

BITS & BYTES e-Newsletter

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Volume 7, Issue 1



Principal Message



I would like to congratulate e-News Letter Editorial Team for successfully bringing out 7th Edition of the "Bits & Bytes". I am happy to note that, good number of events have been conducted in the department during the last Odd semester and few of the final year students are placed in higher packages.

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ALVA'S INSTITUTE OF ENGINEERING & TECHNOLOGY, MOODBIDRI

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

(Accredited by NBA New Delhi 2019-2025 & NAAC with A+)

Department

Vision

"Engendering competent, excellent professionals by transforming the knowledge and computing skills to individuals through modern innovative tools and techniques"

Editorial Team

Editor in Chief: Dr.Manjunath Kotari

Issue Editor: Mr.H Harshavardhan

Members: Dr.Aslam Nandyal

: Mrs.Deepika Kamath

: Mr.Venkatesh

Students Members:

Mr.Shetty Prakhyat

Mr.Toshif Husaien Patil

Mr.Neerav Patel

DEPARTMENT MISSION

- To produce skilled, creative software developers through rigorous training.
- To conduct specific technical courses to keep abreast to the latest technological developments and transformations in the domain.
- To establish Industry-Institute Interaction programs to enhance the skills of employability and entrepreneurship.
- To implement the ideas of research and innovations in interdisciplinary domains

“Readiness for Future Technology”

Interactive Session

Resource Person: Dr.P.Nagabhushan,
Vice Chancellor Vignan’s Foundation’s for Science,
Technology and Research. Guntur, Andra Pradesh.

Date: 5 th Sept,2023

Venue: Innovation & We Seminar Hall

Alva’s Institute of Engineering & Technology, Moodbidri organized an Interactive Session on “Readiness for Future Technology” on 5 th September,2023 for selected Final Year students of CSE/ISE/AIEM and ECE. Prof.P Nagabhushan was the guest speaker of the session. Prof. Nagabhushan initially enlightened the students’ role in preparedness of campus selections and higher studies.



Prof. PNB interacted with each every students and asked all the students about their ambitions and preparedness for the same.

He suggested every students to work hard towards achieving the goal. He spoke about the Higher Educations in the India and abroad, and it’s importance in the life. He suggested the students to join the job for earning perks and do the Maste’s further at least before 5 years down the graduation.



About 70 students of CSE/ISE/AIEM/ECE were attended and talk and interacted with Dr.P.Nagabhushan very well. Dr.Majunath Kotari , HoD CSE welcomed the gathering and Dr.Sudheer Shetty HoD ISE briefly introduced the guest to gathering.

Mr,Harish Kunder HoD AIEM proposed the vote of thanks.

Inaugural Report

Institute of Electrical and Electronics Engineers (IEEE) Student Branch, Alva’s Institute of Engineering and Technology, Moodbidri, Mangalore was inaugurated on 16 th September 2023. IEEE AIET Student Branch was inaugurated by the Chief guest Dr. Mohit P.Tahiliani, Chair, IEEE Mangalore Subsection The inaugural ceremony commenced with the lightning of the lamp by the dignitaries- Dr. Mohit P.Tahiliani, Professor , NITK Surathkal, Dr.Peter Fernandes, Principal, AIET, Moodbidri, Dr.Manjunath Kotari, Faculty Counsellor IEEE & HoD CSE AIET, Moodbidri. Mr.Neerav V Patel, Student Branch IEEE Chair and Ms.Gayathri C B, Student Branch IEEE Co-Chair.

After the inauguration Dr.Mohit P Tahiliani said that “The Institute for Electrical and Electronics Engineers (IEEE) is a professional organization supporting many branches of engineering, computer science, and information technology, electrical, electronics, mechanical, civil engineering. In addition to publishing journals, magazines, and conference proceedings, IEEE also makes many standards for a wide variety of industries.



