



BEACON

The weekly newsletter of Sandbox Technologies



Advanced Technologies : Helping Hand during Pandemic

Science and technology with advancements in data science, artificial intelligence and machine learning are contributing at the time of pandemic. With the growing crisis, companies and researchers over the world are looking and searching for ways to address the challenges of virus, by developing a cure for this disease.

We provide a window of thoughts on review of the technology advances used to decrease and smother the substantial impact of the outburst. Artificial Intelligence helped relying on facial recognition cameras to track infected patients along with their travel history. Robots were being used too in the initial phase to promote social distancing and contactless delivery of food and medicines. Drones are used to disinfect public places, to patrol and broadcast audio messages to public requesting and encouraging them to stay at home. As testing kits ran out, Science researchers and international doctors developed software and have been focusing on detecting infectious patients through medical image processing i.e. X-rays, CT-scan. Software is AI-based database of X-ray scans and deep neural networks which is trained to distinguish between patients with pneumonia, tuberculosis and Covid-19. "E-commerce emerged as V-commerce", as virtual reality technology is merged with online shopping. Food online stores had robust functionality including dynamic pricing and product selection, making it more appealing for those who are more comfortable with in-person experience.

On-going progress in the modern technology has contributed in improving people's lives and hence there is a solid conviction that validated research plans including artificial intelligence will be of significant advantage in helping people to fight this infection.

Specializations In Higher Studies

Many Engineering students aspire to join in M.Tech ,M.S or M.B.A for their higher studies after their B.Tech graduation. But most of the students doesn't know about what courses are available in M. Tech, M.S & M.B.A. So, here are the specialization courses that are offered of their respective branches in M.Tech and M.B.A.

M.Tech specializations in Electrical Engineering

- Ø Power Electronics & Drives
- Ø Power Systems Engineering
- Ø Instrumentation & Control Systems
- Ø Computer Controlled Industrial Power
- Ø Communication Engineering.
- Ø Control & Computing
- Ø Power Electronics & Power Systems
- Ø Micro Electronics
- Ø Electronic Systems
- Ø Micro Electronics and VLSI Design
- Ø Control and Instrumentation
- Ø Photonics
- Ø Instrumentation Engineering
- Ø Power Electronics & ASIC Design
- Ø Electrical Drives
- Ø Industrial Power & Automation
- Ø Electrical Systems
- Ø Signal Processing & Control
- Ø Condition Monitoring Control
- & Protection of Electrical Apparatus
- Ø Integrated Power Systems
- Ø Electronic Systems & Communication Industrial Electronics

M.Tech specializations in Electronics and Communication Engineering

- Ø Advanced Communication Systems
- Ø VLSI System Design
- Ø Signal Processing
- Ø Electronic Instrumentation
- Ø Digital System
- Ø Microelectronics & VLSI Design
- Ø Electronics Design & Technology
- Ø Telecommunication Engineering
- Ø Communication & Information Technology
- Ø Electronics & Communication Engineering

M.Tech specializations in Computer Science and Engineering

- Ø Information Technology
- Ø Information Security
- Ø Software Engineering
- Ø Distributed Computing
- Ø Image Processing
- Ø Computer Systems and Hardware
- Ø Database and Information Systems
- Ø Programming languages
- Ø Computer Networks and Distributed Systems
- Ø Artificial Intelligence Advanced Computing

M.Tech specializations in Civil Engineering

- Ø Environmental Engineering.
- Ø Geoinformatics.
- Ø Geotechnical Engineering.
- Ø Hydraulics and Water Resources Engineering.
- Ø Infrastructure Engineering and Management.
- Ø Structural Engineering.
- Ø Transportation Engineering.

