SAME? WHAT IF WE SHOWERED OURSELVES WITH THE SAME LOVE AND COMPLIMENTS THAT WE GIVE TO OTHERS? START NURTURING YOURSELF WITH KINDNESS AND PRAISE. APPRECIATE THE BODY THAT'S CARRIED YOU EVERY DAY OF YOUR LIFE. LEARN TO GIVE YOURSELF LOVE.
- 11. MEDITATE. GET COMFORTABLE WITH SILENCE. THIS CAN SEEM DIFFICULT AND SO UNCOMFORTABLE, ESPECIALLY BECAUSE SILENCE SEEMS TO MAKE OUR THOUGHTS LOUDER. BUT THE MORE YOU PRACTICE, THE LESS YOUR INNER THOUGHTS WILL GRIP YOUR ATTENTION; THE MORE SELF-AWARENESS YOU'LL GAIN; AND THE CLOSER YOU'LL FEEL TO THE QUIET PARTS THAT EXIST WITHIN YOU.
- 12. GIVE BACK. WE CAN ALL BENEFIT A BIT FROM GIVING BACK. AND IT DOESN'T HAVE TO BE MONEY. YOUR TIME CAN BE THE MOST VALUABLE GIFT, ESPECIALLY IF YOU GET TO CONNECT WITH THE PEOPLE THAT YOU'RE HELPING.



- 13. LET YOURSELF FEEL WHAT YOU'RE FEELING. YOU DO NOT NEED TO BE HAPPY ALL THE TIME. AGAIN, FOR THE PEOPLE IN THE BACK, YOU DO NOT NEED TO BE HAPPY ALL THE TIME. EMOTIONS ARE REAL. FEEL THEM. AND DON'T BE ASHAMED TO DO SO.
- 14. USE HEALTHY COPING MECHANISMS. IT IS 100% OKAY TO NOT BE HAPPY ALL THE TIME; HOWEVER, IT IS EQUALLY NECESSARY TO UNDERSTAND WHATEVER YOU ARE FEELING AND FIND HEALTHY WAYS TO PROCESS IT. AND, IT'S IMPORTANT TO REALIZE THAT THIS WILL LOOK DIFFERENT FOR EVERYONE. SOME PEOPLE MAY CRAVE A WORKOUT, OTHERS MAY NEED A NIGHT IN WITH A GOOD FRIEND, OTHERS MAY NEED TIME ALONE JOURNALING THEIR THOUGHTS. FIND YOUR TOOLS AND USE THEM.
- 15. LEARN TO SAY "NO". WE OFTEN SAY YES TO THINGS WE DON'T EVEN REALLY WANT TO DO. LEARN TO CLAIM BACK YOUR VOICE AND YOUR TIME AND SAY "NO" WHEN YOU WANT TO.
- 16. LEAN ON YOUR FRIENDS WHEN YOU NEED THEM. I KNOW YOU DON'T WANT TO OVERBURDEN THE PEOPLE AROUND YOU WITH THE THINGS YOU'RE GOING THROUGH, BUT THEY WANT TO BE THERE FOR YOU. LET THEM BE.



17. CELEBRATE YOUR SUCCESSES. DID YOU TRY SOMETHING NEW FOR THE FIRST TIME TODAY? TAKE ONE STEP CLOSER TO ACHIEVING A GOAL? NOT CRY FOR THE FIRST TIME OVER THAT GUY THAT BROKE YOUR HEART? AMAZING. ALL OF THESE THINGS, WHILE MAY NOT SEEM IT TO YOU, ARE HUGE. AND THEY SHOULD NOT GO UNNOTICED AS SUCCESSES. SURE, YOU MIGHT NOT FEEL LIKE YOU'VE MADE ALL THE PROGRESS YOU'VE WANTED, BUT (GET READY FOR IT) THIS. IS. PROGRESS. SELF-HIGH FIVE. IMPROMPTU DANCE PARTY. BE PROUD. AND RECOGNIZE THESE SMALL, BUT MIGHTY ACCOMPLISHMENTS MORE OFTEN.

16. TRADE TEXTING FOR A PHONE CALL. BECAUSE THERE'S SOMETHING SPECIAL IN HEARING A LOVED ONE'S VOICE — IN KNOWING THEIR EXACT REACTION THE MOMENT YOU SHARE SOMETHING WITH THEM.

19. ASK YOURSELF: "WHAT IF IT ALL WORKS OUT?" INSTEAD OF BELIEVING THAT LIFE IS OUT TO GET YOU AND EVERYTHING IS ALWAYS FALLING APART (ALTHOUGH I GET IT CAN FEEL THAT WAY SOMETIMES), START ASKING YOURSELF: WHAT IF IT ALL WORKS OUT? HOW DIFFERENTLY WOULD YOU APPROACH YOUR LIFE IF YOU KNEW THAT IT WAS GUARANTEED FOR YOU TO GET EVERYTHING YOU WANT — FEEL HAPPINESS, FIND LOVE, LAND YOUR DREAM JOB, WHATEVER YOUR GOAL IS. BECAUSE THE MORE YOU START BELIEVING IT WILL ALL WORK OUT, THE MORE YOU'LL START SETTING THE TRACKS FOR IT TO ACTUALLY HAPPEN.



## DNA design that anyone can do

Computer program can translate a free-form 2-D drawing

ANNE TRAFTON | MIT NEWS OFFICE JANUARY 3, 2019

RESEARCHERS AT MIT AND ARIZONA STATE UNIVERSITY HAVE DESIGNED A COMPUTER PROGRAM THAT ALLOWS USERS TO TRANSLATE ANY FREE-FORM DRAWING INTO A TWO-DIMENSIONAL, NANOSCALE STRUCTURE MADE OF DNA.

UNTIL NOW, DESIGNING SUCH STRUCTURES HAS REQUIRED TECHNICAL EXPERTISE THAT PUTS THE PROCESS OUT OF REACH OF MOST PEOPLE. USING THE NEW PROGRAM, ANYONE CAN CREATE A DNA NANOSTRUCTURE OF ANY SHAPE, FOR APPLICATIONS IN CELL BIOLOGY, PHOTONICS, AND QUANTUM SENSING AND COMPUTING, AMONG MANY OTHERS.

"WHAT THIS WORK DOES IS ALLOW ANYONE TO DRAW LITERALLY ANY 2-D SHAPE AND CONVERT IT INTO DNA ORIGAMI AUTOMATICALLY," SAYS MARK BATHE, AN ASSOCIATE PROFESSOR OF BIOLOGICAL ENGINEERING AT MIT AND THE SENIOR AUTHOR OF THE STUDY.

THE RESEARCHERS PUBLISHED THEIR FINDINGS JAN. 2 IN SCIENCE ADVANCES, AND THE PROGRAM, CALLED PERDIX, IS AVAILABLE ONLINE. THE LEAD AUTHORS OF THE PAPER ARE HYUNGMIN JUN, AN MIT POSTDOC, AND FEI ZHANG, AN ASSISTANT RESEARCH PROFESSOR AT ARIZONA STATE UNIVERSITY. OTHER AUTHORS ARE MIT RESEARCH ASSOCIATE TYSON SHEPHERD, RECENT MIT PHD RECIPIENT SAKUL RATANALERT, ASU ASSISTANT RESEARCH SCIENTIST XIAODONG QI, AND ASU PROFESSOR HAO YAN.

**AUTOMATED DESIGN** 



DNA ORIGAMI, THE SCIENCE OF FOLDING DNA INTO TINY STRUCTURES, ORIGINATED IN THE EARLY 1980S, WHEN NED SEEMAN OF NEW YORK UNIVERSITY PROPOSED TAKING ADVANTAGE OF DNA'S BASE-PAIRING ABILITIES TO CREATE ARBITRARY MOLECULAR ARRANGEMENTS. IN 2006, PAUL ROTHEMUND OF CALTECH CREATED THE FIRST SCAFFOLDED, TWO-DIMENSIONAL DNA STRUCTURES, BY WEAVING A LONG SINGLE STRAND OF DNA (THE SCAFFOLD) THROUGH THE SHAPE SUCH THAT DNA STRANDS KNOWN AS "STAPLES" WOULD HYBRIDIZE TO IT TO HELP THE OVERALL STRUCTURE MAINTAIN ITS SHAPE.

OTHERS LATER USED A SIMILAR APPROACH TO CREATE COMPLEX THREE-DIMENSIONAL DNA STRUCTURES. HOWEVER, ALL OF THESE EFFORTS REQUIRED COMPLICATED MANUAL DESIGN TO ROUTE THE SCAFFOLD THROUGH THE ENTIRE STRUCTURE AND TO GENERATE THE SEQUENCES OF THE STAPLE STRANDS. IN 2016, BATHE AND HIS COLLEAGUES DEVELOPED A WAY TO AUTOMATE THE PROCESS OF GENERATING A 3-D POLYHEDRAL DNA STRUCTURE, AND IN THIS NEW STUDY, THEY SET OUT TO AUTOMATE THE DESIGN OF ARBITRARY 2-D DNA STRUCTURES.

TO ACHIEVE THAT, THEY DEVELOPED A NEW MATHEMATICAL APPROACH TO THE PROCESS OF ROUTING THE SINGLE-STRANDED SCAFFOLD THROUGH THE ENTIRE STRUCTURE TO FORM THE CORRECT SHAPE. THE RESULTING COMPUTER PROGRAM CAN TAKE ANY FREE-FORM DRAWING AND TRANSLATE IT INTO THE DNA SEQUENCE TO CREATE THAT SHAPE AND INTO THE SEQUENCES FOR THE STAPLE STRANDS.

THE SHAPE CAN BE SKETCHED IN ANY COMPUTER DRAWING PROGRAM AND THEN CON-VERTED INTO A COMPUTER-AIDED DESIGN (CAD) FILE, WHICH IS FED INTO THE DNA DE-SIGN PROGRAM. "ONCE YOU HAVE THAT FILE, EVERYTHING'S AUTOMATIC, MUCH LIKE PRINTING, BUT HERE THE INK IS DNA," BATHE SAYS.

AFTER THE SEQUENCES ARE GENERATED, THE USER CAN ORDER THEM TO EASILY FABRICATE THE SPECIFIED SHAPE. IN THIS PAPER, THE RESEARCHERS CREATED SHAPES IN WHICH ALL OF THE EDGES CONSIST OF TWO DUPLEXES OF DNA, BUT THEY ALSO HAVE A WORKING PROGRAM THAT CAN UTILIZE SIX DUPLEXES PER EDGE, WHICH ARE MORE RIGID. THE CORRESPONDING SOFTWARE TOOL FOR 3-D POLYHEDRA, CALLED TALOS, IS AVAILABLE ONLINE AND WILL BE PUBLISHED SOON IN THE JOURNAL ACS NANO. THE SHAPES, WHICH RANGE FROM 10 TO 100 NANOMETERS IN SIZE, CAN REMAIN STABLE FOR WEEKS OR MONTHS, SUSPENDED IN A BUFFER SOLUTION.

"THE FACT THAT WE CAN DESIGN AND FABRICATE THESE IN A VERY SIMPLE WAY HELPS TO SOLVE A MAJOR BOTTLENECK IN OUR FIELD," BATHE SAYS. "NOW THE FIELD



CAN TRANSITION TOWARD MUCH BROADER GROUPS OF PEOPLE IN INDUSTRY AND ACADEMIA BEING ABLE TO FUNCTIONALIZE DNA STRUCTURES AND DEPLOY THEM FOR DIVERSE APPLICATIONS."

#### **NANOSCALE PATTERNS**

BECAUSE THE RESEARCHERS HAVE SUCH PRECISE CONTROL OVER THE STRUCTURE OF THE SYNTHETIC DNA PARTICLES, THEY CAN ATTACH A VARIETY OF OTHER MOLECULES AT SPECIFIC LOCATIONS. THIS COULD BE USEFUL FOR TEMPLATING ANTIGENS IN NANOSCALE PATTERNS TO SHED LIGHT ON HOW IMMUNE CELLS RECOGNIZE AND ARE ACTIVATED BY SPECIFIC ARRANGEMENTS OF ANTIGENS FOUND ON VIRUSES AND BACTERIA.

"HOW NANOSCALE PATTERNS OF ANTIGENS ARE RECOGNIZED BY IMMUNE CELLS IS A VERY POORLY UNDERSTOOD AREA OF IMMUNOLOGY," BATHE SAYS. "ATTACHING ANTIGENS TO STRUCTURED DNA SURFACES TO DISPLAY THEM IN ORGANIZED PATTERNS IS A POWERFUL WAY TO PROBE THAT BIOLOGY."

ANOTHER KEY APPLICATION IS DESIGNING LIGHT-HARVESTING CIRCUITS THAT MIMIC THE PHOTOSYNTHETIC COMPLEXES FOUND IN PLANTS. TO ACHIEVE THAT, THE RESEARCHERS ARE ATTACHING LIGHT-SENSITIVE DYES KNOWN AS CHROMOPHORES TO DNA SCAFFOLDS. IN ADDITION TO HARVESTING LIGHT, SUCH CIRCUITS COULD ALSO BE USED TO PERFORM QUANTUM SENSING AND RUDIMENTARY COMPUTATIONS. IF SUCCESSFUL, THESE WOULD BE THE FIRST QUANTUM COMPUTING CIRCUITS THAT CAN OPERATE AT ROOM TEMPERATURE, BATHE SAYS.

BATHE AND THREE OTHER MIT FACULTY MEMBERS — GABRIELA SCHLAU-COHEN, AD-AM WILLARD, AND DIRK ENGLUND — RECENTLY RECEIVED A NATIONAL SCIENCE FOUNDATION GRANT TO PURSUE THIS QUANTUM SENSING AND COMPUTING PROJECT.

OTHER POSSIBLE APPLICATIONS FOR THE DNA STRUCTURES INCLUDE USING THEM TO HELP ORGANIZE MACROMOLECULAR PROTEIN ASSEMBLIES FOUND IN CELLS, SO THAT THEY CAN BE MORE EASILY IMAGED WITH HIGH-RESOLUTION CRYO-ELECTRON-MICROSCOPY. MIT'S NEW MIT.NANO FACILITY HAS TWO SUCH MICROSCOPES, WHICH CAN BE USED TO REVEAL THE FINE DETAILS OF TINY STRUCTURES.

THE RESEARCH WAS FUNDED BY THE NATIONAL SCIENCE FOUNDATION, THE OFFICE OF NAVAL RESEARCH, THE ARMY RESEARCH OFFICE, AND THE NATIONAL INSTITUTE OF ALLERGY AND INFECTIOUS DISEASE.



### Robots Aren't Yet Killing Off All Our Jobs,

BY NATALIA DROZDIAK

THE <u>RISE OF AUTOMATION</u> HAS SO FAR HAD A NEGLIGIBLE IMPACT ON JOBS AT A GLOBAL SCALE, THE <u>WORLD BANK</u> CHIEF ECONOMIST SAID, DESPITE COMMON GLOOMY PREDICTIONS THAT HUMANS ARE SET TO BE REPLACED BY MACHINES.

WHILE ADVANCED ECONOMIES HAVE SHED INDUSTRIAL JOBS OVER THE LAST TWO DECADES, THE RISE OF THE SAME SECTOR IN EAST ASIA HAS MORE THAN COMPENSATED FOR THE LOSS, ACCORDING TO AN ANNUAL REPORT PUBLISHED BY THE WASHINGTON-BASED INTERNATIONAL FINANCIAL INSTITUTION.

"THIS FEAR THAT ROBOTS HAVE ELIMINATED JOBS -- THIS FEAR IS NOT SUPPORTED BY THE EVIDENCE SO FAR," THE WORLD BANK'S CHIEF ECONOMIST PINELOPI KOUJIANOU GOLDBERG SAID IN AN INTERVIEW.

THE WORLD DEVELOPMENT REPORT 2019 IS THE LATEST IN A SERIES OF EFFORTS BY ACADEMICS, CONSULTANCIES AND GOVERNMENTS TO ASSESS THE IMPACT OF NEW TECHNOLOGIES ON EMPLOYMENT. PAST STUDIES HAVE OFTEN FORECAST AUTOMATION WILL DESTROY MORE JOBS THAN IT CREATES.

READ MORE: WHY NEW BLUE-COLLAR JOBS WILL SURVIVE THE RISE OF AI

IN ITS REPORT, THE WORLD BANK INSTEAD STRESSES THAT THE NATURE OF WORK IN THE FUTURE WILL EVOLVE. WHILE TECHNOLOGICAL ADVANCES IN AUTOMATION ARE



STARTING TO HANDLE THOUSANDS OF ROUTINE TASKS AND WILL ELIMINATE MANY LOW-SKILL JOBS IN ADVANCED ECONOMIES AND DEVELOPING COUNTRIES, IT'S ALSO CREATING OP-PORTUNITIES FOR DIFFERENT, MORE PRODUCTIVE AND MORE CREATIVE JOBS.

"THIS IS THE FOURTH INDUSTRIAL REVOLUTION, THERE HAVE BEEN THREE BEFORE, AND IN EACH CASE WE MANAGED TO SURVIVE SO IT'S NOT THE CASE THAT MACHINES COMPLETELY ELIMINATED HUMANS," KOUJIANOU GOLDBERG SAID. "EVENTUALLY, WE WILL ADJUST."

WHILE THE EFFECTS HAVE BEEN NEGLIGIBLE ON A GLOBAL SCALE, THE REPORT SAID THE SHARE OF INDUSTRIAL EMPLOYMENT DROPPED MORE THAN 10 PERCENTAGE POINTS OVER THE PAST TWO DECADES IN COUNTRIES INCLUDING THE U.K., SPAIN AND SINGAPORE, AS WORKERS SHIFTED FROM MANUFACTURING TO SERVICE JOBS. MEANWHILE, THE SHARE WENT UP IN SOME DEVELOPING COUNTRIES, SUCH AS VIETNAM, WHERE IT ROSE FROM 9 PERCENT IN 1991 TO 25 PERCENT IN 2017.

IN THE FUTURE, WORKERS ARE MORE LIKELY TO HAVE MANY JOBS OVER THE COURSE OF THEIR CAREERS, LARGELY DUE TO THE RISE OF THE GIG ECONOMY, INSTEAD OF HOLDING DOWN A POSITION WITH THE SAME EMPLOYER FOR DECADES, ACCORDING TO THE WORLD BANK.

AND DIFFERENT SKILLS WILL BE INCREASINGLY IMPORTANT, THE REPORT SAYS. INSTEAD OF LESS ADVANCED SKILLS THAT CAN BE REPLACED BY TECHNOLOGY, EMPLOYERS WILL INCREASINGLY BE LOOKING TO HIRE PEOPLE WITH ADVANCED COGNITIVE SKILLS, LIKE COMPLEX PROBLEM-SOLVING, TEAMWORK, REASONING AND COMMUNICATION TALENTS.

TO EASE THAT TRANSITION, GOVERNMENTS SHOULD GUARANTEE A UNIVERSAL MINIMUM LEVEL OF SOCIAL PROTECTION, THE WORLD BANK SAID. ONE OPTION COULD INVOLVE OFFERING INSURANCE INDEPENDENT OF EMPLOYMENT SINCE FUTURE WORKERS WILL LIKELY FLIT FROM ONE JOB TO THE NEXT.