He gave the example of all our daily life usages like, Internet, Wifi, Bluetooth etc are standardized by IEEE. IEEE is divided into 10 global geographical units called 39;regions. IEEE India Council was established on 20th May 1976 and is one of the five councils in the Asia Pacific Region (Region #10 of IEEE). An "IEEE Section" is an IEEE entity which caters to the needs of a specified geographical area. At present there are 13 IEEE Sections in India". Bangalore is the 10 th Section in India and Bangalore Section has 3 Subsections, in which Mangalore is one of the sub-section of Bangalore section. Aiet is the 22 nd Student Branch(STB60215368) in Mangalore Sub-section. Also he has highlighted about the Professionals and Students IEEE



Dr.Peter Fernandes Principal, congratulated the IEEE members and he said many more activities have to be initiated in this professional society. Dr.Manjunath Kotari, Faculty Counsellor IEEE Student Branch ; HoD CSE welcome the gathering and Mr.Neerav V Patel and Ms.Gayathri C B Student Chair & Co-Chairs were present. All the Deans, Heads, Faculty of the various department, and about 250 CSE students present during the Inaugural Program,



Technical Workshop On "3D Modelling and Game Development"

Date: 3rd October 2023

Venue: DBMS Lab, Department of Computer Science and Engineering, Aiet

Resource Person: Mr. Anil Rokhade, Freelancer, Ranebennur

The event began with an inauguration ceremony where the Head of Department, Dr.Manjunath Kothari, delivered a presidential address highlighting the importance of game development and its future prospects.

The Chief Guest, Mr. Anil Rokhade, a renowned freelancer from Ranebennur, shared his expertise and insights on 3D modeling and game development with the gathering.



During the workshop, Mr. Anil Rokhade covered various topics related to game development, including the Unity 3D framework and other essential tools and techniques. Participants gained hands-on experience in designing and developing interactive 3D models for games.



The workshop witnessed active participation from students who showed a keen interest in the field of game development. The practical sessions and demonstrations allowed them to explore the creative possibilities of 3D modeling and understand the process of game development from scratch.

The event provided an excellent platform for students to enhance their skills in 3D modeling and game development. In the ever-evolving field of game development.



Technical Workshop On “Cyber Security and Ethical Hacking”

Date: 16th and 17th October 2023

Venue: DBMS Lab, Department of Computer Science and Engineering, AIET

Resource Person: Mr. Samarth Bhaskar Bhat, Reverse Engineering Infosec, Bengaluru

Collaboration: IEEE Student Chapter, AIET

The Technical Workshop on Cyber Security and Ethical Hacking, organized by “C-maniac” Department of Computer Science and Engineering, AIET, in collaboration with the IEEE Student Chapter.



The event commenced with an inaugural ceremony where the Head of Department, Dr. Manjunath Kothari, delivered a presidential address. Chief Guest, Mr. Samarth Bhaskar Bhat from Reverse Engineering Infosec, Bengaluru, addressed the gathering.

Dr. Aslam B Nandyal, Forum Coordinator of “C-maniac,” expressed gratitude through the vote of thanks. The inauguration ceremony also witnessed the presence of members from the IEEE Student Chapter.

DMr. Samarth Bhaskar Bhat covered various essential topics related to ethical hacking, including the usage of Kali Linux and other related tools. Participants gained valuable insights into the world of cyber security and explored the techniques and practices of ethical hacking.

The workshop provided the students with practical knowledge and hands-on experience in the field of cyber security. The collaborative effort of “C maniax” Department of Computer Science and Engineering and the IEEE Student Chapter enhanced the overall learning experience.



Our sincere thanks to Mr. Samarth Bhaskar Bhat for sharing his expertise and making the event a memorable one.