Specialization In Higher Studies

M.Tech specializations in Mechanical Engineering

- Ø Thermal Engineering
- Ø Computer Integrated Manufacturing
- Ø Automobile Engineering
- Ø Manufacturing Engineering
- Ø Material Technology
- Ø Industrial Engineering
- Ø Product Design and Development
- Ø Industrial Safety Engineering
- Ø Thermal & Fluids Engineering
- Ø Design Engineering
- Ø Computer Aided Design & Manufacturing
- Ø Maintenance Engineering
- Ø Energy Engineering & Management
- Ø Refrigeration Air Conditioning & Heat Transfer
- Ø Thermal Turbo Machines ·
- Ø Cryogenics & Vacuum Technology
- Ø Turbo Machines
- Ø Mechatronics Engineering ·
- Ø Industrial Tribology & Maintenance Management

Specializations in MBA

- Ø MBA in Finance
- Ø MBA in Entrepreneurship
- Ø MBA in Marketing
- Ø MBA in Information Technology(IT)
- Ø MBA in Strategy
- Ø MBA in Leadership



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Unconscious thoughts can sometimes bring to the fore ideas one might easily dismiss as unrealistic.

Upcoming Opportunities for Job Seekers

Wipro Elite NLTH Registraion :

- Qualification : B.E./B.Tech/ 5 years Integrated M.Tech (CS/IT/Circuital)
- Eligibility : 2021
- Work Location : Across India
- Profile : Project Engineer
- For more Info. Refer to <https://careers.wipro.com/elite>

Microsoft Off Campus Drive :

- Qualification : Any Graduate/Post Graduate
- Eligibility : 2018/2019/2020/2021
- Work Location : Across India
- For more Info. Refer to <https://careers.microsoft.com/>

Deloitte Off Campus Drive :

- Qualification : B.E./B.Tech/M.C.A./M.E./M.Tech
- Eligibility : 2018/2019/2020/2021
- Work Location : Mumbai/Hyderabad/Bangalore
- Profile : Business Technology Analyst
- For more Info. Refer to <https://jobs2.deloitte.com/ui/en/eapply/E21HCB-TARP-OffCampus?src=CWS-1>

TCS Inframind Season IV :

- Qualification : B.Tech/B.E./M.E./M.Tech/MCA/BCA/BSc/MSc
- Eligibility : 2021/2022/2023
- Profile : Internships and Job Offers
- For more Info. Refer to <https://on.tcs.com/2T9RznT>

Swiggy Careers :