ONE MAJOR AREA OF CONCERN FOR THE WORLD BANK IS THE IMPACT THE TECHNOLOGICAL SHIFTS WILL HAVE ON DEVELOPING COUNTRIES IN AFRICA AND ELSEWHERE HOPING TO CATCH UP TO MORE ADVANCED PEERS.IN THE PAST, THESE REGIONS COULD RELY ON GROWING THEIR ECONOMIES BY TAKING ADVANTAGE OF LOW WAGES IN THEIR OWN COUNTRY AND OPENING UP TO FOREIGN TRADE. BUT SALARIES ARE LESS RELEVANT IF MACHINES REPLACE MORE PEOPLE, WHICH COULD HINDER THE COUNTRIES' EFFORTS TO CATCH UP, KOUJIANOU GOLDBERG SAID.

- WITH ASSISTANCE BY NIKOS CHRYSOLORAS, AND VIKTORIA DENDRINOU





## TECHNOLOGIES THAT ARE EXPECTED TO RULE OUR WORLD IN 2020

#### 1.INTERNET OF THINGS NO LONGER ABOUT THINGS

JUST ABOUT EVERY BUSINESS WILL BECOME AN INTERNET OF THINGS (IOT) BUSINESS. THE CONVERGENCE OF THE DIGITAL AND PHYSICAL WORLDS MAKES THIS INEVITABLE. WHEN THE PRODUCTS COMPANIES SELL ARE CONNECTED 24/7/365, DYNAMIC AND EVER-IMPROVING VALUE CAN BE DELIVERED TO CUSTOMERS THROUGHOUT THE PRODUCT'S LIFE CYCLE. THIS WILL BECOME THE NORM. THEREFORE, LAUNCHING A SUCCESSFUL IOT BUSINESS REQUIRES A FUNDAMENTAL SHIFT, A TRANSITION FROM PRODUCT-CENTRIC TO SERVICE-CENTRIC BUSINESS MODELS. COMPANIES LOOKING TO CAPITALIZE ON IOT WILL BECOME IOT SERVICE BUSINESSES.

JAHANGIR MOHAMMED, CEO OF JASPER TECHNOLOGIES, INC

#### 2.NEW CURES FROM THE BACTERIA THAT LIVE IN THE HUMAN BODY

IN LIFE SCIENCES, WE'LL HAVE GREATER UNDERSTANDING OF THE DYNAMICS OF HOW OUR MICROBIOME – THE TINY ORGANISMS, INCLUDING BACTERIA, THAT LIVE IN THE HUMAN BODY – INFLUENCES MULTIPLE SYSTEMS IN OUR BODY, INCLUDING OUR IMMUNE SYSTEMS, METABOLIC PROCESSES AND OTHER AREAS. THIS WILL RESULT IN SEMINAL DISCOVERIES RELATED TO A VARIETY OF CONDITIONS, INCLUDING AUTOIMMUNE DISEASES, PRE-TERM BIRTH AND HOW OUR METABOLISM IS REGULATED. REGENERATIVE MEDICINE APPROACHES TO CREATING NEW TISSUES AND ORGANS FROM PROGENITOR CELLS WILL EXPAND SIGNIFICANTLY. FINALLY, THE LONG-AWAITED ABILITY TO EMPLOY PRECISION MEDICINE, PROVIDING SPECIFIC TREATMENTS TO A SPECIFIC PATIENTS. WILL BECOME MUCH MORE COMMON.

#### MARK FISCHER-COLBRIE, CEO OF LABCYTE INC

#### 3.THE BEGINNING OF THE END FOR CANCER

THE EMERGENCE OF REAL-TIME DIAGNOSTICS FOR COMPLEX DISEASES WILL MARK THE BEGINNING OF THE END OF THEIR DEBILITATING REIGN BY 2020. THE ABILITY TO MONITOR CANCER, THE DYNAMIC IMMUNE SYSTEM, INTESTINAL FLORA AND PRE-DIABETES IN REAL-TIME WILL CHANGE THE NATURE OF MEDICINE AND USHER IN A NEW ERA OF HUMAN HEALTH WHERE WELLNESS IS PROTECTED VERSUS ILLNESS TREATED. AS A RESULT, FUNDAMENTAL SHIFTS IN HEALTHCARE WILL OCCUR, CAUSING IT TO BECOME LARGELY PREVENTATIVE RATHER THAN FIRE-FIGHTING.

#### HELMY ELTOUKHY, CEO OF GUARDANT HEALTH

4.THE 'HUMANIZED' INTERNET

THE EVOLUTION OF MODERN CONNECTIVITY IS OFTEN SUMMARIZED AS: THE INTERNET – THE WORLD WIDE WEB – MOBILE DEVICES – BIG DATA/THE CLOUD – THE INTERNET OF THINGS. FOR THE NEXT STAGE, IT SEEMS INEVITABLE THAT EVEN MORE PERSONALIZATION WILL BE AN IMPORTANT COMPONENT.

#### 5. FEWER FANCY PHONES, MORE FULFILMENT

INNOVATIONS ARE GENERATING NEW GADGETS, MORE CON-VENIENT SERVICES AND GREATER OPPORTUNITIES. BUT MANY OF THESE CHANGES TARGET A SMALL PERCENTAGE OF THE GLOBE'S POPULATION. HOWEVER, THERE IS TREMENDOUS ROOM FOR ENTREPRENEURS TO ADAPT INNOVATIONS INTEND-ED FOR THE WEALTHY TO SERVE THE WORLD'S POOR. SOLAR PANELS AND LED LIGHTS, DESIGNED FOR SALE IN RICH NA-TIONS, ARE STIMULATING GROWTH IN COMMERCIAL OFF-GRID ELECTRIFICATION IN INDIA AND AFRICA.

#### NIKHIL JAISINGHANI, CO-FOUNDER, MERA GAO POWER

THE AMOUNT OF DATA AVAILABLE IN THE WORLD IS GROWING EXPONENTIALLY, AND ANALYZING LARGE DATA SETS (SOCALLED BIG DATA) IS BECOMING KEY FOR MARKET ANALYSIS AND COMPETITION. ANALYTICS WILL DRAMATICALLY SHIFT AWAY FROM REPORTING AND TOWARDS PREDICTIVE AND PRESCRIPTIVE PRACTICES, DRAMATICALLY IMPROVING THE ABILITY OF HEALTHCARE PROVIDERS TO HELP THE ILL AND INJURED. EVEN MORE IMPORTANTLY, IT WILL CREATE THE POSSIBILITY FOR TRULY PERSONALIZED HEALTHCARE BY ALLOWING PROVIDERS TO IMPACT THE BIGGEST DETERMINANTS OF HEALTH, INCLUDING BEHAVIOURS, GENETICS AND ENVIRONMENTAL FACTORS.

JOHN L HAUGHOM, MD, SENIOR ADVISOR, HEALTH CATALYST

#### 7.PRINTABLE ORGANS

TODAY, WE ARE ALREADY AT A TURNING POINT IN OUR ABILITY TO 3D "BIOPRINT" ORGAN TISSUES, A PROCESS THAT INVOLVES DEPOSITING A "BIO-INK" MADE OF CELLS PRECISELY IN LAYERS, RESULTING IN A FUNCTIONAL LIVING HUMAN TISSUE FOR USE IN THE LAB. THESE TISSUES SHOULD BE BETTER PREDICTORS OF DRUG FUNCTION THAN ANIMAL MODELS IN MANY CASES. IN THE LONG-TERM, THIS HAS THE POTENTIAL TO PAVE THE WAY TO "PRINTING" HUMAN ORGANS, SUCH AS KIDNEYS, LIVERS AND HEARTS. BY 2020, OUR GOAL IS TO HAVE THE TECHNOLOGY BE BROADLY USED BY PHARMACEUTICAL COMPANIES, RESULTING IN THE IDENTIFICATION OF SAFER AND BETTER DRUG CANDIDATES AND FEWER FAILURES IN CLINICAL TRIALS.

#### KEITH MURPHY, CEO OF ORGANOVO

#### 8. CHEAPER, MORE WIDESPREAD SOLAR POWER

BY 2020, SOLAR TECHNOLOGIES COULD ACCOUNT FOR A SIGNIFICANT PORTION OF GLOBAL POWER GENERATION, HELPING ECONOMIES AND BUSINESSES GUARD AGAINST RISING ENERGY COSTS AND THE IMPACT OF CLIMATE CHANGE. OVER THE NEXT SEVERAL YEARS, NEW LOWER-COST METHODS OF POLYSILICON PRODUCTION WILL COMMERCIALIZE, PROVIDING THE SOLAR INDUSTRY WITH A MORE AFFORDABLE SOURCE OF RAW MATERIAL. IN TURN, THESE COST IMPROVEMENTS WILL TRICKLE DOWN THROUGHOUT THE SOLAR SUPPLY CHAIN, ACCELERATING THE ADOPTION OF SOLAR ENERGY AROUND THE WORLD AND HELPING THE INDUSTRY REALIZE ITS GLOBAL POTENTIAL.

#### TERRY JESTER, CEO OF SILICOR

#### 9.RENEWABLES WILL POWER MOBILE NETWORKS

WE HAVE BECOME DEPENDENT ON MOBILE COMMUNICATIONS IN OUR DAILY LIVES, BUT THE DIRTY SECRET IS THAT MOBILE

NETWORKS AROUND THE GLOBE ARE NOTORIOUSLY ENERGY INEFFICIENT. IN FACT, WE ARE STUCK WITH OUTDATED MOBILE NETWORK TECHNOLOGY THAT BASICALLY PERFORMS AS POORLY AS INCANDESCENT LIGHTBULBS, WITH THE RESULT THAT 70% OF THE ENERGY USED IS WASTED AS HEAT. BY 2020, WE PREDICT THAT PIONEERING INNOVATIONS IN RADIO ENGINEERING WILL HAVE A POSITIVE IMPACT ON THE WORLD'S ECONOMY, ENVIRONMENT AND QUALITY OF LIFE. WE EVEN FORESEE A TIME WHEN ADVANCES ALLOW RENEWABLE ENERGY TO POWER THE MOBILE INDUSTRY, HELPING BRIDGE THE DIGITAL DIVIDE AND EXTEND COMMUNICATIONS TO THE 1.7 BILLION PEOPLE LIVING OFF-GRID.

#### MATTIAS ASTROM, CEO, ETA DEVICES

THE ADVANTAGE OF NEW TECHNOLOGY IS THAT IT COMES WITH THE ADDING FEATURES TO MAKE OUR LIFE EASIER.

TECHNOLOGY IS THE HEART OF THE FUTURE. THESE DAYS IT BECOMES A MORE IMPORTANT PARAMETER IN ALL ASPECT OF LIF, ESPECIALLY FOR BUSINESS. NEW TECHNOLOGY COMES WITH NEW CHALLENGES, THAT CHALLENGES INCREASE THE EXPERIENCE OF AN ORGANIZATION, IT GIVES THE SUSTAINABLE STRENGTH TO THE ORGANIZATION.

THE FUTURE TECHNOLOGY WILL GIVE THE BOOST TO THE BUSINESS INDUSTRY, SO IT'S OUR RESPONSIBILITY TO KNOW THE IMPORTANCE OF TECHNOLOGY IN BUSINESS. SO I HAVE COLLECTED SOME INTERESTING AND LATEST TRENDS IN 2019.

TOP TECHNOLOGY TRENDS FOR 2019:

#### ARTIFICIAL INTELLIGENCE (AI) SYSTEM:

AI (ARTIFICIAL INTELLIGENCE) MADE POSSIBLE THAT MA-

CHINES CAN LEARN FROM EXPERIENCE, PROVIDES OUTPUT TO INPUTS SO THAT MACHINE CAN PERFORM HUMAN-LIKE TASKS. THERE ARE LOTS OF APPLICATION WE ARE USING TODAY SUCH AS FACEBOOK, GOOGLE MAPS, PAYPAL, CHESS-PLAYING COMPUTERS, SELF-DRIVING CARS THESE ARE FEW TO MENTION HERE – RELY HEAVILY ON AI. WITH THE USE OF ARTIFICIAL INTELLIGENCE COMPUTERS CAN BE TRAINED TO PERFORM SPECIFIC WORK BY IMPLEMENTING DATA IN THE SYSTEM.

ARTIFICIAL INTELLIGENCE IS THE INTEGRATION OF MACHINE AND COMPUTER SCIENCE TO CREATE THE HUMAN-LIKE MACHINE THAT WOULD PERFORM ALL THE TASK THAT A HUMAN CAN PERFORM. ALSO, IT IS THE BRANCH OF COMPUTER SCIENCE WHICH DEAL WITH CREATING THE INTELLIGENT MACHINES.

AI RESEARCH MAIN CORE PART IS ENGINEERING AND MACHINE BEHAVES LIKE AN INTELLIGENT HUMAN. ARTIFICIAL INTELLIGENCE BECOMES **NEW TRENDS IN INFORMATION TECHNOLOGY.** THE MAIN DIFFICULT PROBLEM FOR THE RESEARCHER OF AI IS INITIATING COMMON SENSE, PROBLEM-SOLVING SKILLS, REASONING POWER.

ARTIFICIAL INTELLIGENT IS ALSO RELATED TO THE ROBOTICS. ROBOT REQUIRED THE BEST INTELLIGENCE TO MANAGE TASKS LIKE NAVIGATION, LOCALIZATION, MAPPING, OBJECT MANIPULATION, MOTION PLANNING ETC. THE AI SYSTEM CONTINUOUSLY TRYING TO DEVELOP A BETTER SYSTEM BY USING DEEP LEARNING ALGORITHMS.

AS WE SEE IN INDUSTRIES THERE IS A SHORTAGE OF SKILLED WORKFORCE, IT WOULD BE THE BEST OPTION TO ACQUIRE AI SYSTEM FOR YOUR ORGANIZATION. SO THIS AI SYSTEM WILL INCREASE THE PRODUCTIVITY OF AN ORGANIZATION.

MAKE A PROPER USE OF INFORMATION TECHNOLOGY IN BUSI-

NESS, AND IT WILL HELP TO GROW YOUR BUSINESS SURELY. INTERNET OF THINGS (IOT)

INTERNET OF THINGS (IOT) IS THE BROAD NETWORK BETWEEN A PHYSICAL OBJECT AND DEVICE AND OTHER ITEMS WITH SOFTWARE, SENSORS, ELECTRONICS THAT ARE ENABLED TO EXCHANGE DATA, IT WOULD BE AN **AMAZING NEW TECHNOLOGY 2019** FOR SURE. AS WE COLLECTING AND EXCHANGING DATA THEN IT CAN BE EASY TO ANALYZE AND MONITOR DATA. IT WOULD BE THE BEST OPTION FOR IMPROVING THE EFFICIENCY AND PRODUCTIVITY OF THE BUSINESS.

IF YOU ARE THINKING WHAT IMPACT WILL IOT TO OUR LIFE, THE INTERNET OF THINGS WILL TRANSFORM OUR LIVES. HERE WE ARE GIVING A FEW EXAMPLES THAT CAN BECOME REAL AND SOON COME TO THE REAL WORLD. LOT'S OF SMART DEVICES LIKE WEARABLES, AUTOMATED CARS THAT WILL INCREASE THE EXPERIENCE FOR YOU TO THE SURPRISE MANY BIG NAMES LIKE BMW, APPLE, TESLA, GOOGLE ARE WORKING THE NEXT REVOLUTION FOR THE AUTOMOBILE INDUSTRY.

IOT IN HEALTHCARE, IOT IN THE RETAIL SECTOR, IOT IN AGRI-CULTURE AND SMART HOMES THESE ARE THE EXAMPLES FOR THE FUTURE OF THE INTERNET OF THINGS. THE CISCO REPORT ON IOT SAID THAT IT WOULD BE \$14.4 TRILLION VALUE CONSID-ERING IT INTO THE ALL INDUSTRIES IN THE NEXT DECADE.

#### BLOCKCHAIN

A BLOCKCHAIN MEANS IS A GROWING LIST OF RECORDS AND THIS LIST OF RECORDS LINKED WITH USING CRYPTOGRAPHY. TODAY'S SCENARIO BLOCKCHAIN IS VERY FAMOUS FOR CRYPTOCURRENCIES AND THIS BLOCKCHAIN READABLE BY THE PUBLIC. THERE ARE TWO TYPES OF BLOCKCHAINS USE NORMALLY; ONE IS PRIVATE BLOCKCHAIN FOR BUSINESS PURPOSE AND SECOND ONE SNAKE OIL BLOCKCHAIN FOR MARKETING

#### PURPOSE.

BLOCKCHAIN WAS TECHNOLOGY USE FOR **BITCOIN** OR ALL TYPES OF THE CRYPTO-CURRENCIES. WE WOULD LIKE TO SEE THIS TECH TREND IN REAL LIFE AND HOPE YOU ARE ALSO EXCITED.

#### **AUTONOMOUS DRIVING (ROBOT CAR)**

WHEN YOU LISTEN TO AUTONOMOUS CARS FIRST THING TO COME TO YOUR MIND IS **TESLA**, & YES IT IS A LEADING ORGANIZATION IN THE AUTONOMOUS FIELD WHO ARE TRYING TO DEVELOP AUTONOMOUS DRIVING CARS.

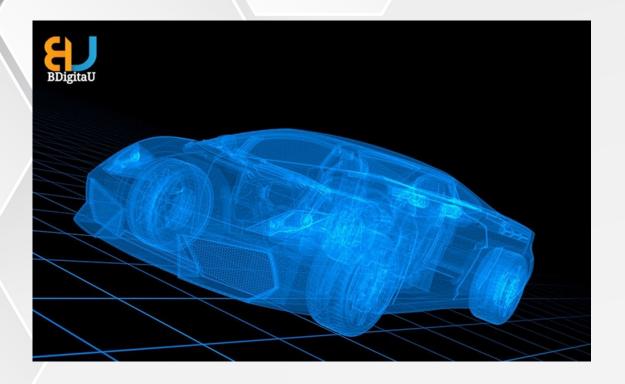
AS WE KNOW GASOLINE CARS OLDEST TYPE IN THE AUTOMOBILE SECTOR, BUT NOW DAY'S ELECTRICAL CARS COME WITH A NEW CONCEPT IN THE AUTOMOBILE SECTOR. TESLA IS ONE OF THE EXCELLENT AND STYLISH CAR MAKERS IN THE WORLD AUTONOMOUS DRIVING CAR IS THE INTEGRATION OF MACHINE LANGUAGE, ARTIFICIAL INTELLIGENT, ADVANCED SENSORS, AND PROCESSING POWER SYSTEMS.

TESLA MOTOR BEST FEATURE IS TOTALLY ADVANCE TECHNOLOGY USE, SO IT IS FULL AUTONOMOUS DRIVING OR YOU SAY SELF-DRIVING FEATURES INCLUDE. YOU CAN DRIVE THIS TYPE OF CARS ON AUTOPILOT MODE WITHOUT GIVING ANY INSTRUCTION OF DRIVER. TESLA MOTORS TAKING CARE REGARDING SAFETY FEATURES.

FUTURE TECHNOLOGY IN 2019

#### SPEED OF 5G

5G IS THE LATEST TECHNOLOGY IN THE TELECOMMUNICATION FIELD. THE 5G TECHNOLOGY WILL 100 TIMES FASTER AS COMPARED TO CURRENT 4G TECHNOLOGY, ALSO 10 TIMES FASTER THAN WHAT GOOGLE FIBRE GIVES THE SPEED TO HOME CONNECTION. EXPERT'S AN OPINION ABOUT 5G THAT YOU CAN USE VIRTUAL REALITY AND AUGMENTED REALITY WITH 5G SPEED.



WE CAN'T IMAGINE THOSE THINGS TODAY HOW BETTER THAT WOULD BE WITH 5G TECHNOLOGY.