Innovative Tools and Methods for Satellite Image Processing

Date: 26/11/2023

Location: 30th October 2023 to 4th November 2023

Venue: DSLab, Dept of AI&ML AIET, Mijar, Moodbidri

Internal Quality Assurance Cell (IQAC) Geoinformatics Research Lab IEEE- Student Branch Chapter – AIET (STB60215368) Institute Innovation Council – AIET

Alva’s Institute of Engineering and Technology (AIET), Mijar, Moodbidri, Dakshina Kannada

Organises a five-day hands-on workshop on “Innovative Tools and Methods for Satellite Image Processing”

The workshop aimed to enhance the skills with knowledge in the domain of Remote Sensing amongst the young minds using state of the art tools focused on AI, ML, Image Processing.

About Geoinformatics Research Lab

Geoinformatics Research Lab aims to leverage geospatial technology and data to solve complex spatial problems, contribute to scientific research, inform policy decisions, and enhance the knowledge of interconnectedness of natural and human systems on a geographic scale.

Day1: Inauguration

The workshop began at 9:30 AM with lighting of lamps. Dr. Majunath Kotari, HoD CSE and IEEE-faculty coordinator- AIET welcomed the gathering and addressed the need for Geospatial tools in the digital world. Dr. Vinay S, highlighted the applications of GIS, Remote Sensing and need of interdisciplinary research and studies for addressing real world problems.



Dr. Dattathreya, Dean Planning and IQAC main Coordinator, expressed his thoughts and need geospatial tools. He elaborated on how ISRO, NRSC and AIET have collaborated worked in the past.

Dr. Peter Fernandes, Principal AIET, in his presidential address indicated the role of Remote Sensing in the growing world and its importance in decision making. He emphasized on how GIS has been extensively used across multiple domains. He emphasized the importance of conducting multidisciplinary research and urged the students to think beyond the box to comprehend and resolve real-world issues.

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Introduction to Remote Sensing:

Dr. Vinay S introduces the very basics of remote sensing, providing a comprehensive understanding on the domain. He introduced the key components of remote sensing, principle, the physics behind it and explained their significance and future prospects.



Digital Image Processing:

Mr. Vedanth conducted a highly effective and detailed session on image processing. He explained the basics of image processing, starting with introduction to images, resolution, and aspect ratio. He also provided insights on using various libraries and tools in Python for image processing.

Day2: Artificial Intelligence and Machine Learning

Mr.Satyam systematically elucidated the concepts and components of AI and ML, commencing with an overview of what AI is and the genesis of its formation.

He highlighted AI's role in automating routine tasks, such as image classification and pattern recognition, while intermediate AI delves in to more complex functions like predictive analysis and route optimization.

During the afternoon session, the speaker delved into Convolutional Neural Networks (CNN), a deep learning model primarily used for image analysis. Three types of machine learning were discussed: supervised, unsupervised, and reinforcement learning.



Day3:Open-Source Softwares

During the session with Mr. Neerav, he expounded on the concept of Open Source Software (OSS). This term encompasses software that is freely accessible to the public, allowing users the freedom to modify, distribute, and enhance the software. In contrast to closed-source proprietary software, open source promotes collaboration and transparency, providing users with freedoms such as the ability to study, modify, and distribute the software.

UNET Demonstration

Mr.Satyam elucidated that the U-Net architecture, one of the widely employed convolutional neural network for image segmentation/classification tasks. Within the domain of GIS, this architecture is harnessed for object detection and classification in satellite or aerial imagery.



GRASS GIS–Handson

During the afternoon session under the guidance of Dr. VinayS., participants successfully installed GRASS GIS and imported geographical data into the software.



Day4:Mobile GIS for Field Data Collection

Under the guidance of Dr. Vinay S., the GIS field visit constituted a comprehensive effort to collect detailed spatial data on various elements of the ecosystem, including medicinal plants, butterflies, birds, and land use.

The GIS field visit successfully gathered significant data, now serving as a valuable resource for ecological research, conservation planning, and future GIS analysis. The collected data will contribute to understanding the dynamics of the ecosystem, its components, and their interactions.

Expert Lecture–Dr.PrakashPS

During the afternoon session, Dr.Prakash, distinguished speaker from Irish Centre for High-End Computing ICHEC, delivered an informative presentation on the multidisciplinary field of remote sensing and geospatial technologies.