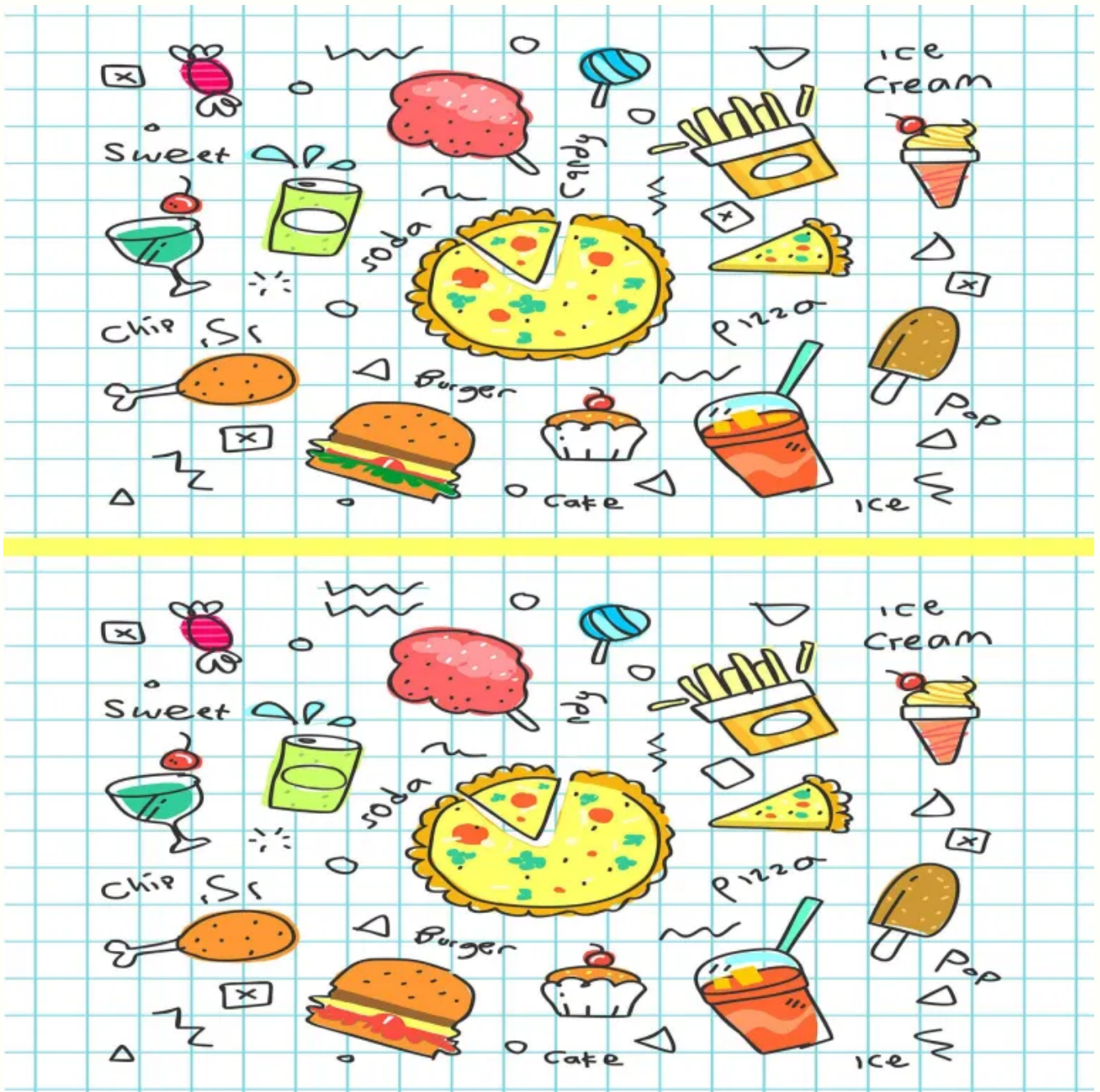
- Qualification : Any Graduate/Post Graduate
- Eligibility : 2021
- Work Location : Across India
- For more Info. Refer to <https://jobs.lever.co/swiggy/78bf9e55-9088-482b-bb26-92153accd89f/apply>

TCS MBA NQT Hring Drive :

- Qualification : B. Tech/B.E background prior to MBA / Integrated MBA is a must
- Eligibility : 2021
- For more Info. Refer to <https://www.tcs.com/careers/management-hiring-yop-2021>



LET'S HAVE SOME FUN
SPOT THE DIFFERENCES



INTERVIEW EXPERIENCE

BY ONE AMONG SANDBOX TEAM

Interview Experience with Hexaware:

Round 1 - Written Test: Aptitude, Logical Reasoning, Verbal, Technical (platform - First Naukri)

Round 2- TR: Programming questions like Sum of two numbers without using + operator, Comparison of two numbers without using Relational Operators, Ques on DBMS, File Handling, HTML.

Round 3 - Communication Skills (Mettl platform)

Round 4 - HR : Self Introduction, Question on "How do you overcome this time of Pandemic?" , Company related ques, about relocation, if you have an offer already in hand be prepared to answer to the questions like, How do you choose between the Companies?, your priorities and aspirations.