THIS TECHNOLOGY WILL GIVE A DIFFERENT EXPERIENCE TO INTERNET USERS AND DEVELOPERS TO THINK ABOUT **DEVELOPING NEW TECHNOLOGY APPS** AND STREAMING CONTENT. I WOULD BE BETTER FOR THE NEXT ENGINEERS, DEVELOPERS, & CONSUMERS REQUIRED TO GEAR UP FOR THE MODERN **TECHNOLOGY PLATFORMS**.

#### VIRTUAL REALITY (VR) AND AUGMENTED REALITY (AR)

THIS TECHNOLOGY WOULD HELPFUL TO CREATES A VIRTUAL WORLD, IT IS USEFUL TO CREATE A GREAT EXPERIENCE FOR VIEWERS. AUGMENTED REALITY AND VIRTUAL REALITY ARE CREATED BY USING COMPUTER GRAPHICS. VR AND AR CREATE A REAL EXPERIENCE FOR USERS.

VIRTUAL REALITY AND AUGMENTED REALITY HAS THE ABIL-

ITY TO CHANGE THE WORLD AND ASPECT OF THINKING. THERE ARE SOME PEOPLE CONFUSE BETWEEN VR AND AR THEY THINGS BOTH ARE THE SAME.

WHAT IS THE VIRTUAL REALITY?

IT IS A SYSTEM THAT CREATES A THREE-DIMENSIONAL, COM-PUTER-GENERATED ENVIRONMENT THAT CAN BE INTERACTED WITH A HUMAN. THIS HUMAN BECOMES PART OF THIS **VIRTUAL** WORLD WITHIN THIS ENVIRONMENT AND THE HU-MAN IN THIS ENVIRONMENT CAN MOVE THE OBJECTS OR PER-FORM VARIOUS ACTIONS.

VIRTUAL REALITY IS NOTHING BUT THE TECHNOLOGY WHICH USE IN THE COMPUTER SYSTEM TO CREATE THE SIMULATED ENVIRONMENT. IT CAN CREATE AN ANIMATED SCENE BY USING VIRTUAL REALITY APPS IN THIS VIEW YOU CAN SEE EVERY DIRECTION VIEW. WITH USING THE VIRTUAL REALITY APPS YOU EXPERIENCE THOSE THINGS THAT YOU NEVER EXPERIENCE SUCH AS SWIMMING IN UNDER THE SEA, WALKING ON THE SURFACE OF MARS ETC.

HERE ARE FEW EXAMPLES THAT USE VR TECHNOLOGY OCULUS RIFT, GOOGLE CARDBOARD AND HTC VIVE,

WHAT IS THE AUGMENTED REALITY?

AUGMENTED REALITY IS NOTHING BUT THE IMPROVED VERSION OF THE VISION REALITY AND ALSO AR IS USED IN TABLETS AND SMARTPHONES.

AR IMPROVE THE LIVE VIEW USING THE CAMERA ON A SMARTPHONE OR TABLETS. YOU PROBABLY SEEN SNAPCHAT LENSES OR THE VERY FAMOUS AND CRITICIZE GAME POKEMON GO ARE THE EXAMPLES OF AR. IT WOULD COME THIS YEAR IN 2019 WITH MORE ADVANCED FEATURES.

THE MAIN PURPOSE OF AR APPLICATION TO USE YOUR SMARTPHONE OR TABLET CAMERA TO SHOW YOU THE REAL

AND VIRTUAL WORLD. SO YOU CAN PUT INFORMATION ON THAT VIEW BY USING THIN LAYER INFORMATION LIKE IMAGES, TEXT. WE WOULD LIKE TO SAY ONE MORE TECHNOLOGY ADDED TO THIS PART IS THE MIXED REALITY (MR) IT IS ALSO KNOWN AS HYBRID REALITY. IT COMBINES BOTH AUGMENTED REALITY AND VIRTUAL REALITY THROUGH REAL THE IMMERSIVE TECHNOLOGY. THIS TECHNOLOGY IS IN THE INITIAL PHASE TO TAKE OFF WITH MICROSOFT'S HOLOLENS. THIS PLATFORM INTRODUCED AS PART OF THE MICROSOFT WINDOWS 10 OPERATING SYSTEM.

SO TECHNOLOGY INTRODUCES UPCOMING **NEW TECHNOLOGY 2019 GADGETS**, SO BE PREPARED FOR LOTS OF FUN AND NEW EXPERIENCE.

#### **BRIAN MICROCHIPS**

THE SCIENTIST DID LOTS OF HARD WORK ON BRIAN MICROCHIPS, IT IS A TECHNOLOGY WHICH CONNECTS HUMAN BRAINS WITH HELP OF THE MICROCHIPS. AS WE KNOW TECHNOLOGY CHANGE RAPIDLY, BRAIN MICROCHIPS IS THE COMBINATION OF COMPUTER SCIENCE AND ELECTRONICS. THIS TECHNOLOGY CONNECTS YOUR BRAINS AND OPERATED BY PROGRAMMING SYSTEM, AND YOU CAN STORE DATA WITH HELP OF MICROCHIPS.

INTEL WAS ALREADY PREDICTED THAT THEY ABLE TO IMPLE-MENT THIS SYSTEM 2019-20. NOW CURRENTLY IT POSSIBLE TO PUT A MICROCHIP IN BRAIN AND STORE DATA OR NEURAL AC-TIVATES CONDUCTED BY THIS NEW TECHNOLOGY. AS PER THE SURVEY, IT IS THE LATEST TECHNOLOGY IN THE WORLD.

CERTAINLY, WE ARE ALSO WAITING FOR THIS TECH TREND.

#### CYBER SECURITY

THE CYBER SECURITY IS THE MAIN ISSUE FROM LAST DECADE, AND CYBERSECURITY EXPERT WAS PROTECTED FROM HACK-

ING PROBLEMS. AS WE CAN SEE IN MARKET HUGE DEMAND FOR CYBERSE-CURITY PROFESSIONAL THROUGHOUT THE WORLD.

IN THE NEW TECHNOLOGY WORLD OLD IT WAS DYING. SO BIGGER PROBLEM IN THE IT WORLD MAY BE THE THREATS CRATE BY THE CLOUD, MOBILE WIRELESS TECHNOLOGY, THE INTERNET OF THINGS AND MANY MORE UPCOMING TECHNOLOGIES IN THIS FIELD.

AS WE KNOW ARTIFICIAL INTELLIGENT, & MACHINE LEARNING CREATES AN EXTREMELY LARGE QUANTITY OF DATA AND THIS DATA IS SO IMPORTANT TO PROTECT. CERTAINLY, THE TECHNOLOGIES ARE DEVELOPED BUT CYBERSECURITY ISN'T SCOPED WITH IT. SO IT IS MOST NOTEWORTHY FOR CYBER EXPERTS AND ROLE IN TECHNOLOGY.

#### **CLOUD COMPUTING**

CLOUD COMPUTING IS THE SIMPLEST WAY OF OBTAINING THE SHARED COMPUTING DATA BY THE ORGANIZATIONS THROUGH INTERNET SERVICES, IT IS THE LATEST TECHNOLOGY IN COMPUTER FIELD.

IF CUSTOMER USES A CLOUD COMPUTING SYSTEM IN HIS ORGANIZATION THEN THERE WILL BE NO NEED FOR A DEDICATED SERVER AND MAYBE NO NEED OF IT SERVICE PROVIDER. CLOUD COMPUTING USE THE PROTOCOLS THAT ALLOW FOR IT RESOURCES TO REMOTE ACCESS.

WE HAVE TRIED TO COLLECT THE BEST TECH TRENDS FOR 2019. SO, THIS IS YOUR TURN COMMENT WHICH TECHNOLOGY WILL BE THE BEST FOR YOU AMONG THE LIST OF TOP TECHNOLOGY TRENDS IN 2019. FOR MORE TECHNOLOGY TOPICS UPDATES FOLLOW US ON INSTAGRAM, TWITTER AND LIKE OUR FACEBOOK PAGE. SIMILARLY, DO VISIT OUR WEBSITE **BDIGITAU** FOR MORE UPDATES.

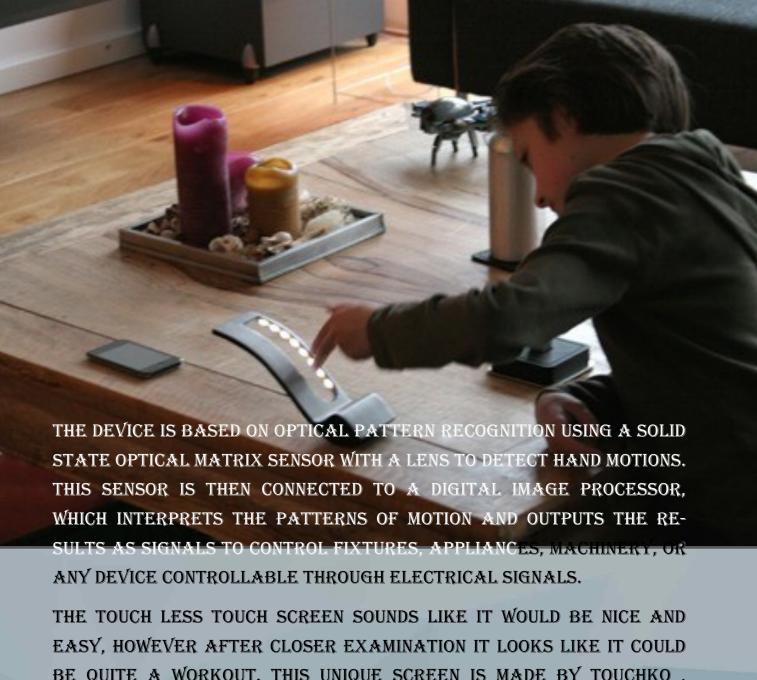
FINALLY, WE LIKE TO SEE THE TRENDS IN 2019.

COMPILED BY MS. SAPNA YADAV CHIEF EDITOR-BYTE E-MAGAZINE



It was the touch screens which initially created great furore.gone are the days when you have to fiddle with the touch screens and end scratching up. touch screen displays are ubiquitous worldwide. Frequent touching a touchscreen display with a pointing device such as a finger can result in the gradual desensitization of the touchscreen to input and can ultimately lead to failure of the touchscreen.

TO AVOID THIS A SIMPLE USER INTERFACE FOR TOUCHLESS CONTROL OF ELECTRICALLY OPERATED EQUIPMENT IS BEING DEVELOPED. ELLIPTIC LABS INNOVATIVE TECHNOLOGY LETS YOU CONTROL YOUR GADGETS LIKE COMPUTERS, MP3 PLAYERS OR MOBILE PHONES WITHOUT TOUCHING THEM. A SIMPLE USER INTERFACE FOR TOUCHLESS CONTROL OF ELECTRICALLY OPERATED EQUIPMENT. UNLIKE OTHER SYSTEMS WHICH DEPEND ON DISTANCE TO THE SENSOR OR SENSOR SELECTION THIS SYSTEM DEPENDS ON HAND AND OR FINGER MOTIONS, A HAND WAVE IN A CERTAIN DIRECTION, OR A FLICK OF THE HAND IN ONE AREA, OR HOLDING THE HAND IN ONE AREA OR POINTING WITH



THE TOUCH LESS TOUCH SCREEN SOUNDS LIKE IT WOULD BE NICE AND EASY, HOWEVER AFTER CLOSER EXAMINATION IT LOOKS LIKE IT COULD BE QUITE A WORKOUT. THIS UNIQUE SCREEN IS MADE BY TOUCHKO, WHITE ELECTRONICS DESIGNS, AND GROUP 3D. THE SCREEN RESEMBLES THE NINTENDO WII WITHOUT THE WII CONTROLLER. WITH THE TOUCHLESS TOUCH SCREEN YOUR HAND DOESN'T HAVE TO COME IN CONTACT WITH THE SCREEN AT ALL, IT WORKS BY DETECTING YOUR HAND MOVEMENTS IN FRONT OF IT. THIS IS A PRETTY UNIQUE AND INTERESTING INVENTION, UNTIL YOU BREAK OUT IN A SWEAT. NOW THIS TECHNOLOGY DOESN'T COMPARE TO THE HOLOGRAM-LIKE IO2 TECHNOLOGIES HELIODISPLAY M3, BUT THAT IS FOR ANYONE THAT HAS \$18,100 LAYING AROUND.

EVERYBODY LOVES A TOUCH SCREEN AND WHEN YOU GET A GADGET WITH TOUCH SCREEN THE EXPERIENCE IS REALLY EXHILARATING. WHEN THE I-PHONE WAS INTRODUCED, EVERYONE FELT THE SAME.

BUT GRADUALLY, THE EXHILARATION STARTED FADING. WHILE USING THE PHONE WITH THE FINGER TIP OR WITH THE STYLUS THE SCREEN STARTED GETTING LOTS OF FINGER PRINTS AND SCRATCHES. WHEN WE USE A SCREEN PROTECTOR; STILL DIRTY MARKS OVER SUCH BEAUTIFUL GLOSSY SCREEN IS A STRICT NO-NO. SAME THING HAPPENS WITH I-POD TOUCH.

#### TECHNOLOGY BEHIND IT?

IT OBVIOUSLY REQUIRES A SENSOR BUT THE SENSOR IS NEITHER HAND MOUNTED NOR PRESENT ON THE SCREEN. THE SENSOR CAN BE PLACED EITHER ONTHE TABLE OR NEAR THE SCREEN. AND THE HARDWARE SETUP IS SO COMPACT THAT IT CAN BE FITTED INTO A TINY DEVICE LIKE A MP3 PLAYER OR A MOBILE PHONE. IT RECOGNIZES THE POSITION OF AN OBJECT FROM AS 5 FEET. THE SYSTEM IS CAPABLE OF DETECTING MOVEMENTS IN 3-DIMENSIONS WITHOUT EVER HAVING TO PUT YOUR FINGERS ON THE SCREEN. THEIR PATENTED TOUCHLESS INTERFACE DOESN'T REQUIRE THAT YOU WEAR ANY SPECIAL SENSORS ON YOUR HAND EITHER. YOU JUST POINT AT THE SCREEN (FROM AS FAR AS 5 FEET AWAY), AND YOU CAN MANIPULATE OBJECTS IN 3D. SENSORS ARE MOUNTED AROUND THE SCREEN THAT IS BEING USED, BY INTERACTING IN THE LINE-OF-SIGHT OF THESE SENSORS THE MOTION IS DETECTED AND INTERPRETED INTO ONSCREEN MOVEMENTS. WHAT IS TO STOP UNINTENTIONAL GESTURES BEING



"IN THE NEXT THREE TO FIVE YEARS, HYBRID SYSTEMS WILL BE COMPLETELY REPLACED BY NATIVE SOLID-STATE STORAGE," SAYS JASON BOXALL, TECH DATA VICE PRESIDENT, VENDORS AND ALLIANCES, ADVANCED SOLUTIONS EUROPE. HE PREDICTS THIS WILL INCREASE THE NEED TO RE-ARCHITECT THE NETWORKING AND COMPUTING TIERS AND TAKE ADVANTAGE OF THE LOW LATENCY, PARALLEL-ACCESS STORAGE. CLIENTS WILL INCREASINGLY LOOK TO STORE "COLD" DATA AND ARCHIVE/BACK UP DATA INTO THE CLOUD "TO MAXIMISE THE BENEFITS OF PRICEY – BUT ULTIMATELY ULTRAFAST – ON-PREMISE FLASH STORAGE SYSTEMS".

HE SUGGESTS THAT MANY CLIENTS WILL SEEK TO USE HYPER-CONVERGED SYSTEMS "TO PROVIDE AN INTEGRATED, WELL-DESIGNED, BALANCED SYSTEM, AS WELL AS CLOUD-LIKE CONSUMPTION OF IT. THIS IS A VERY EFFECTIVE WAY OF REMOVING THE NEED FOR SYSTEM UPGRADES AND THE COMPLEXITY THIS BRINGS. HCI – COUPLED WITH HYBRID CLOUD – HAS THE POTENTIAL TO BECOME THE PREFERRED WAY OF DEPLOYING IT WITH SME CUSTOMERS".

CHRIS ADAMS, PRESIDENT AND COO AT PARK PLACE TECHNOLOGIES, AGREES THAT INTEREST IN HYBRID ARRAYS WILL WANE AS ALL-FLASH ARRAYS BECOME MORE POPULAR AND THERE WILL BE "FEW COMPELLING ARGUMENTS FOR COMPLICATING SYSTEMS WITH HDDS". HE ARGUES THAT "NO ONE WHO HAS INSTALLED SSDS IS REGRETTING THE DECISION, AND THERE IS GOOD REASON TO BELIEVE MATERIALS SHORTAGES ARE ABATING. COSTS WILL START TO FALL AGAIN, LEAVING FEW BARRIERS TO INSTALLING FLASH FOR PERFORMANCE AND OPEX SAVINGS REA-

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NVME SSDS WILL ALSO GAIN TRACTION, HE ADDS, BECAUSE THEY DELIVER TWO TO THREE TIMES THE PERFORMANCE AND ABOUT HALF THE LATENCY WHILE ONLY ADDING 10% TO THE PURCHASE PRICE OF A STORAGE SYSTEM. "CUSTOMERS ARE GETTING READY TO DIVE IN," ADAMS CLAIMS. "THAT BEING SAID, NVME IS ALSO LIKELY TO SHOW UP IN MOST PRODUCT LINEUPS, SO IT WON'T BE A SIGNIFICANT BRAND DIFFERENTIATOR."

HE CONCURS THAT HYPERCONVERGED INFRASTRUCTURE WILL ALSO PROVE ATTRACTIVE: "THE SOFTWARE-CENTRIC APPROACH AND ALMOST LEGO-LIKE SCALING IS A GOOD FIT FOR MANY DATA CENTERS. HCI WITH ALL-FLASH IS AN OBVIOUS CHOICE." STORAGE CLASS MEMORY (SCM) IS ANOTHER POTENTIAL GROWTH AREA ALTHOUGH THE PRICE POINT "MAY KEEP A LID ON DEMAND FOR NOW". BUT WITH MUCH FASTER READ/WRITE SPEED THAN FLASH, HIGHER IOPS, COMPARABLE THROUGHPUT AND GRANULAR DATA ACCESS AT THE BIT OR WORD LEVEL, IT COULD TEMPT SOME ENTERPRISES. "SCM MAY BE MORE OF A 2019-AND-BEYOND CONCERN, BUT THE CHANNEL SHOULD BEGIN PREPARING NOW," ADAMS ADDS.

AND WHILE TRADITIONAL MANUFACTURERS SUCH AS DELLEMC, HPE, IBM AND NETAPP STILL HAVE A PLACE, ALL-FLASH "HAS OPENED THE DOORS TO NEWER ENTRANTS, SUCH AS PURE STORAGE, AND HCI IS PROPELLING SALES UPWARDS FOR THE LIKES OF NUTANIX AND OTHERS".

PETER YARWOOD, EMEA STORAGE CHANNEL SALES DIRECTOR AT <u>DELL EMC</u>, EXPECTS "TO SEE A HUGE INTEREST IN MULTI-CLOUD ENVIRONMENTS, WE'RE REALLY ONLY AT THE TIP OF THE ICEBERG NOW". WITH IOT AND SENSORS, THERE WILL BE LOTS AND LOTS OF DATA COMING INTO A CENTRAL SYSTEM. "BY LOOKING AT HOW WE CAN HAVE DATA AT THE EDGE OF THE IOT ENVIRONMENT, MOVING TO THE CORE AND THEN INTO THE CLOUD WE HAVE SOFTWARE THAT CAN ALLOW THIS DATA TO MOVE THROUGH MULTIPLE CLOUDS AND STRETCH THE STORAGE POOL," HE SAYS. THIS DELIVERS THE BEST ECONOMIC VALUE, SECURITY AND PROTECTION, "BY DEVELOPING MULTIPLE GOLD COPIES OF THE DATA ACROSS A VARIETY OF CLOUDS, ANY OF WHICH CAN BE DISCONNECTED WITHOUT AFFECTING THE OTHERS OR CREATING DATA-HEAVY BACK-UPS".