Day5:GRASS GIS-Handson

During the hands-on session hosted by Dr.VinayS, participants learned how to utilize GRASSGIS(Geographic Resources Analysis Support System) for the importation, processing, and analysis of satellite data. The session encompassed various other tasks.

Overall, this hands-on session provided participants with practical exposure to various functionalities of GRASS GIS.

Valedictory Session

The IEEE-organized workshop marked a significant milestone in the field of Geographic Information Systems (GIS) at AIET. The event featured certificate distribution to participants along with speeches from Dr.Dattathreya, the chiefguest and Dr.VinayS, theresource person.



The ceremony also recognized the efforts of participants who completed workshops in GIS by distributing certificates.

Workshop Outcomes

The workshop focused on introducing the students to concepts of Remote Sensing, Digital Image Processing, AI and ML with both theory and hands on session. The participants were able to Develop Indices for extracting natural features.

Workshop On "Flutter And Node JS"

Date: 26/11/2023

Location: Internet Lab

Target Audience: Basics of Flutter And Android Development With Server Side Management.

Day 1: Basics of Object Oriented Programming And its Use Cases

Activities:

- Collectively solving Simple Programs Related to Object Oriented Programming.
- Understanding the importance of Classes And Objects in a program.
- Doubt solving session on Programming.
- Question and answer Session Regarding on sample Code And Code Architectures.

Outcomes:

- Audience cleared their Doubts about Building Logic and realized how to write code professionally.



Day 2 : Flutter Setup Android Studio Setup

Activities:

- Complete Setup And Demonstration of Some basic Apps done by Edwin's Students to boost their confidence.

Outcomes:

- Students got inspiration to learn Flutter after looking at the App developed by their friends who are the members of Edwin's club.

Day 3 : Introduction to Dart Programming

Activities:

- Write Programs Using Dart and try solving the basic Programming Questions in Dart.



- Quiz competition related to the programming to achieve fun with Learning.

Outcomes:

- Learnt the basics of Dart that is required to start Flutter Development and even some more extra concept regarding Object Oriented Programming.



Day 4: Introduction To Flutter Android Development

Activities:

- Built Some Basic Apps Using Stunning Flutter Library Material Designs.
- Taught students about some concept of states in UI and color combination helping in better UI designs for best user experience.

Outcomes:

- Students learnt how the App can be developed.
- They are ready to learn about more concepts like Page Shifting, Animations etc.



Day 5 : Flutter App Connections And Communication With Servers

Activities:

- Connected Flutter With Third Party Api's and Data Handling and performing some actions on the data with Real Time example.
- Use of Dart Data Structures in creating efficient Flutter Application.

Outcomes:

- Students learnt how an application directly communicates with servers and how the responses from the Server is handled.
- End of Flutter session cleared all the doubts related to Flutter.

Day 7 : Node.js Environment Setup and Project Initialization

Activities:

- Comprehensive setup guides were provided, ensuring Students could seamlessly configure their development environments.
- Live demonstrations showcased the creation of basic projects, empowering participants to embark on their Node.js journey confidently.
- Students were encouraged to explore project initialization independently, fostering a sense of autonomy and self-reliance.

Outcomes:

- Students exhibited heightened confidence in navigating the Node.js ecosystem.
- The practical demonstrations served to bolster students' understanding, enabling them to envision the practical application of Node.js in real-world scenarios.



Day 9 : Database Integration with MongoDB

Activities:

- Live demonstrations elucidated the process of connecting Node.js applications to MongoDB databases,
- Emphasis on the concepts such as schema design and data manipulation.
- Hands-on exercises to interact directly with MongoDB.

Outcomes:

- Students emerged with a comprehensive understanding of MongoDB integration, equipped with the skills to architect database-driven Node.js applications.
- The practical nature of the session empowered students to overcome challenges related to database connectivity, instilling confidence in their ability to tackle real-world projects.