HAPTIC TECHNOLOGY

Have you ever wondered if you could feel the texture of clothes while shopping online? How about holding the weapon used by the character from your favorite video game and experiencing real time aircraft simulation? Yes!! Nothing is impossible in this digital world. The biggest question is how can a user touch what is inside a virtual world? One answer for everything mentioned above is HAPTIC TECHNOLOGY

Haptic is the science of touch. It is a tactile feedback technology. It makes vibrations and movements which make people think that there is a real object. The haptic information is a combination of tactile and kinesthetic information. Devices such as phantom interface and Cyber Grasp system are used to capture the sense of touch and provide 3D touch to virtual objects.



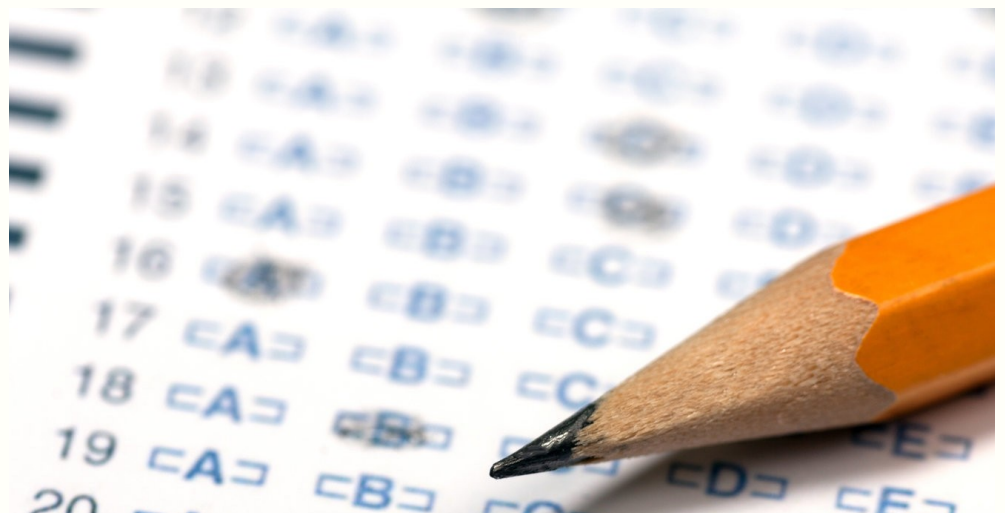
The building blocks of this technology were laid back in 1993, the AI laboratory at Massachusetts Institution of Technology constructed a device that delivered haptic simulation, finally making it possible to touch and feel a computer-generated object. The applications of Haptic technology are immense. Video game makers have been early adopters of passive haptics, which takes advantage of vibrating joysticks, controllers and steering wheels to reinforce on-screen activity.

This wearable technology gives a new shape to modern navigation systems by enabling user to feel the shape and structure of every object over a map. Similarly it has a great impact in the field of medical sciences such as using haptic interfaces for training and studying. This can also act as assistive technology for the blind and visually impaired. Therefore continued exposure of this technology to various fields can result in massive development and progression. In a nutshell, Haptic tech gives the feeling of touching a physical object. The perception of world will be elevated to a whole new level with haptic tech. Let's wait for the Human-Machine experience to intensify!!