NVME AND STORAGE CLASS MEMORY DEVICES WILL BE REQUIRED TO SUPPORT THIS ENVIRONMENT. "AS THE REALITIES OF IOT SENSORS BECOMES REAL, THE CHANNEL IS GOING TO HAVE TO PROVIDE CUSTOMERS WITH A DIFFERENT TYPE OF DEVICE TO DELIVER THIS DISTRIBUTED STORAGE ACROSS THE EDGE AND AT THE CENTRE," YARWOOD ADDS.

MICHAEL CADE, GLOBAL TECHNOLOGIST AT <u>VEEAM</u>, PREDICTS THAT "MANY CUSTOMERS WILL STILL WANT TO SEE SIMPLICITY, EFFICIENCY AND PERFORMANCE AS THEY CONTINUE TO PURCHASE THEIR STORAGE INTO THE SHORT TERM FUTURE". HE ARGUES THAT STORAGE VENDORS ARE STARTING TO REALISE "THE <u>HARDWARE STORAGE PLAY</u> IS NOT GOING TO BE THEIR STRENGTH IN YEARS TO COME AND AS A RESULT ARE BRANCHING INTO SOFTWARE AND CLOUD-BASED STORAGE OFFERINGS. VERSATILITY WILL BE A STRING TO THE BOW OF THE STORAGE VENDOR TO THESE CUSTOMERS". LIKE BOXALL AND ADAMS, HE THINKS HYPER-CONVERGENCE WILL CONTINUE TO GROW "BECAUSE IT BRINGS A SIMPLE APPROACH TO ON-PREMISES HARDWARE".

CLOUD DATA MANAGEMENT WILL ALSO BE AN IMPORTANT CONSIDERATION, ACCORDING TO MARTIN BROWN, DIRECTOR WEUR AT <u>RUBRIK</u>. "IN TODAY'S DIGITAL WORLD, THE DEMAND FOR CLOUD DATA MANAGEMENT IS ONLY INCREASING," HE CLAIMS. "THE CHANNEL MUST WORK TO MEET THIS DEMAND WITH SUPPLY, NOT ONLY SO THAT THEY CAN SELL SOLUTIONS AND MAINTAIN HIGHER MARGINS, BUT ALSO SO THAT THEY CAN ALIGN WITH THEIR CUSTOMERS' NEEDS AND REMAIN RELEVANT WITHIN THE MARKET."

VENDORS WILL NEED TO HELP PARTNERS UNDERSTAND HOW TO MAKE THE CHANGE FROM APPLIANCE SALE TO CLOUD AND SHARED SERVICES MODELS. "IT'S VERY MUCH IN THE INTEREST OF VENDORS TO ENSURE THAT THEIR PARTNERS ARE FULLY ENABLED," HE ADDS.

FLORIAN MALECKI, INTERNATIONAL PRODUCT MARKETING DIRECTOR AT STORAGE CRAFT, SAYS THE SERVICES MODEL IS IMPORTANT. "TO SUCCEED MOVING FORWARD, THE CHANNEL WILL NEED TO MOVE AWAY FROM SELLING BACKUP AND STORAGE; AND REPLACE IT WITH FULLY INTEGRATED SOLUTIONS AND SERVICES THAT DELIVER BUSINESS CONTINUITY AND DISASTER RECOVERY," HE WARNS. "CHANNEL PARTNERS NEED TO OFFER INTELLIGENCE TO DATA MANAGEMENT AND BACK UP, PLUS INSTANT AND GUARANTEED DATA RECOVERY IN THE EVENT OF FAILURE – REGARDLESS OF WHERE THE FAILURE HAPPENS AND WHERE THE DATA IS, OR WAS, LOCATED."

DOUGLAS SOLTESZ, DIRECTOR PRODUCTION SOLUTIONS, SME AT <u>STORAGE MADE EASY</u> POINTS TO THE RAPID EVOLUTION IN IT WITH THE EMERGENCE OF TECHNOLOGIES SUCH AS DOCKER, AWS, ERASURE CODING, THAT ARE DISRUPTING THE STATUS QUO. "WE HAVE SEEN A NUMBER OF TRADITIONAL ENTERPRISE STORAGE VENDORS DISRUPTED IN REVENUE RECENTLY," HE ADDS, "AND THE CHANNEL NEEDS TO SEE THIS AS A SIGN TO START TAKING NEW OR SMALLER PLAYERS IN STORAGE SERIOUSLY."

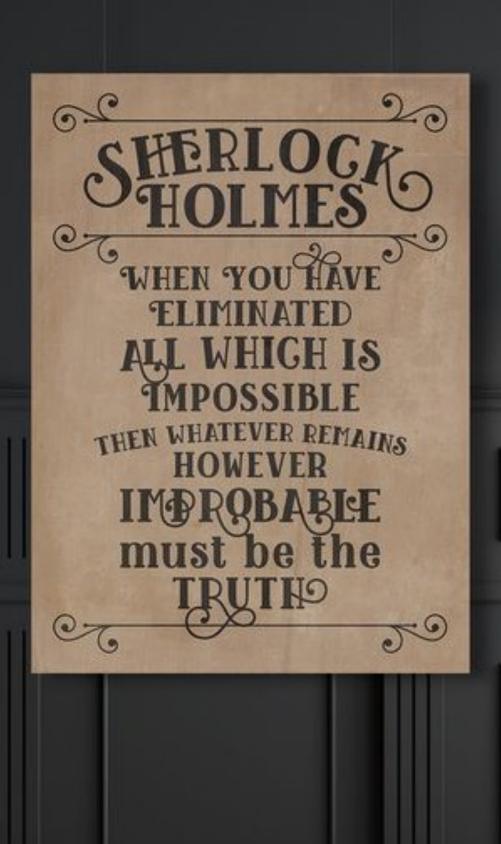
ADAMS AT PARK PLACE TECHNOLOGIES ARGUES THAT WITH STORAGE BE-COMING MORE PERFORMANCE-DRIVEN AND THE ECOSYSTEM OF OEMS BECOMING MORE DIVERSE, PARTNERS FACE "A NUMBER OF CHALLENGES" IN DELIVERING, IMPLEMENTING AND SUPPORTING THE STORAGE TECHNOLOGIES CUSTOMERS WANT NOW AND IN THE FUTURE. WITH MUCH OF THE STORAGE GROWTH SHIFTING TO NEW MARKET ENTRANTS IN SPECIFIC AREAS, THERE ARE MORE BRANDS AND MORE PRODUCTS PARTNERS NEED TO BE AWARE OF.

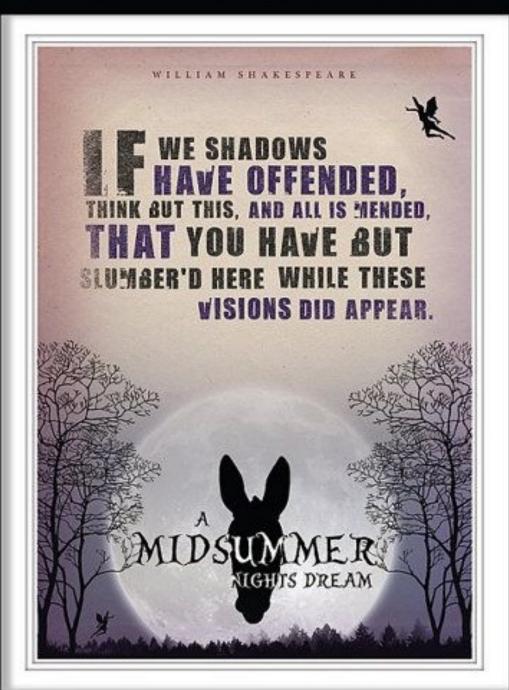
"THIS MAKES IT HARDER FOR A CHANNEL PARTNER, ESPECIALLY ONE TIED STRONGLY TO ONE OR TWO MAJOR OEMS, TO OFFER AND SUPPORT A SUFFICIENTLY ENTICING VARIETY OF TECHNOLOGIES TO KEEP CUSTOMERS AT THE TROUGH, RATHER THAN SHOPPING ELSEWHERE FOR THOSE PROFICIENT WITH VARIOUS EMERGING BEST-OF-BREED MANUFACTURERS," HE WARNS.

AND THAT'S NOT ALL. THERE'S ALSO A SHIFT IN SOME AREAS FROM UNIFIED TO SPECIALISED STORAGE THAT ADDS TO THE COMPLEXITY WHILE, ON THE OTHER SIDE, THE MIXING OF COMPUTE AND STORAGE IN HCI COULD "NECESSITATE A GENERALIST'S KNOWLEDGE TO ADDRESS CERTAIN TROUBLESHOOTING TASKS. ADD IN SOFTWARE-DEFINED STORAGE AND AI-BASED WORKLOAD OPTIMISATION AND CHANNEL PARTNERS WILL NEED TO LEVERAGE HARDWARE AND SOFTWARE UNDERSTANDING TO DELIVER THE PERFORMANCE AND SUPPORT CUSTOMERS EXPECT".

STORAGE MAY WELL BE HOT, BUT IF PARTNERS DON'T GET IT RIGHT, THEY COULD FACE A COLD FUTURE.









Whene'er he faced a task and knew
He should begin it,
He could not start to put it through
For "just a minute."
And, though the case demanded speed
He could not move just then; but he'd
Be ready for it, yes, indeed!
In "just a minute."

His purposes were out of rhyme
By "just a minute."
The whole world seemed ahead of time
By "just a minute."
He could not learn to overhaul
His many duties, large and small,
But had to beg them, one and all,
To "wait a minute."

In manhood he was still delayed

By "just a minute."

He might have won, had Fortune stayed

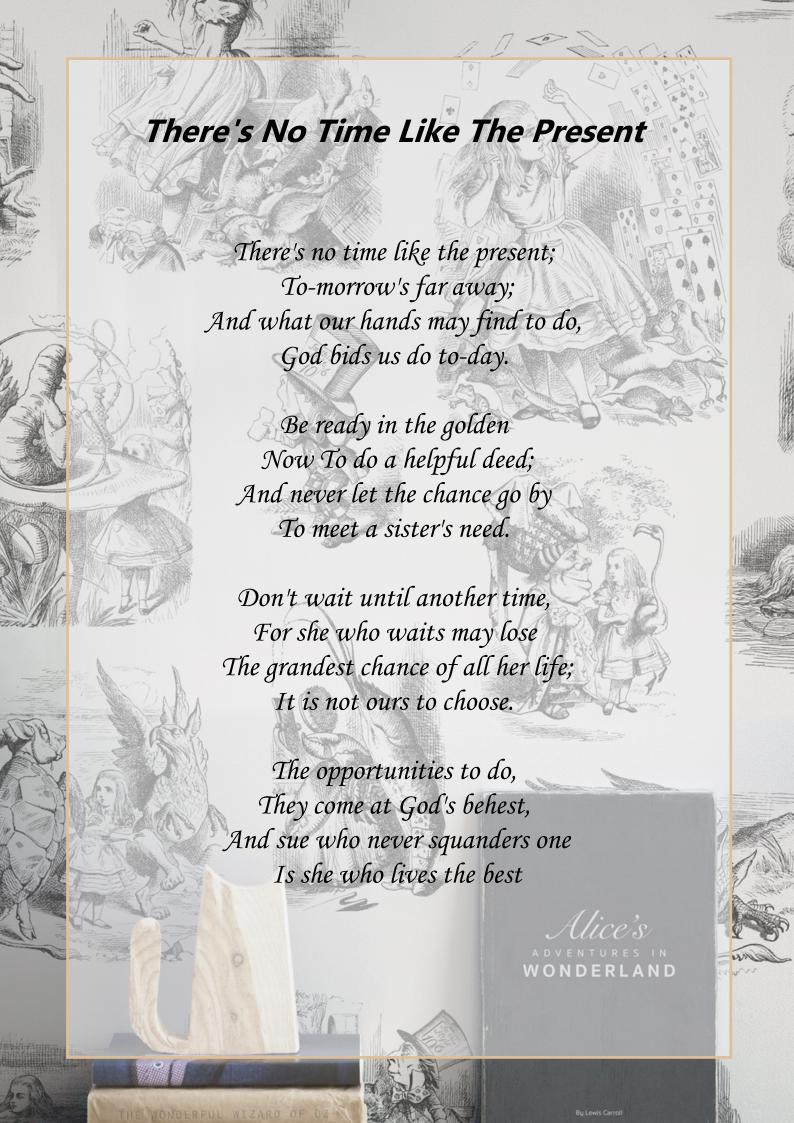
For "just a minute."

But at the end of life he railed

At "cruel Fate," and wept and wailed

Because he knew that he had failed

By "just a minute."







"ONCE, THERE WAS AN OLDER MAN, WHO WAS BROKE, LIVING IN A TINY HOUSE AND OWNED A BEAT UP CAR. HE WAS LIVING OFF OF \$99 SOCIAL SECURITY CHECKS. AT 65 YEARS OF AGE, HE DECIDE THINGS HAD TO CHANGE. SO HE THOUGHT ABOUT WHAT HE HAD TO OFFER. HIS FRIENDS RAVED ABOUT HIS CHICKEN RECIPE. HE DECIDED THAT THIS WAS HIS BEST SHOT AT MAKING A CHANGE.

HE LEFT KENTUCKY AND TRAVELLED TO DIFFERENT STATES TO TRY TO SELL HIS RECIPE. HE TOLD RESTAURANT OWNERS THAT HE HAD A MOUTH WATERING CHICKEN RECIPE. HE OFFERED THE RECIPE TO THEM FOR FREE, JUST ASKING FOR A SMALL PERCENTAGE ON THE ITEMS SOLD. SOUNDS LIKE A GOOD DEAL, RIGHT?

UNFORTUNATELY, NOT TO MOST OF THE RESTAURANTS. HE HEARD NO OVER 1000 TIMES. EVEN AFTER ALL OF THOSE REJECTIONS, HE DIDN'T GIVE UP. HE BELIEVED HIS CHICKEN RECIPE WAS SOMETHING SPECIAL. HE GOT REJECTED 1009 TIMES BEFORE HE HEARD HIS FIRST YES.

WITH THAT ONE SUCCESS COLONEL HARTLAND SANDERS CHANGED THE WAY AMERICANS EAT CHICKEN. KENTUCKY FRIED CHICKEN, POPULARLY KNOWN AS KFC, WAS BORN.

REMEMBER, NEVER GIVE UP AND ALWAYS BELIEVE IN YOUR-SELF IN SPITE OF REJECTION."

# Think outside of the box

"IN A SMALL ITALIAN TOWN, HUNDREDS OF YEARS AGO, A SMALL BUSINESS OWNER OWED A LARGE SUM OF MONEY TO A LOAN-SHARK. THE LOAN-SHARK WAS A VERY OLD, UNATTRACTIVE LOOKING GUY THAT JUST SO HAPPENED TO FANCY THE BUSINESS OWNER'S DAUGHTER.

HE DECIDED TO OFFER THE BUSINESSMAN A DEAL THAT WOULD COMPLETELY WIPE OUT THE DEBT HE OWED HIM. HOWEVER, THE CATCH WAS THAT WE WOULD ONLY WIPE OUT THE DEBT IF HE COULD MARRY THE BUSINESSMAN'S DAUGHTER. NEEDLESS TO SAY, THIS PROPOSAL WAS MET WITH A LOOK OF DISGUST.

THE LOAN-SHARK SAID THAT HE WOULD PLACE TWO PEBBLES INTO A BAG, ONE WHITE AND ONE BLACK.

THE DAUGHTER WOULD THEN HAVE TO REACH INTO THE BAG AND PICK OUT A PEBBLE. IF IT WAS BLACK, THE DEBT WOULD BE WIPED, BUT THE LOAN-SHARK WOULD THEN MARRY HER. IF IT WAS WHITE, THE DEBT WOULD ALSO BE WIPED, BUT THE DAUGHTER WOULDN'T HAVE TO MARRY THE LOAN-SHARK.

STANDING ON A PEBBLE-STREWN PATH IN THE BUSINESSMAN'S GARDEN, THE LOAN-SHARK BENT OVER AND PICKED UP TWO PEBBLES. WHILST HE WAS PICKING THEM UP, THE DAUGHTER NOTICED THAT HE'D PICKED UP TWO BLACK PEBBLES AND PLACED THEM BOTH INTO THE BAG.

HE THEN ASKED THE DAUGHTER TO REACH INTO THE BAG AND PICK ONE.

THE DAUGHTER NATURALLY HAD THREE CHOICES AS TO WHAT SHE COULD HAVE DONE:

- 1. REFUSE TO PICK A PEBBLE FROM THE BAG.
- 2. TAKE BOTH PEBBLES OUT OF THE BAG AND EXPOSE THE LOAN-SHARK FOR CHEATING.
- 3. PICK A PEBBLE FROM THE BAG FULLY WELL KNOWING IT WAS BLACK AND SACRIFICE HERSELF FOR HER FATHER'S FREEDOM.

SHE DREW OUT A PEBBLE FROM THE BAG, AND BEFORE LOOKING AT IT 'ACCIDENTALLY' DROPPED IT INTO THE MIDST OF THE OTHER PEBBLES. SHE SAID TO THE LOAN-SHARK;

OH, HOW CLUMSY OF ME. NEVER MIND, IF YOU LOOK INTO THE BAG FOR THE ONE THAT IS LEFT, YOU WILL BE ABLE TO TELL WHICH PEBBLE I PICKED.'

THE PEBBLE LEFT IN THE BAG IS OBVIOUSLY BLACK, AND SEEING AS THE LOAN-SHARK DID-N'T WANT TO BE EXPOSED, HE HAD TO PLAY ALONG AS IF THE PEBBLE THE DAUGHTER DROPPED WAS WHITE, AND CLEAR HER FATHER'S DEBT."