**Technical Workshop
"Cyber Security"**

Date: 27th NOVEMBER 2023

Venue: Alva's Naturopathy Yoga Hall
Shobhavana, Mijar

Resource Person: MR. Karthik Rao Bappanad,
Bengaluru

Collaboration: IEEE Student Chapter, AIET

Career guidance on cybersecurity:



Embarking on a career in cyber security is an exciting and dynamic journey. As the digital landscape continues to evolve, the demand for skilled cyber security professionals is at an all-time high. Begin by building a solid educational foundation, pursue a degree in cyber security, Computer science, information technology, or a related field. This provides a comprehensive understanding of fundamental concepts. Additionally, consider obtaining industry-recognized certifications like CompTIA Security+, Certified Information Systems Security Professional (CISSP), or Certified Ethical Hacker (CEH) to enhance your credibility.

Complement your formal education with hands-on experience. Create a home lab to practice cybersecurity skills, participate in Capture The Flag (CTF) challenges, and contribute to open-source projects. Practical experience not only reinforces theoretical knowledge but also demonstrates your skills to potential employers.

Cybersecurity is a vast field; identify a specialization that aligns with your interests. Establish a robust professional network by attending cybersecurity conferences, workshops, and meetups. Engage with online communities, participate in discussions, and connect with experienced professionals. Networking provides insights into industry trends, job opportunities, and potential mentors who can guide you in your career.



Cybersecurity & Internet Safety:

Cybersecurity is a multifaceted approach aimed at protecting digital systems, networks, and data from unauthorized access, cyberattacks, and data breaches. It encompasses a range of strategies, technologies, and best practices to ensure the confidentiality, integrity, and availability of information in the digital age

Key Components of Cybersecurity:

- Network Security
- Endpoint Security
- Identity Management
- Data Protection
- Application Security
- Security Awareness and Training



- Security Monitoring and Analytics
- Physical Security

The internet has transformed the way we live, work, and connect with others. While it offers incredible opportunities, it also comes with risks. By staying informed, embracing best practices, and fostering a culture of digital responsibility, we can collectively contribute to a safer and more secure online environment for ourselves and future generations

Safeguarding Personal Information:

- Use Strong Passwords
- Two-Factor Authentication (2FA)
- Be Mindful of Social Media

Embarking on a cybersecurity career requires continuous learning, specialization, and a commitment to ethical practices. Active networking and a strong online presence are crucial for success in this dynamic field. The synergy of robust cybersecurity practices and diligent internet safety measures creates a secure digital environment, empowering individuals to navigate the online world with confidence and responsibility



WORKSHOP ON "WEB SCARPING"

ON: 2nd December 2023

Venue: DS LAB, AIET



Introduction:

The one-day technical workshop on "Web Scarping" featured two esteemed speakers, Dr. Prathviraj N, Associate Professor at MAHE Manipal, and Prof. Raghudathesh G P, Assistant Professor - Senior Scale at MAHE Manipal.

The workshop aimed to equip participants with the skills and knowledge necessary for effective web scraping, a crucial aspect of data extraction and analysis in today's digital era.

The event commenced with an inaugural ceremony where the Head of Department, Dr. Manjunath Kothari, delivered a presidential address.



Agenda:

The workshop encompassed a diverse range of topics related to web scraping, offering participants a comprehensive understanding of the subject.

The agenda included:

Introduction to Web Scraping:

Dr.Prathviraj initiated the workshop by providing an overview of web scraping, highlighting its significance in data collection for research, business intelligence, and other applications.

Web scraping, also known as web harvesting or web data extraction, is the process of extracting data from websites. It involves gathering specific data from web pages and copying it into a central local database or spreadsheet for later retrieval or analysis

Techniques for Web Scraping

1. Web Crawling: It involves fetching web pages for later processing. Web crawlers, also known as web spiders or bots, navigate through websites and follow links to fetch pages.

2. HTML Parsing: HTML parsing involves using JavaScript to target a linear or nested HTML page. It is a powerful and fast method for extracting text, links, and other resources from web pages.