Graduate Admission Tests At A Glance

- **GRE:** People who are interested to pursue M.S. must take exam GRE to get scholarships. Now a day most of the foreign universities are offering graduate courses at affordable cost. The Graduate Record Examination or GRE is a standardized test that is an admissions requirement for many graduate schools in English speaking countries. It is created and administered by the Educational Testing Service. It is a computer based Online Test. The percentile scored in this exam will decide your future in doing M.S in foreign nations. The GRE question paper consists of three sections there are verbal reasoning, quantitative reasoning, critical thinking and analytical writing skills.
- **TOEFL:** The Test of English as a Foreign Language evaluates the potential success of an individual to use and understand Standard American English at a college level. It is required for nonnative applicants at many English-speaking colleges and universities. A TOEFL score is valid for two years and then is deleted from the official database.
- **GMAT:** The Graduate Management Admissions Test is a standardized test for determining aptitude to succeed academically in graduate business studies. The GMAT is used most commonly for admission into an MBA program. More than 5,400 MBA and management programs worldwide accept the GMAT exam. The GMAT consists of four main sections - Analytical Writing Assessment, Integrated Reasoning, Quantitative and Verbal.
- **GATE:** Graduate Aptitude Test in Engineering (GATE) is an annual exam for admission to M. Tech and M.S. programs in most engineering institutes in India. It is regarded as a benchmark test for engineering graduates in India. This examination is coordinated by a committee, comprising of Indian Institute of Science, Bangalore and seven Indian Institutes of Technology on behalf of the National Coordinating Board - GATE, Department of Education, and Government of India. The pattern and syllabus are usually based on a candidate's B. Tech. Or BE syllabus. Minimum eligibility for appearing in this exam is usually a B. Tech, BE, B. Arch. or M.Sc.
- **CAT:** CAT Exam (Common Admission Test) is a computer-based selection test conducted by the Indian Institutes of Management (IIMs) as a prerequisite for admissions to their business administration program



LIGHTEN YOUR MOOD

ENJOY THE JOKES

Son : Dad ! I'm going Out.. !

Dad : are you telling me or asking me Permission.?

Son : I'm asking you for Money..!

An Old man had 8 hair on his Head

He went to a Barber Shop

Barber is anger asked...

Shall I cut or Count.?

Old man Smiled and Said..

" Colour it ! ".

Life is to enjoy with whatever you have with You

One Humour A Day Keeps the
Boredom Away:

I asked my new Girlfriend what
sort of books she's interested in..



She said:
Cheque books.

COMPUTER VISION

Computer vision is one of the trending technology in now a days. many of are thinking what is computer vision ?? and how the computer vision works ?? is future depends on computer vision??

Simply, the computer vision is technology both hardware and software is allowing machines to see like humans see. the goal of computer vision is understand the content of digital images such as photographs and videos. Computer vision is all about pattern recognition. It is branch of artificial intelligence. Computer vision used across many industries to enhance the consumer experience, reduce cost and increase security.?

Computer vision works on three basic steps like its first step is acquiring image (large images or videos from real world) it takes image pixel by pixel second step is processing the image using some deep learning algorithms this algorithms use a special kind this are called as neural networks ,called as convolutional neural networks(CNN) and the last step is a understanding the image where image identified or classified.

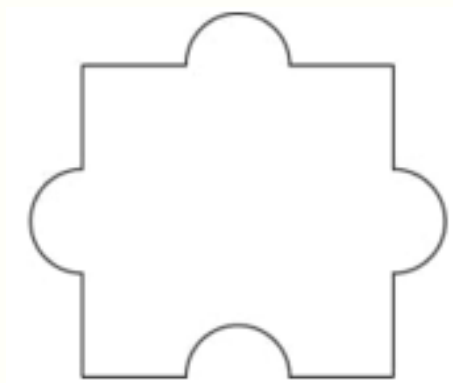
From last few years we can see that some high - level problems solved by computer vision like 3D model building, Medical Imaging, Fingerprint recognition and biometrics. not only these Now days the applications for computer vision have grown exponentially.

Yes, future depends on computer vision like we are seeing everyday we use computer vision in I phones and face id technology to unlock our smartphone. We also use computer vision driverless cars with the market looking bright, there's no stopping computer vision market. Market research future reports did a report and estimates the computer vision market will be valued at nearly \$50 billion by the end of 2024.



INTERVIEW QUESTIONS

GIVEN A SPECIAL JIGSAW PUZZLE CONSISTING OF N ROWS AND M COLUMNS ALL IDENTICAL PIECES. EVERY PIECE HAS THREE TABS AND ONE BLANK. THE TASK IS TO CHECK IF THE PUZZLE IS SOLVABLE BY PLACING THE PIECES IN SUCH A WAY THAT THE TAB OF ONE PIECE FITS PERFECTLY INTO A BLANK OF OTHER PIECE.