# **PLACEMENTS & ACHIEVEMENT**



# **CONGRATULATIONS TO OUR PLACED STUDENTS!!**

ı					
	SR. NO.	ROLL NO.	NAME	COMPANY PLACED	
	1	1514310192	SHIVANG BHATNAGAR	ACXIOM CONSULTING	
	2	1514310199	SHRISTY MAHESHWARY	ACXIOM CONSULTING	
	3	1514310132	NISHANT SRIVASTAVA	ANR	
	1	1414310033	ANANYA SINGH (RE-ADMIT)	CAPITAL VIA	
	2	1514310006	ABHISHEK GUPTA	CAPITAL VIA	
	3	1514310008	ABHISHEK KUMAR PANDEY	CAPITAL VIA	
	4 5	1514310017 1514310031	ABHISHEK TRIVEDI AMAN GUPTA	CAPITAL VIA CAPITAL VIA	
				CAPITAL VIA	
	6 -	1514310027	ANAND KUMAR SINGH		
	7 8	1514310038	ANANT BHARDWAJ ANURAG SHAKYA	CAPITAL VIA CAPITAL VIA	
	o 9	1514310049 1514310054	ARPIT KUMAR	CAPITAL VIA	
	) 10	1514310068	CHANDAN MISRA	CAPITAL VIA	
	11	1514310069	DEEKSHA PAL	CAPITAL VIA	
	12	1514310077	GAURAV MISHRA	CAPITAL VIA	
	13	1514310080	HARI SHANKAR TIWARI	CAPITAL VIA	
	14	1514310082	HARSHIT GUPTA	CAPITAL VIA	
	15	1514310099	LABEEB AHMED	DELOITEE	
	16	1514310167	RUPAL RATURI	DELOITEE, TCS	
	17	1514310089	ISHIKA SHUKLA	DELOITEE, TCS	
	18	1514310013	ABHISHEK SETHI	GENPECT HEADSTRONG	
	19	1514310063	AYUSH TRIPATHI	GINGERWEBS	
	20	1514310106	MANNAT YADAV	GINGERWEBS	
	21	1514310168	SACHIN GUPTA	GINGERWEBS	
	22	1514310124	NAVEEN MISHRA	INSTALOCATE, TESTBOOK	
	23	1514310066	CHAKSHU	MOBLEZION	
	24	1514310045	ANSHUL KUMAR SAROHA	MOBLEZION, INDIAMART	
	25	1514310075	DIVYANSHU SRIVASTAVA	MOBLEZION, POLESTAR	
	26	1514310022	ADITYA PRATAP SINGH	MOBLEZION, TCS, UHG	
	27	1514310100	LAV AGARWAL	QA INFOTECH	
	28	1514331037	HIMANSHU CHAUHAN	QA INFOTECH	
	29	1514310138	OJAS MODI	QA INFOTECH	
	30	1514310071	DEVYANSH AGRAWAL	QA INFOTECH, MOBILIZEON	

SR. NO.	ROLL NO.	NAME	COMPANY PLACED
30	1514310059	AVIRAL RUHELA	QA INFOTECH, MOBLIZION, TCS
31	1514310200	SHUBHAM CHAURASIA	QA INFOTECH, MOBLIZION, TCS
32	1514310056	ASHWANI KUMAR	QA INFOTECH, POLESTAR
33	1514310001	A. RUPALI	TCS
34	1514310011	ABHISHEK RAI	TCS
35	1514310016	ABHISHEK SINGH CHAUHAN	TCS
36	1514310028	<b>AKHIL</b>	TCS
37	1514310053	ARPIT GARG	TCS
38	1514310060	AVNEESH JHA	TCS
39	1514310067	CHANCHAL KUMAR MISHRA	TCS
40	1514310072	DIKSHA KHURANA	TCS
41	1514310073	DIVYANSH TIWARI	TCS
42	1514310102	LOKESH KUMAR TIWARI	TCS
43	1514310108	MANVIR SINGH	TCS
44	1514310114	MOHAMMAD WASIUDDIN	TCS
45	1514310118	MOHIT BHARDWAJ	TCS
46	1514310118	NEETISH SINGH	TCS
47	1514310125	NITIN SAHU	TCS
48	1514310133	PRADEEP YADAV	TCS
		PRANSHUL GOEL	TCS
49	1514310144		
50	1514310146	PRASHANT SISODIYA	TCS
51	1514310150	PRIYVART RAGHAV	TCS
52	1514310160	REEDAM CHOUDHARY	TCS
53	1514310165	ROOPAK SINGH	TCS
54	1514310190	SHIVAM RAI	TCS
55	1514310195	SHIVANSH SRIVASTAVA	TCS
56	1514310198	SHREYA SINGH	TCS
57	1514310206	SOUMYA GUPTA	TCS
58	1514310209	SRISHTI ROBIN	TCS
59	1514310231	VASU AWASTHI	TCS
60	1514310239	VINEET YADAV	TCS
61	1514310242	VISHAL SINGH	TCS
62	1514310244	VRINDA SHARMA	TCS
63	1514331017	ANISH ANAND	TCS
64	1514310015	ABHISHEK SINGH CHAUHAN	TCS
65	1514310110	MEGHNA RAJ SAXENA	TCS
66	1514310194	SHIVANSH SRIVASTAVA	TCS
67	1514310207	SOURAV DAS	TCS
68	1514310230	VARUN TYAGI	TCS
69	1514310241	VISHAL AGRAWAL	TCS
70	1514310243	VISHAL SINGH	TCS
71	1514310245	VYOM MADHUR	TCS
72	1514331042	JAGVEER	TCS
73	1514310145	PRASHANT CHAUHAN	TCS
74	1514310032	AMAN RATHORE	TCS CODEVITA
75	1514310154	RAJARSHI SAHU	TCS CODEVITA
76	1514310105	MANISH BANSAL	TCS CODEVITA
			TCS CODEVITA, CLEARED 2ND
77	1514310019	ADARSH KUMAR SINGH	ROUND
<b>7</b> 8	1514310148	PRATIYAKSHI KAPIL	UHG
79	1514310051	ARCHIT CHATURVEDI	VVDN
17	1014010001	AROTH CHATORYEDI	X X DIX

# EXPERIENCES SHARED BY FEW OF OUR PLACED STU-DENTS



MY NAME IS AVIRAL RUHELA. "SO, I GOT PLACED IN THREE COMPANIES IN A MATTER OF JUST 20 DAYS."

AS FANCY AS THIS SENTENCE SEEMS, FANCIER WAS THE PATH TO THAT FORT. RIGHT FROM THE BEGINNING, I HAD A HUGE FETISH FOR LEARNING NEW TECHNOLOGIES AND TRYING TO BUILD SOMETHING MEANINGFUL OUT OF EVERYTHING.

SO HERE IS THE CHRONOLOGICAL SPECTRUM OF MY KNOWLEDGE:

- I LEARNED JAVA IN 9<sup>™</sup> AND 10<sup>™</sup> STANDARD (HAD IT IN MY CURRICULUM).
- 11<sup>™</sup> AND 12<sup>™</sup> TAUGHT ME DESKTOP APPLICATION DEVELOPMENT.
- B.TECH. FIRST YEAR, IT WAS JAVA AGAIN (HAD TO TIE UP LOOSE ENDS AND GAIN PROFICIENCY).
- SECOND YEAR IT WAS EMBEDDED PROGRAMMING (ARDUINO, CHIPS AND WIRES.... ALL THE COOL STUFF)
- THIRD YEAR IT WAS ANDROID APPLICATION DEVELOPMENT
- AND AS OF NOW I'M TRYING TO GET MY HANDS COMFY ON BIG DATA.

NOW COMES THE PART WHERE IT ALL COMES TO TEST, WHERE FINALLY THE METTLE OF YOUR KNOWLEDGE IS TESTED, THE PLACEMENTS. I'LL WALK YOU THROUGH MY EXPERIENCE WITH ALL THREE COMPANIES IN ORDER. I'LL BE AS DETAILED AS POSSIBLE AND I HOPE THIS HELPS:)

THE FIRST ONE TO VISIT US WAS A STARTUP, MOBILIZEON. THEY WERE MY FIRST AND THE TOUGHEST CHALLENGE, THEY TOOK A LONG PROGRAMMING TEST IN WHICH THEY GAVE US THE LIBERTY OF CHOOSING A LANGUAGE OF OUR OWN AND YOU COULD EVEN USE THE INTERNET. (FAIR CHALLENGE BUT THEY KNEW WE WOULD NEVER FIND ANY SOLUTIONS OUT THERE:P) THEY GAVE US TEN PROGRAMS OF VARYING DIFFICULTY, I COULD DO NINE OUT OF THOSE AND A BUNCH OF MCQ QUESTIONS (THE USUAL STUFF, NOTHING FANCY).

3. THIRD WAS THE WHOLLY MAMMOTH OF INDIA, TCS! THEY TOOK AN ONLINE TEST (APTITUDE AND PROGRAMMING BOTH) IN WHICH THERE WERE EASY AS WELL AS A VERY FEW HARD QUESTIONS. THE PROGRAMMING QUESTION WAS TOO EASY! I MADE THAT IN LITERALLY ONE ATTEMPT 2 MINUTES. (AND IT WAS THE SAME WITH EVERYONE) AFTER THAT, THERE WAS AN INTERVIEW ROUND AND AN HR ROUND.

#### POINTS FOR PLACEMENT PREPARATION:

LEARN LOADS OF MCQ'S AND PRACTICE THOSE HUGE ONLINE PROBLEMS DAY-NIGHT! WELL, IF YOU DO THAT, THEN ITS GREAT! BUT IF YOU CAN'T THEN ALSO YOU'RE NOT AT A DISADVANTAGE. JUST TAKE THINGS SLOWLY AND STEADILY. IN BTECH WE HAVE PLENTY OF TIME (BUT WE WASTE MOST OF IT WHILE COM-PLAINING THAT WE DON'T HAVE TIME). SO HERE ARE SOME GUIDELINES:

- 1. CHOOSE A CORE LANGUAGE: THE DISCUSSION IS OPEN TO ANY LANGUAGE YOU'D LOVE. THERE REALLY IS NO NEED OF LEARNING EVERYTHING, IT WILL NEITHER BENEFIT YOU, NOR WILL IT BE APPRECIATED. CORE SHOULD BE SINGULAR AND SOLID, ONE LANGUAGE ON WHICH YOU HAVE ABSOLUTE MASTERY, WHERE YOU'RE THE GUNSLINGER! MINE WAS JAVA AND EVERYTHING I LEARNED REVOLVED AROUND OR WAS IN SOME WAY CONNECTED TO JAVA.
- 2. CHOOSE THE ROCKS AND DEATH HOLES INSTEAD OF A PAVED ROAD: EVER HEARD OF THE QUOTE, "JUMP OFF A CLIFF AND GROW YOUR WINGS DURING THE FALL"? GUESS WHAT, IT WORKS! DON'T TRY TO BUY BOOKS AND ONLINE/OFFLINE COURSES AND ALWAYS BE CONSUMED WITH THE OVERWHELMING AMOUNT TO THEORETICAL KNOWLEDGE! THE WAY I LEARNED EVERYTHING WAS, "TAKE A SMALL MINIMAL COURSE, CHOOSE AN INTERESTING PROJECT AND START BUILDING IT!! " AS YOU'LL BUILD THINGS, YOU'LL FACE PROBLEMS THAT NONE OF THOSE BOOKS EVER TALKED OF! YOU'LL FACE THEM, SEARCH FOR SOLUTIONS AND LEARN TO FIGHT WITH THEM IN THE REAL WORLD. STACKOVERFLOW.COM IS A LIFESAVER FOR SUCH SITUATIONS.
- 3. KEEP BUILDING PROJECTS: I HAD SO MANY PROJECTS IN MY HAND THAT I HAD TO REMOVE LIKE SIX, SEVEN OF THEM TO KEEP MY CV ONE PAGE. AND TRUST ME, IT'LL HELP YOU IN WAYS YOU CAN'T EVEN IMAGINE.
- 4. JUST PAY AT LEAST SOME ATTENTION ON THE CORE CS SUBJECTS LIKE DATA STRUCTURE, DA, OS.
- 5. BE APTITUDE READY: JOIN SOME CAT COACHING, IT'LL HELP YOU WITH PLACEMENT'S FIRST STEP (THE APTI TEST) AND BETTER YET, MAYBE YOU'LL GET A GREAT B-SCHOOL FOR MASTERS.
- 6. STAY CONSISTENT.

#### **CRACKING TESTS:**

- 1. APTITUDE SKILLS ARE A MUST, THERE IS NO SHORTCUT IN THAT AREA.
- 2. PROGRAMMING: WELL TCS AND ALL THE BIG COMPANIES LIKE WIPRO, IN-FOSYS ETC KEEP THEIR PROGRAMMING CHALLENGES AT MEDIOCRE OR BE-GINNER LEVEL. NO, NEED TO WORRY ABOUT THOSE, IF YOUR LOGICS ARE IN GOOD SHAPE, IT'LL BE A BREEZE. JUST PREPARE FOR THOSE MCQ'S THOUGH.

#### INTERVIEWS:

HERE COMES THE PART WHICH MOST PEOPLE DREAD THE MOST. (THEY HAVE THEIR REASONS AND I DON'T BLAME THEM). BUT, I JUST LOVED THE INTERVIEWS!

#### **MOBILIZEON:**

THEY ASKED ME ABOUT MY PROJECTS, "THEY ASKED ABOUT ONE, I KEPT EXPLAINING ALL OF THEM AND THE FIRST INTERVIEW ENDED!" THEY MADE ME DRAW AN ER DIAGRAM AND EXPLAIN THE WORKING AND TECHNOLOGIES USED IN DETAIL. SECOND INTERVIEW, I WAS ASKED ABSTRACT QUESTIONS LIKE "IF I GIVE YOU 10 LACS WHAT WOULD YOU DO WITH IT" I SAID, "I'LL BUY A MAC AND WITH THE REST I'LL BOOT MY STARTUP". THEN I WAS GIVEN AN ARRAY OF DBMS QUERIES TO SOLVE AND AFTERWARDS, THEY STARTED ASKING THOSE ABSTRACT QUESTIONS AGAIN FOR A WHOLE HOUR! "WHAT IS YOUR MAIN AIM?" "WHAT IS YOUR BIGGEST FAILURE?" "EXPLAIN A FAILURE SITUATION WHERE YOU RETALIATED ON THE SPOT AND HANDLED THE WHOLE FAILURE SUCCESSFULLY" ETC. I JUST KEPT SMILING AND EVEN MADE A FEW JOKES, THE WHOLE INTERVIEW TURNED INTO A SIMPLE CONVERSATION

#### **QA INFOTECH:**

THEY HAD ALREADY ASSESSED US DURING THE PROGRAMMING TESTS. ALL THEY DID IN THE INTERVIEW WAS TO SEE IF WE COULD MAKE A CONVERSATION IN ENGLISH PROPERLY. THEY JUST ASKED, "TELL ME SOMETHING ABOUT YOU THAT I DON'T KNOW (SOMETHING THAT IS NOT ON THE CV)" AND THE INTERVIEW WAS OVER.

# TATA CONSULTANCY SERVICES:

THEY TOOK A DETAILED INTERVIEW, THEY ASKED ME ABOUT ALL MY PROJECTS IN DETAIL. THEN THEY ASKED ME TO RATE MYSELF ON A SCALE OF ZERO TO TEN ABOUT HOW GOOD I AM WITH JAVA ANDROID C C++ PYTHON AND SQL. I GAVE MYSELF MEDIOCRE SCORE ON ALL AND ZERO ON THE ONES I DIDN'T KNOW

AND EXPLAINED THE MEDIOCRE SCORE MY GIVING EXACT LIST OF THINGS I AM YET TO LEARN. THEY ASKED ME ABOUT MY FAVORITE SUBJECT DBMS, A FEW QUERIES AND THEORETICAL QUESTIONS. THEN THEY ASKED ME THAT YOU'RE ACCUSTOMED TO DOING INTERESTING WORKS, HOW WILL YOU HANDLE IF WE GIVE YOU A BORING TASK. I TOLD THEM I'D DO THAT BORING TASK WITH THE SAME ENERGIES AND IF YOU DON'T GIVE ME ANY WORK AT ALL, I'LL FIND SOME AND DO IT MYSELF! THEY ASKED OTHER ORGANIZATIONAL RELATED QUESTIONS TOO, LIKE WHY TCS?, WHAT DO YOU KNOW ABOUT US? ETC.THE HR ROUND WAS RATHER VERY SHORT LIVED, I WAS ASKED IF I COULD SHIFT TO SOUTH, DO NIGHT SHIFT ETC. EVEN IF THEY ASK YOU TO GO TO SPACE, JUST SAY YES!

#### GENERAL GUIDELINES:

- 1. DON'T LIE!: THOSE PEOPLE BEHIND THE DESK ARE BERSERKERS IN THE LIE DETECTION ARENA. THEY'LL KNOW YOUR BLUFF AND HIT YOU WITH BOLTS OF LIGHTNING! THERE IS NO NEED TO BE EXTRAORDINARY, JUST STAY SIMPLE CALM AND STRAIGHTFORWARD. NOBODY KNOWS EVERYTHING, FEEL NO SHAME IN SAYING "SIR/MAM, I AM NOT FAMILIAR WITH-IT". AND START TELLING THEM WHAT YOU KNOW INSTEAD.
  - 2. BRING THE INTERVIEWER TO YOUR BATTLEGROUND INSTEAD OF DEFENDING YOURSELF IN HIS PALACE: I WAS ALWAYS PRACTICAL IN MY APPROACH. THAT MADE ME WEAK WHEN IT CAME TO THOSE TRICKY THEORETICAL INTERVIEW QUESTIONS THEY ASK FROM LANGUAGES. BUT, I HAD PROJECTS THAT I KNEW WOULD IMPRESS ANYONE! WHAT I DID WAS MOLD MY CV IN A WAY THAT HE/SHE SEES THE PROJECTS FIRST AND THE LANGUAGES KNOWN SECTION AT THE LAST. EVEN WHEN INTRODUCING SELF, PROJECTS CAME RIGHT AFTER NAME, CITY, ACADEMICS. AND GUESS WHAT? THE TRICK WORKED! I HAVE BEEN TO SO MANY INTERVIEWS AND ALL OF THEM BEGAN AND ENDED ON MY PROJECTS. THIS IS WHERE THE PRACTICAL APPROACH HELPS. YOU NEVER KNOW WHAT THE INTERVIEWER MAY ASK FROM THE SUBJECTS OR YOUR LANGUAGE, BUT PROJECTS... YOU'VE BUILT THEM FROM SCRATCH BY YOURSELF, YOU KNOW ALL THE INS AND OUTS OF IT. ALSO THERE IS ONLY A SMALL POOL OF QUESTIONS THAT CAN BE ASKED. (LIKE ER DIAGRAM, HOW IT WORKS, APPLICATIONS, EFFICIENCY ETC.)
  - 3. ALWAYS KEEP A TECHNICAL SUBJECT MASTERED (I HAD DBMS). JUST IN CASE THE PROJECT PLAN DOES NOT WORK.
  - 4. PLEASE! BE CONFIDENT WITH ENGLISH. IT IS THE MOST IMPORTANT THING, THEY MIGHT TAKE A CONFIDENT FOOL AND LEAVE A SHY INTELLIGENT.
  - 5. KEEP YOURSELF AWARE OF CURRENT TECHNOLOGIES (NO DETAILS NEEDED, THEY JUST WANT TO SEE YOUR "AWARENESS" LEVEL).

MY NAME IS AMAN RATHORE FROM CSE BRANCH .IT WAS MY FIRST INTERVIEW EXPERIENCE THAT I HAD WITH INDIA'S LARGEST MNC, TCS. PLEASE READ IT IN DEEP AND TRY TO GET WHAT THEY ARE LOOKING FOR. I HAD REGISTERED FOR TCS CODEVITA ON NEXTSTEP.TCS.COM. SO MY FIRST MOTIVE WAS TO CRACK TCS CODEVITA ROUND IN ORDER TO GET AN



#### INTERVIEW CALL.

TCS CODEVITA ROUND WAS SCHEDULED ON 10 AUG 2018. SO I STARTED REVISING BASIC C LANGUAGE CONCEPT. I DID ALMOST 30 DAYS PRACTICE OF C (BASIC PROGRAMS, CODING ON HACKEREARTH). RESOURCES THAT ALL I PREFERRED FOR PREPARATION WAS BOOKS (EXPLORING C, LET US C). ONE MORE THING THAT I WOULD LIKE TO SHARE WITH ALL OF YOU IS THAT ALWAYS I KEEP INTEREST TOWARD MATHS AND PROBLEM SOLVING THAT ALL ABOVE HELPED ME TO CRACK TCS CODEVITA ROUND, THERE I WAS ABLE TO SOLVE ONE PROBLEM (WHICH WAS MORE FOCUSED ON MATHEMATICAL CONCEPT). AFTER FEW DAYS I RECEIVED MAIL THAT I HAVE CLEARED CODEVITA ROUND, NOW ITS TIME FOR ME TO FACE THE INTERVIEW.