3. DOM Parsing: The Document Object Model (DOM) defines the structure, style, and content of an XML file. DOM parsers are used to view the structure of web pages in depth. They can access nodes that contain information and scrape web pages using tools like XPath.

4. Web scraping software: Web scraping software tools are designed to simplify the process of extracting data from websites. These tools provide various features and functionalities to make web scraping easier and more efficient.

Tools and Technologies:

Prof. Raghudathesh delved into various tools and technologies commonly used in web scraping, including popular libraries such as BeautifulSoup and Scrapy. Practical demonstrations and hands-on exercises were incorporated to enhance participant's proficiency.

Beautiful Soup is a popular Python library used for web scraping and parsing HTML and XML documents. It provides a convenient way to extract data from web pages by navigating and searching the parse tree.

Ethical Considerations in Web Scraping:

Both speakers emphasized the importance of ethical web scraping practices. The session covered legal and ethical considerations, responsible data usage, and the impact of web scraping on websites. Discussions revolved around maintaining integrity while extracting information from online sources.

Advanced Web Scraping Techniques:

The workshop delved into advanced techniques in web scraping, covering topics like handling dynamic content, working with APIs, and dealing with challenges posed by anti-scraping measures. Prof. Raghudathesh provided real- world examples and case studies to illustrate these advanced concepts.

Interactive Session and Q&A:

An interactive session allowed participants to engage directly with the speakers. Questions ranged from practical challenges in web scraping to ethical dilemmas. Both speakers provided insightful answers and practical solutions, fostering a collaborative learning environment.

Importance of the Workshop:

The workshop on web scraping addressed the growing demand for skills in data extraction and manipulation. Dr. Prathviraj and Prof. Raghudathesh provided a well-rounded understanding of the technical and ethical aspects of web scraping, empowering participants with the knowledge needed to navigate this complex domain.

The practical demonstrations and hands-on exercises allowed participants to apply the concepts learned during the workshop, reinforcing their understanding of the material. The ethical considerations highlighted by the speakers were particularly well-received, as participants recognized the importance of responsible data extraction in the age of information.

Uses of BeautifulSoup:

Purpose: BeautifulSoup is primarily used for extracting data from HTML and XML files. It simplifies the process of parsing and navigating the document structure.

Feedback and Future Directions:

Participants expressed their satisfaction with the workshop, acknowledging the relevance of the content covered and the expertise of the speakers. Suggestions for future workshops included more in-depth sessions on specific tools, advanced applications of web scraping, and opportunities for collaborative projects.

Conclusion:

The one-day technical workshop on web scraping, led by Dr. Prathviraj N and Prof. Raghudathesh G P, provided an enriching experience for participants seeking to enhance their skills in data extraction. The event not only addressed the technical nuances of web scraping but also emphasized the ethical considerations essential for responsible data practices.

Technical Workshop on "Cyber Security and Ethical Hacking"

ON: 09th December 2023

Venue: ML Lab Ground Floor

Time: 09:00am to 01:00pm

Introduction

Android Club organized "A Student Development Program on Mobile App Development with Flutter for Android", on 09th December 2023 from 09.00 AM to 01.00 PM.



Mr. Nagaraj Telkar, Assistant Professor in the Department of CSE AIET, was the coordinator of this training Program under the guidance of Dr. Manjunath Kotari, HOD of Computer Science and Engineering department AIET Moodbidiri.

Total 89 students were registered and 42 students were benefited from the training.

Details of Resource Person

Mr. Toshif Husen Patil is a dedicated and talented student currently pursuing his studies at **AIET, Moodbidire**. He has demonstrated a strong aptitude for programming and a keen interest in technology.

Mr. Toshif Husen Patil is enrolled as a student at AIET, Moodbidire, where he is pursuing a course in Computer Science and Engineering. His academic performance reflects his commitment to excellence, and he has consistently demonstrated a strong understanding of key concepts in his field of study.