YOU HAVE TWELVE WEIGHTS, ONE OF WHICH IS HEAVIER OR LIGHTER THAN THE REST, BUT YOU DON'T KNOW WHICH ONE IS HEAVIER OR LIGHTER, AND A BALANCE. USING JUST 3 WEIGHINGS ON THE BALANCE, CAN YOU FIND A WAY TO IDENTIFY WHICH WEIGHT IS THE ODD ONE OUT, AND WHETHER IT IS HEAVIER OR LIGHTER?



PROJECT DEVELOPMENT

BY ONE AMONG SANDBOX TEAM

- K.GOWTHAM SAI SUMANTH

SOCIETAL NEED

The main concept of this project is to design a circuit which is used to make gesture-controlled home environment for easy operation and increased surveillance.

TECHNIAL DESCRIPTION

The primary goal of gesture recognition research is to create a system which can identify specific human gestures and use them to convey information or for device control. Gestures are one of the most efficient ways of interaction between machines and humans. This can be achieved by interfacing Raspberry-pi and OpenCV libraries using python modules.

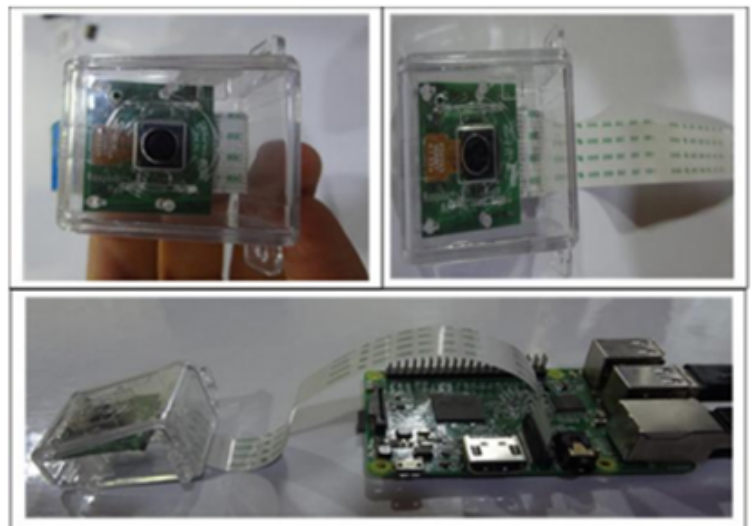
Gesture control requires an image capturing device such as camera module used in this project in order to identify the movement of the objects.

Hardware Requirements : DC Power supply(5v), Raspberry pi board (version 3.0), camera module, Bread Board, male-female connectors, LEDs.

Software Requirements : Python, OpenCV, Rasbian OS.

WORKING PRINCIPLE

- Gesture recognition refers to the mathematical interpretation of human motions using a computing device. It is a component of perceptual user interface (PUI).
- The basic principle involved is recognizing human movement as a form of input and respond with the appropriate output when it detects a movement that corresponds with the command .
- Gesture recognition is classified as Touch-less User Interface(TUI).In gesture recognition, the human body's motions are read by a camera and the captured data is sent to a processing unit which then makes use of this data as input to handle applications or devices.
- The software OpenCV used here is a cross platform library that mainly focuses on features like image processing ,video capture and analysis .
- It is built to provide a common infrastructure for computer-vision applications and accelerate use of machine perception in commercial products.