NOW FOR THE INTERVIEW I HAD PREPARED JAVA, DBMS, BASIC C CONCEPT, FRONT END LANGUAGES LIKE HTML CSS, JS. THE REASON WHY I HAD PREPARED ALL ABOVE LANGUAGES WAS BECAUSE MY INDUSTRIAL PROJECT AND FINAL YEAR PROJECT WAS BASED ON THESE LANGUAGES.

NOW ON THE INTERVIEW DAY, THERE WERE AROUND \$00-1000 CANDIDATES ATTENDED THE INTERVIEW. SO THERE WERE 3 ROUNDS TR, MR, HR IN SEQUENCE.

#### **TECHNICAL ROUND**

THERE WERE 2 INTERVIEWERS IN MY PANEL. INTERVIEWER 1 ASKED ME TO INTRODUCE MYSELF. THEN HE ASKED ME TO WRITE PALINDROME, FIBONACCI PROGRAM. I WROTE BOTH PROGRAM IN C. THEN HE ASKED ME ABOUT PROJECT LIKE DFD, SDLC OF PROJECT. INTERVIEWER 1 THEN ASKED ME THAT ON WHICH DOMAIN I HAD WORKED IN THIS PROJECT, AS IT WAS JAVA, MYSQL.SO HE ASKED ME TO WRITE AROUND 7-8 SQL QUERIES (BASED ON QUESTION). I WAS ABLE TO WRITE 6 QUERIES CORRECTLY. THEN INTERVIEWER 2 ASKED ME TO EXPLAIN THE CODE THAT I HAD IN CODEVITA ROUND, ALSO HE HAD GIVEN ME SOME INPUTS TO EXPLAIN THAT CODE. THERE I EXPLAINED HIM VERY WELL. AFTERWARD HE

ASKED ME ABSTRACT CLASSES, JAVA OOPS CONCEPT, GARBAGE COLLECTION IN JAVA, SOME QUESTIONS ON COLLECTION( WHICH I WAS NOT ABLE TO ANSWER). INTERVIEWER 1 THEN ASKED ME THAT YOU BELONG TO DEFENSE BACKGROUND THAN WHY YOU ARE OPTING TCS INSPITE OF JOINING INDIAN ARMY. IT WAS JUST LIKE DROPPING BOMB OVER ME AS I WAS NOT EXPECTING THIS QUESTION. SO DEARS BE PREPARE FOR EVERY TYPE OF QUESTION, JUST SHOW SOME PRESENCE OF MIND THAT I DID AT THAT TIME. AFTER 25 MIN MY TR ENDED.

#### MR ROUND

I GOT CALL FOR MR ROUND AFTER 1 HR .I WAS LUCKY ONE AS 50% OF CANDIDATE WERE SENT BACK. THERE WAS 1 INTERVIEWER IN MY HR PANEL. HE ASKED ME ABOUT FAMILY BACKGROUND, MY FATHERS POSTING( AS HE WAS IN ARMY) THEN HE AKSED ME ABOUT AI. THEN HE ASKED ME THAT ARE YOU AWARE OF TECHNOLOGIES THAT CURRENTLY MNC ARE WORKING ON?HERE I ANSWERED HIM ABOUT AI, ML (WHICH WAS CORRECT UPTO SOME EXTENT). THEN ASKED ME THAT WHAT IS MY FAVORITE SUBJECT IN B.TECH? ALSO HE ASKED ABOUT MY STRONG POINTS AND WEAKNESS. FINALLY HE ASKED ME THE SAME THAT WAS ASKED BY INTERVIEWER 1 IN TR. BUT THIS I TIME ANSWERED VERY CLEVERLY. I TRIED TO GIVE THE BEST ANSWER. AND, NOW I AM EXPECTING FOR THE HR ROUND.

#### HR ROUND

IT WAS JUST LIKE A RAPID FIRE ROUND HE STARTED FIRING QUESTION ONE AFTER ONE. BEGAN WITH, ARE YOU AWARE OF TCS POLICY? HOW DO YOU KNOW ABOUT THIS RECRUITMENT? ARE YOU FLEXIBLE TO WORK ANYWHERE IN INDIA? WHERE DO YOU SEE YOURSELF IN THE NEXT FIVE YEARS? WHY TCS?FINALLY HE ASKED ME THAT ANY QUESTION?

SO I ASKED THAT SIR SHOULD I CONSIDERED MYSELF A PART OF TCS FAMILY. HE REPLIED WITH A DECENT SMILE, YES SURE .FINALLY AFTER FEW DAYS I RECEIVED MY CONFIRMATION MAIL AND TCS OFFER LETTER AND I GOT SELECTED IN TCS.

THIS WAS ALL ABOUT MY INTERVIEW EXPERIENCE.

I HAVE GAINED GOOD EXPERIENCE FROM THE INTERVIEW AND HAVE LEARNED THAT APART FROM SOUND KNOWLEDGE ONE NEEDS TO HAVE A REASONABLE CONFIDENCE AND EXCELLENT PRESENTATION SKILLS. ALSO, FORMAL ATTIRE IS A MUST TO MAKE A GOOD IMPRESSION.

THERE ARE NO TRICKS TO CRACK TCS INTERVIEW. JUST FOLLOW BELOW MENTIONED POINTS.

- 1. BE CONFIDENT IN YOUR ANSWER, DRESS SMARTLY AND BE VERY FORMAL TO YOUR INTERVIEWER.
- 2. ALWAYS REMEMBER, YOU NEED A JOB IN TCS.



MY NAME IS DEEKSHA KHURANA. FEELING GRATEFUL AND THANKFUL TO ALL MY TEACHERS WHO HELPED ME IN GETTING PLACED IN TCS THROUGH TCS NINJA QUALIFIER TEST.

FOR THIS I GAVE ALL THE BEST OF MINE AS IF I WOULD NEVER GET ANOTHER CHANCE.

FIRST WE WERE IN ORDER TO GIVE ONLINE APTITUDE PLUS TECHNICAL ONLINE TEST THROUGH TCS ION.

THERE WERE QUESTIONS MCQ QUESTIONS ON VERBAL ENGLISH, LOGICAL ABILITY, APTITUDE, TECHNICAL AND IN ADDITION TO THIS 1 CODING QUESTION WAS THERE. THERE WERE 2 TYPES OF QUESTIONS THAT WERE BASIC AND ADVANCED. TO ME ADVANCED QUESTIONS WERE MORE COMFORTABLE.

FOR THE WHOLE TEST, I PRACTICED APTITUDE QUESTIONS FROM PREPINSTA SITE AND FOR TECHNICAL QUESTIONS I GO FOR VARIOUS ONLINE QUIZZES AND GET TO LEARN MANY NEW BASIC THINGS OF PROGRAMMING LANGUAGES. AND THE DAY BEFORE EXAM, I SOLVED THE MOCK TEST PAPER PROVIDED BY THE TCS ITSELF AND REVISED ALL THE FORMULAE AND TRICKS.

AT THE END OF THE EXAM, I WAS HAVING A SATISFACTION OF GIVING BEST OF MINE.

NEXT CHALLENGE WAS THE INTERVIEW AND I MADE AN AIM TO CRACK IT. AND TO MAKE IT POSSIBLE I START WORKING ON IT. I GET TO REVISE ALL MY SUBJECTS DBMS, JAVA, C, DS ETC.

AT THE END THE WHOLE WORK DONE WAS AT ONE SIDE AND MY SUMMER TRAINING PROJECT WAS AT ANOTHER SIDE. 3 PEOPLE TOOK MY INTERVIEW; FIRST THEY ASKED ABOUT MY-SELF AND THEN THE ASKED ABOUT MY PROJECT I.E. WHAT MY PROJECT WAS AND WHAT WAS MY ROLE IN THAT AFTER THAT THEY ASKED MANY QUESTIONS RELATED TO DBMS AND JAVA. AFTER TECHNICAL ROUND THEY GAVE ME A SITUATION THAT YOUR PROJECT MANAGER IS MAKING BENEFITS FROM YOUR WORK HOW WOULD YOU SOLVE THIS SITUATION TO THIS I MADE A SIMPLE ANSWER THAT I WOULD TRY TO CONVINCE MY SENIOR NOT TO DO THIS. AT LAST THEY ASKED ME WHY I WANT TO JOIN THEIR COMPANY AND WHY THEY SHOULD HIRE ME. AND MANY OTHER QUESTIONS AND ANSWERED ALL THE QUESTIONS VERY CALMLY AND FURTHER THEY ASKED ME IF I WANT TO ASK ANYTHING FROM THEM. I SAID "THANK YOU" AND SMILED.

# HR QUESTIONS

#### **QUESTION 1:**

BASED ON WHAT YOU KNOW ABOUT US, WHAT COULD WE BE DOING MORE EFFI-CIENTLY?

SINCE YOU DON'T KNOW MUCH ABOUT THE COMPANY YOU SHOULD PLAY IT SAFE.

SUGGESTED ANSWER:

SINCE I ONLY KNOW ABOUT THE COMPANY FROM WHAT IS AVAILABLE ON THE INTERNET I WILL NOT BE IN A POSITION TO GIVE ANSWER TO YOUR QUESTION.

IF YOU ARE SMART AND HAVE GREAT IDEAS THEN TALK ABOUT NEW IDEAS THAT THE COMPANY COULD LOOK AT AND HOW YOU CAN HELP IMPLEMENT THEM.

#### **QUESTION 2:**

IF GOD WAS OUTSIDE THE INTERVIEW ROOM, WHAT ARE THE THREE WISHES YOU WOULD ASK FROM HIM?

COMPANIES WISH TO KNOW WHAT YOU PHILOSOPHY TOWARDS LIFE IS. BASED ON YOUR ANSWER THEY WILL JUDGE WHETHER YOU ARE SELFISH OR HAVE A BROADER OUTLOOK TOWARD SOCIETY. IF I'M ASKED THIS QUESTION I WILL ANSWER AS FOLLOWS:

#### SUGGESTED ANSWER:

I WILL ASK FOR HEATH SO I CAN WORK TO THE BEST OF MY ABILITIES, PASSION FOR EXCELLENCE AT WORK FROM ME OR THE TEAM AND EMPATHY FOR OVERALL GOOD OF THE SOCIETY.

#### **QUESTION 3:**

WE FOUND ANOTHER CANDIDATE EQUALLY ELIGIBLE FOR THIS JOB. TELL US
WHY WE SHOULD HIRE YOU OVER THE OTHER CANDIDATE? OR THEY CAN ASK "
WHY SHOULD WE HIRE YOU?"

THIS IS A QUESTION TO SEE IF YOU ARE SMART ENOUGH TO JUSTIFY WHY YOU ARE BETTER THAN THE OTHER CANDIDATE.

# SUGGESTED ANSWER:

I'M GRATEFUL FOR CONSIDERING ME ALONG WITH THE OTHER CANDIDATES. I'M SURE YOU ARE ABLE FIND QUALITIES IN THEM AND ME MATCHING THE JOB REQUIREMENT. IF I'M GIVEN A CHANCE I WILL JUSTIFY YOUR CHOICE OF MY SELECTION OVER THE OTHER CANDIDATE BY BECOMING A GOOD ASSET FOR THE COMPANY BY WORKING DILIGENTLY AND WITH DEDICATION.

#### **QUESTION 4:**

DO YOU HAVE ANY QUESTION FOR US / ME?

#### SUGGESTED ANSWER:

WILL YOU PLEASE SUGGEST WHAT SKILLS I SHOULD GET TRAINED BEFORE JOINING THE JOB?

WHAT IS THE CULTURE OF THE ORGANIZATION? IS IT FORMAL OR CASUAL?
WHAT EDUCATIONAL PROGRAMS ARE AVAILABLE FOR STAFF AND HOW THEY
ARE ADMINISTERED?

DO YOU HAVE ON THE JOB TRAINING OPPORTUNITIES?
WHAT ARE YOUR REVIEW PRACTICES? ARE THEY ANNUAL, SEMI-ANNUAL AND
WHAT ARE YOUR EVALUATION TECHNIQUES?

#### **QUESTION 5:**

WHAT ARE THE MOST IMPORTANT REWARDS YOU EXPECT TO GAIN FROM YOUR CAREER?

# SUGGESTED ANSWER:

SATISFACTION OF DOING THE JOB WELL, HAPPY CUSTOMERS THANKING ME FOR THE SERVICE I DO, HEALTHY OFFICE ENVIRONMENT, A GREAT TEAM AND STEADY PROGRESS IN CAREER ARE THE MOST IMPORTANT REWARDS I EXPECT.

# **QUESTION 6:**

GIVE ME AN EXAMPLE OF A TIME WHEN YOU WERE ABLE TO SUCCESSFULLY COMMUNICATE WITH ANOTHER PERSON EVEN WHEN THAT INDIVIDUAL MAY NOT HAVE PERSONALLY LINKED YOU (OR VICE VERSA).

THINK OF A SITUATION IN YOUR LIFE AND USE THE BELOW ANSWER AS JUST A GUIDELINE.

# SUGGESTED ANSWER:

SOME TIME FIRST IMPRESSIONS ARE NOT ALWAYS THE BEST IMPRESSION. ONE

OF MY CLASSMATES WAS NOT HAVING GOOD TERMS WITH THE REST OF THE CLASSMATES AND HE NEVER ATTEMPTED TO MAKE FRIENDSHIP WITH ANY ONE AND ALWAYS WAS IN BAD MOOD. WHENEVER I TRIED TO TALK TO HIM HE JUST USED TO YELL AT ME AND WALK AWAY FROM THAT PLACE. ONE DAY I DECIDED TO FIND OUT THE REASON FOR HIS BAD BEHAVIOR AND WENT TO HIS HOUSE. HE WAS TAKEN BACK WITH SURPRISE WHEN HE SAW ME AT THIS HOUSE BECAUSE WE ARE NOT GOOD FRIENDS. I SMILED AND SAID THAT I WISH TO MAKE FRIENDSHIP WITH HIM. HE SOMEHOW LISTENED TO ME AND SAID THAT HE WAS HAVING TROUBLE AT HOME ALWAYS AND THAT IS THE REASON FOR HIM HAVING BAD MOOD. HE FINALLY REALIZED THAT HIS CLASSMATES CARE FOR HIS FRIENDSHIP AND CAN MAKE HIS COLLEGE LIFE MEMORABLE. I SUCCEEDED IN BRINGING SMILE TO HIS FACE FINALLY AND GAINED A GOOD FRIEND IN RETURN.

#### **QUESTION 7:**

PLEASE LIST THREE AREAS YOU FEEL HAVE OPPORTUNITIES FOR IMPROVE-MENT?

# **SUGGESTED ANSWER:**

FIRST: UNDERSTANDING THE VALUE OF LISTENING. THE MORE WE LISTEN THE BETTER WE WOULD BE IN MAKING A LASTING IMPRESSION ON OTHERS. SECOND: MAKING SURE THAT MY WORK CARRIES HIGH QUALITY. THIRD: MAKE SURE TO WORK WITH DEDICATION AND FOCUS.

# QUESTION 8:

WHAT MAKES YOU THINK THAT YOU WILL SUCCEED IN THIS POSITION?
SUGGESTED ANSWER:

IF I TAKE UP ANY ASSIGNMENT DURING MY COLLEGE I MADE SURE TO FINISH THE WORK ON TIME WITH GOOD QUALITY OUTPUT. I USED TO WORK HARD TO MAKE SURE THAT I KEEP UP WITH THAT QUALITY. SO I THINK I WILL SUCCESSION THIS POSITION IF I WORK WITH SAME MINDSET, DEDICATION AND FOCUS.

# **QUESTION 9:**

HOW WOULD YOU TACKLE THE FIRST 90 DAYS AT THIS JOB?
SUGGESTED ANSWER:

FIRST I WILL TRY TO UNDERSTAND THE HR MANUALS OF DO'S AND DON'TS AT

WORK. I WILL INTRODUCE MYSELF TO THE TEAM. I WILL CHECK WITH MY MANAGER IF I HAVE TO ATTEND ANY ORIENTATION CLASSES AND IF YES THEN I WILL PROMPTLY ENROLL THERE. IF THERE ARE NO TRAININGS THEN I WILL ASK MY MANAGER TO ASSIGN ME WORK AND I WILL REQUEST SOME TIME WITH MY SENIORS AND FIND OUT THE BEST PRACTICES, TOOLS AND TECHNIQUES TO FINISH MY TASK. IF I HAVE DOUBTS I MAY GO BACK TO THE SENIOR OR MAY GET HELP FROM MY BOSS. IF ANYTHING ELSE IS GIVEN DURING THESE 90 DAYS I WILL WORK ON IT.

#### **QUESTION 10:**

WHAT TWO OR THREE THINGS ARE MOST IMPORTANT TO YOU IN YOUR JOB?
SUGGESTED ANSWER:

A CHALLENGING ASSIGNMENT WHICH FORCES ME TO DO MY BEST, A GREAT TEAM THAT INSPIRES ME TO DO WELL, A GREAT COMPANY THAT CREATES A CONDUCIVE WORK ENVIRONMENT AND OPPORTUNITIES FOR ITS EMPLOYS.

#### **QUESTION 11:**

WHAT DO YOU FEEL ABOUT DIVERSITY IN THE WORKPLACE? DO YOU THINK IT IS IMPORTANT?

# **SUGGESTED ANSWER:**

YES DIVERSITY BRINGS A DIFFERENT VIEW / PERSPECTIVE TO A CHALLENGING PROBLEM IN A PROJECT. IT IS VERY IMPORTANT TO HAVE, CULTURALLY DIFFERENT PEOPLE WITH VARIED EXPERIENCES, OPINIONS, PERSONALITIES TO MAKE A PROJECT SUCCEED AND KEEP CUSTOMERS HAPPY.

#### **QUESTION 12:**

TELL ME THE DIFFERENCE BETWEEN GOOD AND EXCEPTIONAL?
SUGGESTED ANSWER:

IF MY WORK MEETS THE STANDARDS OF WHAT CUSTOMER, MY BOSS AND THE TEAM WANTS THEN I CONSIDER THAT AS GOOD. IF I SURPRISE, EXCITE AND MAKE MY CUSTOMER TO COME BACK TO ME AND MY PROJECT TEAM AGAIN THEN I THINK IT TO BE EXCEPTIONAL.

# **QUESTION 13:**

# WOULD YOU CONSIDER YOURSELF AN ORGANIZED PERSON? SUGGESTED ANSWER:

YES TO A LARGE EXTENT BECAUSE I'M STILL A STUDENT AND ABLE TO UNDERSTAND THE VALUE OF EDUCATION, EMPLOYABLE SKILLS BUT BEING A STUDENT SOMETIMES I MISS MY PLANNED ACTIVITIES FOR A DAY OUT OF YOUTHFUL EXUBERANCE AND PEER PRESSURE FROM MY FRIENDS.

#### **QUESTION 14:**

# DO YOU CONSIDER YOURSELF OVERQUALIFIED FOR THIS POSITION? SUGGESTED ANSWER:

MY OPINION IS THAT WORKS IS COMPLEX AND ALWAYS PROVIDES OPPORTUNITY TO SOLVE CHALLENGES THAT WILL MAKE ME A BETTER PERSON, IMPROVE MY CONFIDENCE AND SKILLS. SO I DON'T THINK I'M OVERQUALIFIED FOR THIS POSITION.

#### **QUESTION 15:**

# DESCRIBE WHAT QUALITIES WOULD YOU LIKE TO SEE IN A SUPERVISOR? SUGGESTED ANSWER:

FOR A FRESHER LIKE ME I FEEL NERVOUS, LOST WHEN COMING TO WORK FIRST TIME. I LOOK FOR A GUIDE, HELPING HAND, A PERSON WHO UNDERSTANDS MY FEELING AND MAKES ME FEEL CONFIDENT AND COMFORTABLE WITH WORK UNTIL I'M ABLE TO START WORKING WITH CONFIDENCE.