QUIZ TIME

1. IN WHICH COUNTRY BCCI ORGANIZED IPL -2020 ?

- A. INDIA
- B. UK
- C. DUBAI
- D. SRILANKA

2. WHICH ONE OF THE BELOW IS NOT A OTT PLATFORM ?

- A. AHA
- B. OHO
- C. NETFILX
- D. SONY LIV

3. WHO IS THE CURRENT PRESIDENT OF AMERICA?

- A. OSAMA BIN LADEN
- B. BARACK OBAMA
- C. DONALD TRUMP
- D. JOE BIDEN

4. WHAT IS THE ABBSEAVTION OF MBA ?

- A. MANAGEMENT OF BUSINESS ADMINISTRATION
- B. MASTER OF BUSINESS ACCOUNTING
- C. MASTER OF BUSINESS ADMINISTRATION
- D. MASTER OF SCIENCE IN BUSINESS

5. IN WHICH STATE FIRST COVID-19 CASE REGISTERED IN INDIA?

- A. DELHI
- B. ANDHRA PRADESH
- C. KERALA
- D. TAMILANADU

6. ON WHICH DAY WE CELEBRATE ENGINEERS DAY IN INDIA?

- A. SEPTEMBER 12TH
- B. SEPTEMBER 16TH
- C. AUGUST 15TH
- D. SEPTEMBER 15TH

7. WHAT DOES COME DOWN BUT NEVER GOES UP _?

8. WHAT HAS A HEAD, TAIL BUT DOESN'T HAVE A BODY ?

9. BAY OF BENGAL IS IN WHICH STATE _?

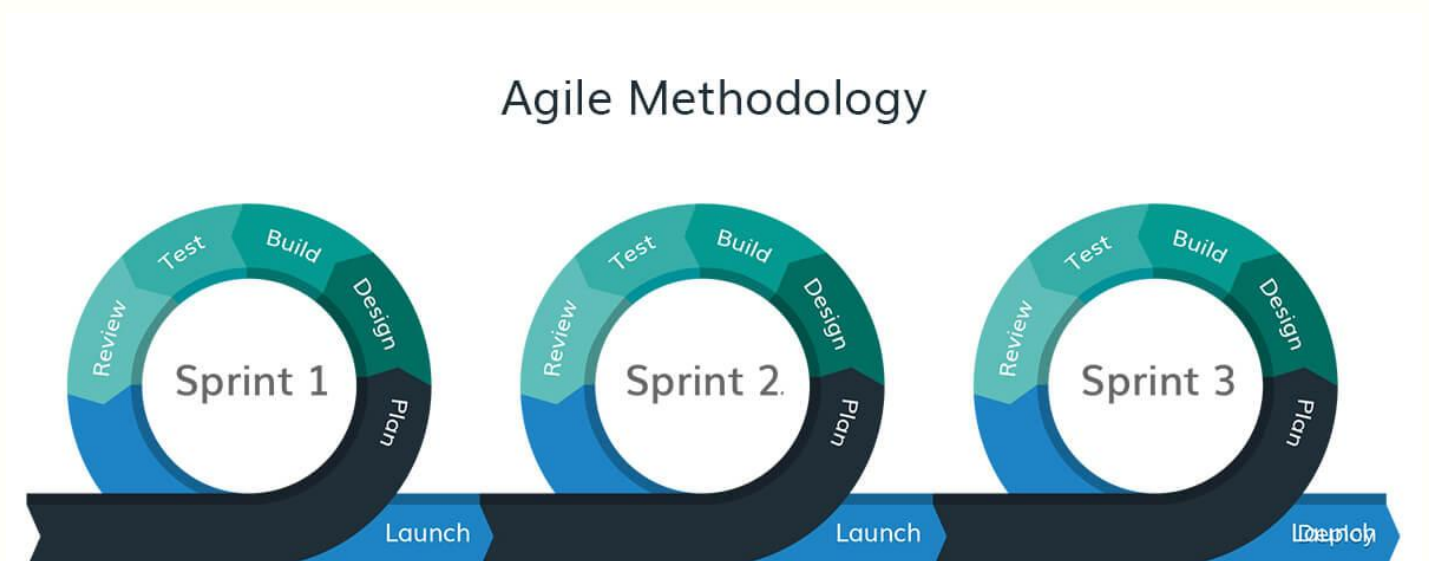
Industry Buzz Word : Agile Methodology

Agile development is a set of processes for creating software that includes being creative and flexible in software development. This means that the code is kept simple, is tested often, and, instead of waiting for everything to be finished, incremental but functional parts of the software are released as soon as they are ready. These modules are functional and will be able to help users do some work.

Key Components of Agile Development:

1. User Stories: Being customer-centric approach, agile uses a short outline from a client's perspective.
to estimate how much work needs to be done and what the final product should look like.
2. Sprints: Periodic short iterations, to improve and upgrade a product or service.
3. Stand-up Meetings: Daily scrum meetings, where team members tell each other what part of project they are currently working on.
4. Agile Board: A project management software function used to keep track of team progress.
5. Backlogs: In sprint planning process, any backlog stories will be moved into sprint where software developers work on them.

It is important in today's world, as businesses today have different needs, and because of the ever-changing demands coming from new technologies and customers, you need to be very flexible in addressing these needs and demands. Agile development allows you to bring a quality and functional product more quickly. And because agile development puts more focus on individuals and their ideas rather than tools and processes, it creates a better understanding between IT and business leaders..



TOP PERFORMERS

FED-EX DAY

FEDEX DAY WAS A 24-HOUR EVENT FULL OF EXCITING & INNOVATIVE ACTIVITIES ORGANIZED BY SAND-BOX TECHNOLOGIES ON 29TH NOVEMBER 2020. THE SESSION INCLUDED AN INTRODUCTION ABOUT DATASCIENCE AND HANDS-ON TRAINING AND ALSO AN ASSIGNMENT WAS PROVIDED TO THE STUDENTS FOR THE EVALUATION OF THEIR UNDERSTANDING AND ACTIVE PARTICIPATION

WE GOT A SO MANY POSITIVE FEEDBACKS FOR THE DAY AND MORE THAN 100+ STUDENTS WERE PART OF THE EVENT. OUT OF MANY PARTICIPANTS TOP 5 PERFORMERS WERE SELECTED BASED ON THE ASSIGNMENT PRIORITY AND CREATIVITY. THE TOP PERFORMERS RECEIVED TASK COMPLETION CERTIFICATES ISSUED BY SAND-BOX..

S.No	Name	College Name
1.	REGANI SAI VENKATA VARA PRASAD	NATIONAL INSTITUTE OF TECHNOLOGY, ROURKELA
2.	MADHURANTHAKAM HARSHVARDHAN	SRI VENKATESWARA COLLEGE OF ENGINEERING(SVCE), TIRUPATI
3.	ARDAMALA MALLESWARI	RAJIV GANDHI UNIVERSITY OF KNOWLEDGE AND TECHNOLOGIES RKVALLAY
4.	VADAPALLI JAYALAKSHMI	SRI VASAVI ENGINEERING COLLEGE
5.	CHUNDURU PAVAN	CHINTALAPUDI ENGINEERING COLLEGE

sand-box
- Lighthouse for your career

CELEBRATION TIME FOR OUR TEAM

SAND-BOX TECHNOLOGIES IS VERY PLEASED TO ANNOUNCE A PIECE OF GOOD NEWS REGARDING OUR STUDENT-INTERNS (LIGHTHOUSE TEAM MEMBER). WE CONGRATULATE **VINMAYI SWAMY** AND **M.THANUJA** FOR THEIR GREAT ACHIEVEMENT.

THIS IS THE RESULT OF YOUR CONSTANT EFFORT AND WE APPRECIATE YOUR HARD WORK. SAND-BOX PROVIDES A LEARNING PLATFORM FOR STUDENTS AND PROVIDES EXPOSURE TO TECHNOLOGIES AND WORK ETHICS AND WE THANK ALL OUR MEMBERS FOR BELIEVING IN SAND-BOX.

BEST WISHES FOR YOUR FUTURE.