#### **QUESTION 16:**

# WHAT IS MORE IMPORTANT TO YOU, THE MONEY OR THE WORK? SUGGESTED ANSWER:

I GIVE IMPORTANCE TO BOTH BUT IF I FOCUS ON WORK AND BECOME A VALUABLE ASSET TO COMPANY THEN MONEY WILL AUTOMATICALLY COME IN THE FORM OF COMPENSATIONS AND OTHER PERKS.

#### **QUESTION 17:**

IF YOU HAD ENOUGH MONEY TO RETIRE RIGHT NOW, WOULD YOU?
SUGGESTED ANSWER:

I'M STILL TOO YOUNG TO THINK OF RETIREMENT IN SPITE OF HAVING MONEY TO

RETIRE. MAY BE I WOULD HAVE GIVEN A CHANCE TO ANOTHER STUDENT TO COMPETE FOR THIS JOB AND USED THAT MONEY INSTEAD TO START A SMALL COMPANY AND WOULD HAVE THOUGHT OF GIVING EMPLOYMENT TO OTHERS. THAT I THINK IS THE RIGHT WAY OF USING THE MONEY AND KEEP MYSELF BUSY FOR A WORTHY CAUSE OF GENERATING WEALTH BY CREATING A COMPANY.

#### **QUESTION 18:**

WHAT CAN YOU CONTRIBUTE TO THIS COMPANY? EXPLAIN HOW YOU WOULD BE AN ASSET TO THIS COMPANY?

#### **SUGGESTED ANSWER:**

I HAVE THE STAMINA, HEALTH, INTEREST TO LEARN NEW SKILLS AND KNOWLEDGE GAINED THROUGH MY EDUCATION; TRAININGS ON TEAM SKILLS, COMMUNICATION SKILLS THAT CAN BE ASSETS FOR THE COMPANY.

#### QUESTION 19:

WHAT IS YOUR PHILOSOPHY TOWARDS WORK?

# SUGGESTED ANSWER:

WORK WITH DEDICATION TO PROVIDE HIGH QUALITY STANDARDS, BE A SHINING EXAMPLE FOR JUNIORS AND TO BE CONSIDERED AS AN ASSET FOR ANY PROJECT TEAM.

#### **QUESTION 20:**

IN WHAT KIND OF WORK ENVIRONMENT ARE YOU COMFORTABLE IN?
SUGGESTED ANSWER:

I FEEL COMFORTABLE IF MY WORK IS APPRECIATED, BE PART OF A PROJECT TEAM THAT WORKS ON COMPLEX PROBLEMS AND EVERY ONE OF THE TEAM MEMBERS WORKING TOWARDS A COMMON GOAL.

# **QUESTION 21:**

WHAT HAVE YOU DONE TO IMPROVE YOUR SKILLS / KNOWLEDGE FROM LAST YEAR?

# **SUGGESTED ANSWER:**

THIS YEAR I WAS FORTUNATE ENOUGH TO REALIZE THAT I NEED MANY SKILLS

OTHER THAN STUDIES. I REALIZED THIS WHILE ATTENDING GUEST LECTURES FROM CORPORATE PROFESSIONALS. SO I ATTENDED TRAININGS ON TEAM SKILLS, COMMUNICATION SKILLS, EMAIL ETIQUETTE, WORK ETHICS AND WILL-INGNESS TO GO EXTRA MILE TO ACHIEVE GOOD RESULTS ON A CHALLENGING ASSIGNMENTS.

#### **QUESTION 22:**

IF HIRED, HOW LONG DO YOU EXPECT TO WORK FOR US?
SUGGESTED ANSWER:

I APPLIED TO THIS JOB WITH AN INTENTION OF HAVING A LONG TERM RELATION-SHIP WITH THE COMPANY AND NEVER IMAGINED OR THOUGHT THAT THIS QUES-TION WILL BE ASKED. I STRONGLY FEEL THAT THE COMPANY IS GOOD ENOUGH TO TAKE CARE OF EMPLOYEE'S BENEFITS AND CAREER PROGRESSION SO I'M NOT HAVING ANY PLANS OF MOVING OUT ANYTIME SOON.

#### **QUESTION 23:**

BEFORE YOU CAN MAKE A PRODUCTIVE CONTRIBUTION TO THE COMPANY, WITH DEGREE OF TRAINING DO YOU FEEL YOU WILL REQUIRE?
SUGGESTED ANSWER:

I FEEL I SHOULD GET THE COMPANY'S CORE PRINCIPALS, CULTURE AND BEST PRACTICES TRAININGS AND MAY NEED TRAINING ON USE OF TOOLS, DELIVERY METHODS, CODING STANDARDS OF THE PROJECTS.

#### **QUESTION 24:**

WHAT CHALLENGES ARE YOU LOOKING FOR IN A POSITION? SUGGESTED ANSWER:

THE FIRST CHALLENGE I FEEL IS HOW FAST I COULD GET COMFORTABLE WITH COMPANY'S WORK CULTURE AND BECOME PRODUCTIVE. THEN I HAVE TO MAKE SURE THAT I CONTRIBUTE WELL TO THE PROJECT AND LOOKING FORWARD TO LEARN THE REQUIRED SKILLS AS FAST AS I COULD

#### **QUESTION 25:**

WHAT WERE YOUR REASONS FOR SELECTING YOUR COLLEGE OR UNIVERSITY?
YOU KNOW MUCH BETTER ABOUT YOUR COLLEGE AND UNIVERSITY MORE THAN

ME. I JUST GAVE A GENERAL ANSWER TO GUIDE YOU.

# SUGGESTED ANSWER:

MY COLLEGE HAS ALWAYS HAD A REPUTATION AS HAVING AN EXCELLENT FACULTY, SO I KNEW THAT IF I ENROLLED THERE, I WOULD ACHIEVE FIRST - CLASS PREPARATION FOR MY CHOSEN CAREER FIELD. I CHECKED WITH MY SENIORS AND FOUND THAT THE COLLEGE ATTRACTS TOP COMPANIES FOR CAMPUS RECRUITMENT. HAVING VISITED THE CAMPUS BEFORE ENROLLING, I CHECKED THE FACILITIES AND FOUND OUT THAT THEY HAVE EXCELLENT SPORT FIELDS, ENCOURAGE STUDENTS TO COMPETE IN SEVERAL LOCAL AND NATIONAL LEVEL COMPETITIONS. THAT CONVINCED ME TO JOIN THE COLLEGE.

#### **QUESTION 26:**

HOW WILL THE ACADEMIC PROGRAM AND COURSE WORK YOU'VE TAKEN BENE-FIT YOUR CAREER?

# **SUGGESTED ANSWER:**

ACADEMIC PROGRAM GAVE ME THE FOUNDATION OF THE SUBJECTS AND SOME LEVEL OF ADVANCED KNOWLEDGE. WE HAD SEVERAL SEMINARS, DEBATES AND COMPETITIONS DURING THE COLLEGE DAYS THAT EXPOSED ME TO ADVANCED KNOWLEDGE IN MY AREA OF STUDIES. WE HAD PRACTICALS AND A LIVE PROJECT EXPERIENCE THAT GAVE ME THE CHALLENGES AND HURDLES WE COULD FACE IN COMPLETING A TASK. ALL THESE EXPERIENCES I FEEL ARE VERY BENEFICIAL FOR MY CAREER.

#### **QUESTION 27:**

WHICH COLLEGE CLASSES OR SUBJECTS DID YOU LIKE BEST? WHY?
THIS IS AGAIN DEPENDS ON WHAT YOU LIKED THE MOST. THE ANSWER IS JUST A GUIDANCE.

# SUGGESTED ANSWER:

I LIKE THE CLASS OF C LANGUAGE THE MOST. FROM THE EARLY DAYS OF SCHOOL I GOT FASCINATED WITH SOFTWARE GAMES AND WANT TO DEVELOP SOME COOL GAMES. I REALIZED I HAVE TO LEARN SOFTWARE FOR THAT AND THAT IS THE REASON I CHOSE COMPUTER SCIENCE ENGINEERING AT COLLEGE AND LOVE WORKING ON SOFTWARE CODE SO ONE DAY I WOULD BE ABLE TO USE MY KNOWLEDGE TO DEVELOP SOME COOL GAMES.

# **QUESTION 28:**

DESCRIBE THE TYPE OF PROFESSOR THAT HAS CREATED THE MOST BENEFICIAL LEARNING EXPERIENCE FOR YOU?

AGAIN THINK OF A PERSON WHO YOU LIKE THE MOST AND WHO MOTIVATES YOU THE MOST AND DESCRIBE THE BENEFITS YOU GOT LISTENING TO HIM / HER. THE BELOW ANSWER IS JUST A GUIDE FOR YOU TO USE.

NOTE: THE BELOW ANSWER IS GIVEN ABOUT ME BY SEVERAL STUDENTS, SO I'M USING THE SAME ANSWER HERE. USE SOMEONE'S NAME INSTEAD OF MY NAME IN CASE YOU HAVE SOMEONE ELSE IN YOUR MIND.

#### SUGGESTED ANSWER:

I LOVED ATTENDING THE CLASSES OF VISITING GUEST LECTURER ABC" BECAUSE HE WITH HIS GLOBAL EXPERIENCE ALWAYS EXPLAINED THE VALUE OF HIGH QUALITY WORK, FINISHING WORK ON TIME, LOOKING FORWARD TO CONSTANTLY UPGRADING NEW SKILLS TO TAKE ON CHALLENGING ASSIGNMENTS, IMPORTANCE OF KEEPING UP TO DATE IN OUR AREA OF STUDIES USING MODERN TOOLS AND SOFTWARE. HIS PRESENTATION SKILLS, LANGUAGE USE AND PASSION HAVE HELPED ME TO TRANSFORM FROM A NOVICE TO A KNOWLEDGEABLE PERSON TODAY.

# **QUESTION 29:**

DO YOU THINK THAT YOUR GRADES ARE AN INDICATION OF YOUR ACADEMIC ACHIEVEMENT?

FOR THIS QUESTION THINK OF WHAT ELSE YOU DID OTHER THAN STUDIES.

SUGGESTED ANSWER:

I THINK IT IS MORE THAN GRADES. IN ADDITION TO STUDIES, I PARTICIPATED IN SPORTS AND EXTRACURRICULAR ACTIVITIES IN SCHOOL AND COLLEGE. THESE ACTIVITIES TAUGHT ME LEADERSHIP, COMMUNICATION, AND TEAM WORK SKILLS. ATTENDING SEMINARS, GUEST LECTURES AND OTHER COMPETITIONS, ENABLED ME TO KNOW DIFFERENT CULTURES, PRACTICES, PRESENTATION SKILLS, ISSUES AND OTHER VALUABLE EXPERIENCES THAT I COULD USE IN MY CAREER AS NEEDED.

#### **QUESTION 30:**

WHAT PLANS DO YOU HAVE FOR CONTINUED STUDY? AN ADVANCED DEGREE?

TRICKY QUESTION BECAUSE YOU ARE PLANNING TO JOIN THE COMPANY SO YOU

CANNOT SAY YOU WILL CONTINUE ON ADVANCED DEGREE.

#### **SUGGESTED ANSWER:**

I REALIZED THAT THERE IS NO END FOR LEARNING. SO I FEEL CONTINUING EDUCATION CAN INCLUDE ON THE JOB TRAINING, COURSES SPONSORED BY THE EMPLOYER, AND COURSES TAKEN IN NEW TECHNOLOGIES AS THEY EMERGE. I PLAN TO PURSUE EDUCATION WITH COMPANY'S PERMISSION SO THAT I CAN ENHANCE / COMPLEMENT MY SKILLS AT WORK.

#### QUESTION 31:

HOW DO YOU THINK YOU WILL COMPENSATE FOR YOUR LACK OF EXPERIENCE?

IF YOU ARE STILL A STUDENT AND THERE IS TIME BEFORE INTERVIEW I SUGGEST

YOU TO GET TRAINED AT SOME PROMINENT CORPORATE SKILLS TRAINING INSTITUTE TO ANSWER SUCH QUESTIONS.

# SUGGESTED ANSWER:

FORTUNATELY I REALIZED THE VALUE OF TEAM WORK, TIME, WORK ETHICS, COMMUNICATION SKILLS AND OTHER OFFICE MANNERS WHILE STILL STUDYING AND GOT TRAINED AT A PROFESSIONALLY RUN INSTITUTE TO ENABLE ME TO BECOME QUICKLY PRODUCTIVE WHEN I ENTER JOB. I'M ALSO REGULARLY UPDATING MY KNOWLEDGE ABOUT HOW PROJECTS AT THE COMPANIES ARE RUN. THIS INFORMATION, THE TRAINING AND THE COMPANY'S ORIENTATION CLASSES SHOULD SUFFICIENTLY COVER MY LACK OF EXPERIENCE.

HOW YOUR COLLEGE LIFE HELPED YOU TO BE EMPLOYABLE?

WHY SHOULD I HIRE YOU?

HOW DO YOU DEAL CONFLICTS? OR THINK OF A SITUATION WHERE YOU HANDLED A CONFLICT SUCCESSFULLY?

TELL ME ABOUT SOMETHING YOU DID-OR FAILED TO DO-THAT YOU NOW FEEL A LITTLE ASHAMED OF.

WHY DID YOU APPLY FOR THIS JOB?

IF YOU WON \$10 MILLION OR 10 CRORE, WOULD YOU STILL WORK?

WHAT IS YOUR MOST EMBARRASSING MOMENT? HOW DID YOU DEAL WITH IT?

TELL ME ABOUT A SITUATION WHEN YOUR WORK WAS CRITICIZED?

HOW DO YOU DEFINE SUCCESS?

DO YOU PREFER TO WORK INDEPENDENTLY OR ON & TEAM?

PROJECT "PREDICTION AND ANALYSIS OF AIR POLLUTION LEVEL US-ING MACHINE LEARNING" SHORT LISTED FOR FUNDING UNDER CST UP ENGINEERING STUDENTS' PROJECT GRANT SCHEME 2018-19

# **ABSTRACT:**

The proposed study focuses on prediction of air pollution level of a speregion (delhi/ncr). In air pollution prediction, model accuracific cy, efficiency and adaptability are key considerations. The air pollution system predicts pollution level of upcoming days and weeks by using Machine learning algorithm. Air pollution data varied based on season, pollution source and weather conditions. Therefore the factors that affect the concentration of the pollution are need to be considered i.e., meteorological and historical information. The meteorological factors that are considered are: Average Temperature, Pressure, Max wind speed, Visibility, Wind speed and wind direction. The study will also focus on understanding the primary causes for the high concentration of various air constituents at different places so as to proa meaningful solution. pose

**MENTOR:** Ms. Sapna Yadav

# TEAM MEMBERS:

Harshit saran, IV Year CSE

Maghvendra singh, IV Year CSE

Manvir singh, IV Year CSE

Raja, IV Year CSE



#### MR. MANISH SINGH



MY NAME IS MANISH SINGH

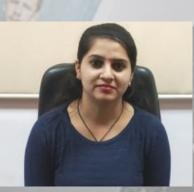
I AM PASS OUT FROM IMS OF BATCH 2002 TO 2006. ITS BEEN A LONG JOURNEY WHEN I BE GETTING INTO COLLEGE. I STILL REMEMBER MY FIRST DAY AND COMPLETING THOSE FROM YEARS DOWN THE LINE HAD BEAUTIFUL MEMORIES WHICH ARE STEALING IN MY MIND. THOSE CANTEENS, PLAY AREA, FRIEND CIRCLE, BUNKING THE CLASS AND EVERYTHING. IMS HAS GIVEN LOT OF POSITIVE

THINGS WHICH ARE STILL IN MY MIND AND MEMORY. I AM CURRENTLY WORKING IN ESL TECHNOLOGIES AND BY THE HELP OF MR. ATUL, I AM SHARING MY EXPERIENCE WITH THE CURRENT BATCH OF IMS EC.

IT'S BEEN A PLEASURE OUT HERE FOR ME TO PRESENT MYSELF IN FRONT OF THE CURRENT STUDENTS OF IMS.

I WOULD APPRECIATE THE FACULTY MEMBERS AND THE JUNIORS OF IMS EC, AND IN FUTURE ALSO IF THEY HAVE ANY CONCERN QUESTIONS RELATED TO THIS. I AM MOST WELCOME TO JOIN SUCH ALUMNI MEET.

### MS. SHIVANI SHARMA



MY NAME IS SHIVANI SHARMA OF 2012-2016 BATCH PASS OUT. I HAVE BEEN PLACED IN TCS IN 2015 AND I CURRENTLY HAVING WORKING EXPERIENCE OF 2.5 YEARS AS A SYSTEM ENGINEER. FOR ALL THE STUDENTS MY MESSAGE AND EXPERIENCE TO YOU IS VERY NICE. BEING INITIALLY LEARNING PROGRAMMER IN TCS AND WORKING DEVELOPER IN JAVA. EACH AND EVERY AS-

PECT OF ALL YEAR IN COLLEGE IS VERY IMPORTANT TO YOU ALL. SO, YOU CAN FOCUS ON EACH AND EVERY FIELD AND CHOOSE WHAT YOU WANT TO DO IN YOUR LIFE. AND CHOOSE ONE AIM AND DECISION THAT YOU WOULD LIKE TO ACHIEVE IN YOUR CAREER AND HARD WORK IS THE MAIN SUCCESS. AND BACKBONE OF THE COLLEGE IS TEACHERS AND THE KNOWLEDGE AND INFORMATION THEY ARE SHARING WITH YOU ALL. SO KINDLY ACHIEVE THAT ALL INFORMATION BY YOUR COLLEGE TEACHERS AND SUPPORT THEM.

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## **CURRENT AFFAIRS**



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Google provides unprecedented access to information with over 100 billion searches a month. 25 countries have blocked at least one of its services including Maps, News and even the search function. www.psiphon.ca



#### 1. LOK SABHA PASSES TRIPLE TALAQ BILL 2018

THE LOK SABHA ON DECEMBER 27, 2018 PASSED THE MUSLIM WOMEN (PROTECTION OF RIGHTS ON MARRIAGE) BILL, 2018, ALSO KNOWN AS, TRIPLE TALAQ BILL.

THE BILL MAKES INSTANT TRIPLE TALAQ VOID AND ILLEGAL. IT SEEKS TO MAKE THE PRACTICE OF INSTANT TRIPLE TALAQ A PUNISHABLE OFFENCE WITH IMPRISONMENT OF UP TO THREE YEARS. THE BILL WAS INTRODUCED IN LOK SABHA BY THE MINISTER OF LAW AND JUSTICE, RAVI SHANKAR PRASAD ON DECEMBER 17, 2018.

### 2. CABINET APPROVES AMENDMENT IN POSCO ACT, 2012 TO PROTECT CHIL-DREN FROM SEXUAL ABUSE

THE UNION CABINET CHAIRED BY PRIME MINISTER NARENDRA MODI ON DECEMBER 28, 2018 APPROVED THE PROPOSAL FOR AMENDMENT IN THE PROTECTION OF CHILDREN FROM SEXUAL OFFENCES (POCSO) ACT, 2012 TO MAKE PUNISHMENT MORE STRINGENT FOR COMMITTING SEXUAL CRIMES AGAINST CHILDREN.

#### 3. PM MODI INAUGURATES BOGIBEEL BRIDGE IN ASSAM

PRIME MINISTER NARENDRA MODI ON DECEMBER 25, 2018 INAUGURATED INDIA'S LONGEST RAIL-ROAD BRIDGE 'BOGIBEEL BRIDGE' OVER THE BRAHMAPUTRA RIVER IN ASSAM TO BOOST DEFENSE ALONG THE BORDER WITH CHINA. THE BRIDGE WAS INAUGURATED ON THE BIRTH ANNIVERSARY OF FORMER PM ATAL BIHARI VAJPAYEE, UNDER WHOSE GOVERNMENT THE WORK FOR THE BRIDGE BEGAN IN 2002.

## 4. PM MODI RELEASES COMMEMORATIVE COIN ON PAIKA REBELLION; INAUGURATES IIT BHUBANESWAR CAMPUS

PRIME MINISTER NARENDRA MODI ON DECEMBER 24, 2018 RELEASED THE COMMEMORATIVE COIN AND POSTAGE STAMP IN MEMORY OF PAIKA REBELLION DURING HIS VISIT TO BHUBANESWAR TO COMMEMORATE PAIKA REBELLION.

ON THE SAME OCCASION, THE PRIME MINISTER DEDICATED THE IIT BHUBANES-WAR CAMPUS TO THE NATION. IIT BHUBANESWAR WILL SPUR THE INDUSTRIAL

DEVELOPMENT OF ODISHA, AND WORK TOWARDS TECHNOLOGY TO IMPROVE THE LIVES OF THE PEOPLE. IT WOULD HELP GENERATE EMPLOYMENT FOR THE YOUTH OF ODISHA.

## 5. GOOD GOVERNANCE DAY 2018: NATION REMEMBERS FORMER PM ATAL BI-HARI VAJPAYEE; 'SADAIV ATAL' SAMADHI DEDICATED TO NATION

INDIA OBSERVED THE GOOD GOVERNANCE DAY ON DECEMBER 25, 2018 TO MARK THE BIRTH ANNIVERSARY OF FORMER PRIME MINISTER ATAL BIHARI VAJPAYEE WHO PASSED AWAY ON AUGUST 16, 2018 AT THE AGE OF 93.

#### 6. NITI AAYOG RELEASES 'STRATEGY FOR NEW INDIA @75'

THE NITI AAYOG ON DECEMBER 19, 2018 RELEASED 'STRATEGY FOR NEW INDIA @75', ITS COMPREHENSIVE NATIONAL STRATEGY FOR NEW INDIA WHICH DEFINES CLEAR OBJECTIVES FOR 2022-23. THE STRATEGY WAS RELEASED BY THE UNION FINANCE MINISTER ARUN JAITLEY. IT IS A DETAILED ACCOUNT ACROSS 41 CRUCIAL AREAS THAT RECOGNISES THE PROGRESS ALREADY MADE, IDENTIFIES BINDING CONSTRAINTS, AND SUGGESTS THE WAY FORWARD FOR ACHIEVING THE OBJECTIVES.

# 7. FIFTH BI-MONTHLY MONETARY POLICY STATEMENT 2018-19: RBI KEEPS POLICY RATES UNCHANGED

THE RESERVE BANK OF INDIA (RBI) ON OCTOBER 5, 2018 RELEASED ITS FIFTH BI-MONTHLY MONETARY POLICY STATEMENT 2018-19. AFTER ASSESSING THE CURRENT AND EVOLVING MACROECONOMIC SITUATION IN THE ECONOMY, THE SIX MEMBERS MONETARY POLICY COMMITTEE (MPC) DECIDED TO KEEP THE POLICY REPORATE UNDER THE LIQUIDITY ADJUSTMENT FACILITY (LAF) UNCHANGED AT 6.5 PERCENT.

### 8. TRAIN 18: INDIA'S FIRST LOCOMOTIVE-LESS TRAIN CROSSES 180 KMPH MARK DURING TRIALS

INDIA'S FIRST LOCOMOTIVE-LESS TRAIN 'TRAIN 18' ON DECEMBER 2, 2018 CROSSED THE 180 KMPH SPEED LIMIT DURING A TEST RUN IN THE KOTA-SAWAI MADHOPUR SECTION. THE MAJOR TRIALS ARE NOW OVER WITH JUST SOME MORE REMAINING. ONCE TRAIN 18 BECOMES OPERATIONAL, IT WILL COM-

MENCE ITS COMMERCIAL RUN FROM JANUARY 2019.

## 9. SC BARS MEDIA, POLICE FROM REVEALING IDENTITIES OF VICTIMS OF RAPE, SEXUAL ASSAULT

THE SUPREME COURT ON DECEMBER 11, 2018 DIRECTED THE PRINT AND ELECTRONIC MEDIA NOT TO REVEAL THE IDENTITY OF VICTIMS OF RAPE AND SEXUAL ASSAULT EVEN IN A REMOTE MANNER. THE SC BENCH COMPRISING JUSTICES MADAN B LOKUR AND DEEPAK GUPTA STATED THAT IT WAS NOT NECESSARY TO DISCLOSE THE IDENTITY OF VICTIMS OF RAPE AND SEXUAL ASSAULT TO "AROUSE PUBLIC OPINION AND SENTIMENT" AS THESE ISSUES NEED TO BE DEALT WITH SENSITIVELY. IN ITS JUDGEMENT, THE SC BENCH SAID THAT THE NAME AND IDENTITY OF VICTIMS OF RAPE AND SEXUAL ASSAULT, INCLUDING THOSE WHO HAD DIED, CANNOT BE DISCLOSED "EVEN IN A REMOTE MANNER".

#### 11. LOK SABHA PASSES BILL PROHIBITING COMMERCIAL SURROGACY

THE LOK SABHA ON DECEMBER 19, 2018 PASSED THE SURROGACY (REGULATION) BILL, 2016 WHICH IS AIMED AT PROHIBITING COMMERCIAL SURROGACY AND UNETHICAL PRACTICES RELATING TO IT.

AS PER THE BILL, SURROGACY IS DEFINED AS "A PRACTICE WHEREBY ONE WOMAN CARRIES THE CHILD FOR ANOTHER WITH THE INTENTION THAT THE CHILD SHOULD BE HANDED OVER AFTER BIRTH". UNDER ITS PROVISIONS, THE INTENDING COUPLE MUST BE INDIAN CITIZENS AND MARRIED FOR AT LEAST FIVE YEARS WITH AT LEAST ONE OF THEM BEING INFERTILE.

THE BILL PERMITS SURROGACY ONLY FOR COUPLES WHO CANNOT CONCEIVE A CHILD. ALSO, THE SURROGATE MOTHER HAS TO BE A 'CLOSE RELATIVE' OF THE INTENDING COUPLE.

#### 12. KAMAL NATH TAKES OATH AS CHIEF MINISTER OF MADHYA PRADESH

SENIOR CONGRESS LEADER KAMAL NATH WAS SWORN IN AS THE 18TH CHIEF MINISTER OF MADHYA PRADESH ON DECEMBER 17, 2018. THE SWEARING-IN CEREMONY TOOK PLACE AT THE LAL PARADE GROUND IN BHOPAL, THE CAPITAL CITY OF MADHYA PRADESH.

THE CONGRESS NAMED VETERAN LEADER KAMAL NATH AS MADHYA PRA-

DESH'S NEXT CHIEF MINISTER AFTER HOURS OF HECTIC DISCUSSIONS HELD BY PARTY CHIEF RAHUL GANDHI WITH OTHER SENIOR LEADERS AMID A DEBATE ON THE OLD VERSUS THE NEW GUARD. THE OTHER POTENTIAL CHIEF MINISTERIAL CANDIDATE WAS FROM THE YOUNGER LOT, JYOTIRADITYA SCINDIA.

### 13. GAUTAM GAMBHIR ANNOUNCES RETIREMENT FROM ALL FORMS OF CRICK-ET: A GLANCE AT HIS CRICKET CAREER

AFTER OVER 15 YEARS OF SUCCESSFUL CAREER IN INDIAN CRICKET, INDIAN OPENER GAUTAM GAMBHIR ON DECEMBER 4, 2018 ANNOUNCED HIS RETIREMENT FROM ALL FORMS OF CRICKET.

GAUTAM GAMBHIR WAS ONE OF THE MOST COMPLETE BATSMEN WHO OPENED WELL IN ALL THREE FORMS OF THE GAME – TEST MATCHES, ODIS AND T2OS. HE EXHIBITED BEST IN HIS INNINGS BETWEEN 2008 AND THE 2011 WORLD CUP. HE PLAYED AN INSTRUMENTAL ROLE IN INDIA'S SUCCESSFUL CAMPAIGNS IN THE 2011 WORLD CUP AND THE INAUGURAL WORLD TWENTY20 IN 2007.

#### 14. MISS PHILIPPINES CATRIONA GRAY CROWNED MISS UNIVERSE 2018

MISS PHILIPPINES CATRIONA GRAY WAS CROWNED MISS UNIVERSE AFTER SHE WON THE FINAL ROUND OF THE MISS UNIVERSE 2018 PAGEANT, HELD IN BANGKOK, THAILAND ON DECEMBER 17, 2018. OUTGOING MISS UNIVERSE DEMI LEIGH NEL PETERS FROM SOUTH AFRICA CROWNED HER SUCCESSOR.

## 15. ASMA JAHANGIR POSTHUMOUSLY AWARDED WITH 2018 UN HUMAN RIGHTS PRIZE

ASMA JAHANGIR PASSED AWAY ON FEBRUARY 11, 2018 DUE TO CARDIAC ARREST. SHE WAS KNOWN FOR HER OUTSPOKEN NATURE AND UNRELENTING PURSUIT FOR HUMAN RIGHTS. THIS YEAR, THE AWARD COINCIDED WITH THE 70TH ANNIVERSARY OF THE UNIVERSAL DECLARATION OF HUMAN RIGHTS.

WITH THIS WIN, ASMA JAHANGIR BECAME THE FOURTH PAKISTANI WOMAN TO BE AWARDED WITH THE UN HUMAN RIGHTS PRIZE. EARLIER WINNERS WERE BEGUM RA'ANA LIAQUAT ALI KHAN (1978), BENAZIR BHUTTO (2008) AND MALALA YOUSUFZAI (2013).

#### 16. GSAT-11: INDIA'S HEAVIEST COMMUNICATION SATELLITE LAUNCHED SUC-

#### CESSFULLY FROM FRENCH GULANA

INDIA'S HEAVIEST AND MOST-ADVANCED COMMUNICATION SATELLITE GSAT-11, ALSO CALLED THE "BIG BIRD", WAS SUCCESSFULLY LAUNCHED INTO SPACE ON DECEMBER 5, 2018 FROM THE SPACEPORT IN FRENCH GUIANA, SOUTH AMERICA.

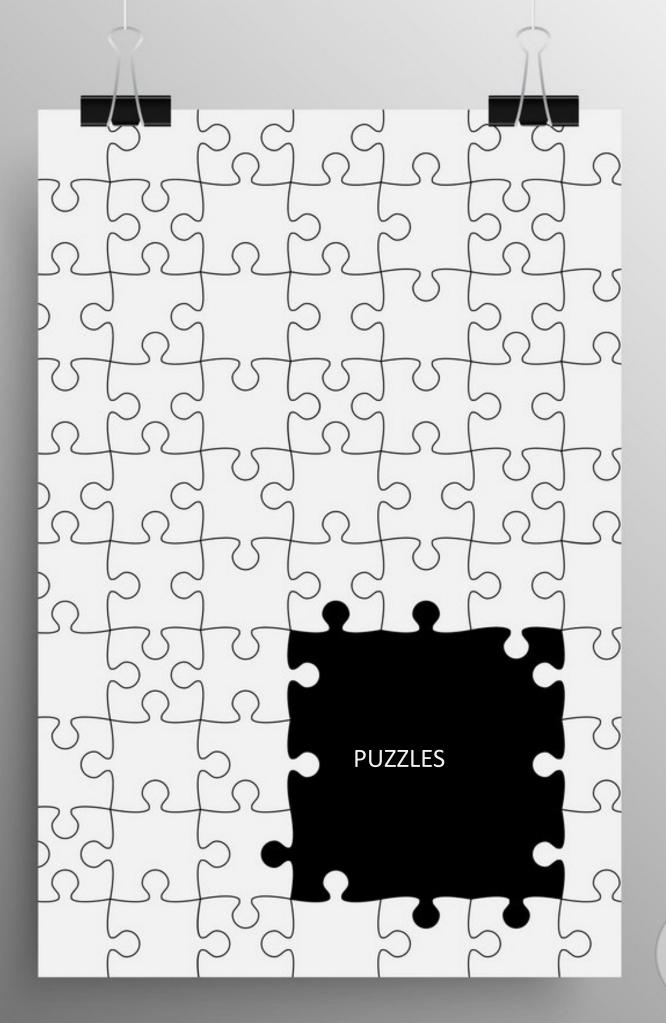
THE SATELLITE WILL HELP PROVIDE SATELLITE-BASED INTERNET TO REMOTE PLACES WHERE CABLE-BASED INTERNET CANNOT REACH. THE SATELLITE, WEIGHING 5854 KG, IS THE HEAVIEST INDIAN-MADE EQUIPMENT THAT HAS BEEN PUT INTO THE ORBIT.

DEVELOPED BY THE INDIAN SPACE RESEARCH ORGANISATION (ISRO), THE GSAT-11 WAS LAUNCHED ON THE ARIANE 5 VA-246 ROCKET FROM KOUROU LAUNCH BASE, FRENCH GUIANA.

#### 17. INDIA SUCCESSFULLY TEST-FIRES NUCLEAR-CAPABLE AGNI-IV MISSILE

INDIA ON DECEMBER 23, 2018 SUCCESSFULLY TEST FIRED NUCLEAR-CAPABLE LONG-RANGE INTER CONTINENTAL BALLISTIC MISSILE AGNI-IV. THE STRATEGIC SURFACE-TO-SURFACE MISSILE WAS FLIGHT TESTED FROM THE INTEGRATED TEST RANGE (ITR) AT DR ABDUL KALAM ISLAND OFF ODISHA COAST.THIS WAS THE 7TH TRIAL OF AGNI-IV MISSILE. THE TEST WAS PART OF A USER TRIAL BY THE INDIAN ARMY.

THE AGNI-IV MISSILE WAS DESIGNED AND DEVELOPED BY DEFENCE RESEARCH AND DEVELOPMENT ORGANISATION (DRDO). IT HAS A STRIKE RANGE OF 4,000 KM. IT IS 20 METRES LONG AND WEIGHS 17 TONNES AND HAS MANY CUTTING-EDGE TECHNOLOGIES WHICH CAN MEET GLOBAL STANDARDS INCLUDING PERSHING MISSILE OF US.



#### 1)AN EARLY BURIAL

JOHM BROWN DIED ON THURSDAY, DECEMBER 6, AND WAS BURIED THE SAME WEEK-ON WEDNESDAY, DECEMBER 5, TO BE PRECISE. HOW DID THAT HAPPEN?

#### 2)THE LAST MESSAGE

A MAN WAS FOUND SHOT DEAD IN HIS STUDY.HE WAS SLUMPED OVER HIS DESK AND A GUN WAS IN HIS HAND. THERE WAS A CASSETTE RECORDER ON HIS DESK. WHEN THE POLICE ENTERED THE ROOM AND PRESSED THE PLAY BUTTON ON THE TAPE RECORDER THEY HEARD, "I CAN'T GO ON.I HAVE NOTHING TO LIVE FOR. "THEN THERE WAS THE SOUND OF A GUNSHOT. HOW DID THE DETECTIVE IMMEDIATELY KNOW THAT THE MAN HAS BEEN MURDERED?

#### 3)THE JAPANESE SPEAKER

A LOS ANGELES BUSINESSMAN TOOK GREAT PAINS TO LEARN JAPANESE FROM A NATIVE SPEAKER OF THE LANGUAGE.HE BECAME FLUENT, HIS VOCABULARY AND GRAMMER WERE EXCELLENT AND HIS ACCENT WAS GOOD.WHEN HE LATER WENT TO JAPAN AND STARTED SPEAKING JAPANESE WITH A GROUP OF BUSINESSMEN THERE, THEY COULD HARDLY CONTAIN THEIR SURPRISE AND AMUSEMENT AT THE WAY HE SPOKE.WHY?

#### 4)FLAT OUT

A DRIVER WHOSE CAR HAD NO BRAKES WAS APPROACHING A LEVEL CROSSING AT 60 MILES PER HOUR WHILE A TRAIN WAS APPROACHING THE SAME CROSSING ALSO AT 60 MILES PER HOUR. THE CROSSING WAS UNMANNED AND HAD NO BARRIERS. THE TRAIN WAS 100 YARDS LONG AND IT WAS 50 YARDS FROM THE CROSSING. THE CAR WAS 100

YARDS FROM THE CROSSING .NEITHER TRAIN NOR CAR STOPPED OR CHANGED DIRECTION OR SPEED.THE DRIVER DID NOT GET OUT OF HIS CAR.HOW DID HE SURVIVE THE CROSSING?

#### 5) AN ODD STORY

THREE MEN WENT INTO A CAFE AND EACH HAD A SINGLE CUP OF COFFEE.EACH PUT AN ODD NUMBER OF LUMPS OF SUGAR INTO HIS CUP OF COFFEE.IN TOTAL THEY PUT 12 LUMPS OF SUGAR IN THEIR CUPS.HOW MANY LUMPS DID EACH CONSUME?

#### 6)THE DEADLY PARTY

A MAN WENT TO PARTY AND DRANK SOME OF THE PUNCH.HE THEN
LEFT EARLY.EVERYONE ELSE AT THE PARTY WHO DRANK THE
PUNCH SUBSEQUENTLY DIED OF POISONING.WHY DID THE MAN DID NOT
DIE?

#### 7) THE FALLEN SIGN

A MAN WAS WALKING IN COUNTRY UNFAMILIAR TO HIM.HE CAME TO A CROSSROADS WHERE HE FOUND THAT THE SIGNPOST SHOWING THE DIRECTIONS OF THE ROADS HAD FALLEN OVER.HOW DID HE FIND OUT WHICH WAY TO GO?



## UPCOMING CONFERENCES & WORKSHOPS

- 1) 1st International Conference on Machine Learning, Image Processing, Network Security and Data Sciences 3 4 March, 2019 | NIT Kurukshetra, INDIA (MIND-2019)
- 2) Codathon 2019, MANIT Bhopal, Coding Contest, Bhopal, Madhya Pradesh, 15-22nd January 2019.

Codathon is an Inter-NIT coding contest, the first of its kind and the brainchild of ISTE Students' Chapter MANIT. Codathon kickstarts ISTE SC MANIT's Annual Students' Conclave 'Chimer WEBSITE LINK: http://istemanit.in/codathon/

3) IEEE Makers Gonna Make 2019, VIT University Chennai Campus, Makeathon, Chennai, Tamil Nadu, 18-19th January 2019

WEBSITE LINK :- http://chennai.vit.ac.in/files/ieee/index.html

4) KSHITIJ 2019, IIT Kharagpur, Techno Management Fest, KHARAGPUR, West Bengal, 18-20th January 2019 Event Name KSHITIJ 2019

Category Techno Management Fest Organiser IIT Kharagpur Location KHARAGPUR, West Bengal Event Dates 18-20th January 2019

5) Digital Image Processing using MATLAB workshop (18<sup>th</sup> Feb-22<sup>nd</sup> Feb, 2019) Venue: Indian Institute of Technology Roorkee

Last Date for Registration: February 08<sup>th</sup>, 2019



Dear Readers,

Editorial Board welcomes articles for the next issue of "THE BYTE", January 2019.

Please send your articles @ below email ids:

- sapyadav08@gmail.com
- engineer, anurag@gmail.com
- juhi020890@gmail.com