One of Mr. Toshif Husen Patil's notable contributions is his involvement in maintaining the college's ERP (Enterprise Resource Planning) system. His responsibilities maintaining smooth functioning of ERP and efficiency of the system.

Mr. Toshif has actively participated in hackathons, or coding competitions and has demonstrated his problem-solving skills and innovative thinking.

His role in maintaining the college ERP has been pivotal in streamlining administrative processes, contributing to the overall efficiency of the institution.

Course Sessions:

App development using Flutter:

introduce participants to the fundamentals of Flutter, covering topics ranging from the installation of development tools to practical implementation, with a focus on building a Flutter app with sign-in functionality .



Overview of Flutter Framework:

Flutter, an open-source UI software development toolkit created by Google, is gaining rapid popularity in the world of app development. In the session, the participants were introduced to the fundamental concepts of the Flutter framework.

Advantages of Using Flutter for Cross-Platform App Development:

The session emphasized the numerous advantages that make Flutter an attractive choice for cross-platform app development:

- **Single Codebase:** Flutter allows developers to write code once and deploy it on multiple platforms, eliminating the need for separate codebases for iOS and Android.
- **Hot Reload:** The unique "Hot Reload" feature enables developers to instantly view changes made in the code, facilitating a rapid and iterative development process.
- **Rich Set of Widgets:** Flutter comes with a rich set of customizable widgets that aid in creating visually appealing and consistent interfaces across different platforms.

Android Studio Installation

The session commenced with a step-by-step guide on the installation of Android Studio, the official integrated development environment (IDE) for Android app development. Key points covered include:

Download and Setup:

- Participants were guided through the official website to download the latest version of Android Studio.
- Installation steps for Windows operating systems were demonstrated, ensuring inclusivity for all participants.

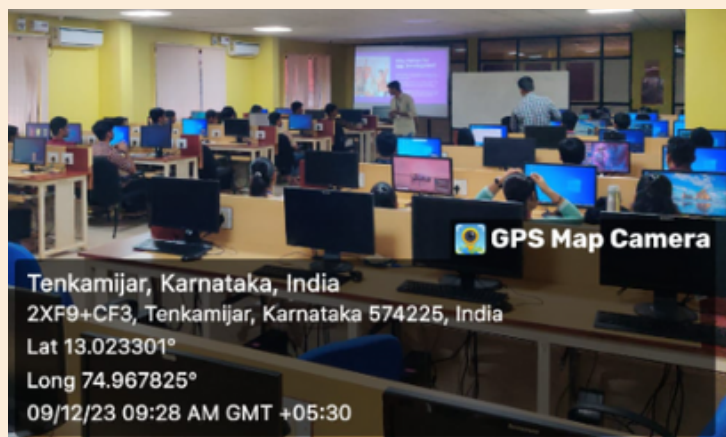
The Android Studio installation segment aimed to empower participants with the knowledge and confidence to set up a robust development environment tailored for Android app creation.

Flutter Installation:

The subsequent part of the session delved into the installation process of Flutter, ensuring a seamless integration with Android Studio:

Downloading Flutter SDK:

- Participants were directed to the official Flutter website to download the Flutter SDK.
- Clear instructions were given on extracting the SDK archive and placing it in a directory accessible by the system.



Database Connection in Flutter

Overview:

The database connection segment of the session focused on guiding participants through the process of integrating a database with a Flutter application. Establishing a connection to a database is crucial for storing and retrieving data in a mobile application. The report outlines the key aspects covered during this segment.

Live Demonstration - Connecting to a Database:

- A practical demonstration showcased how to establish a connection to a database within a Flutter app.
- Participants were guided through the process of configuring database credentials, handling authentication, and ensuring secure connections.

Code Implementation:

- The session included a hands-on coding segment where participants implemented database connection code snippets in a Flutter project.
- Key concepts such as opening and closing database connections, executing queries, and handling asynchronous operations were covered.

4. Practical Tips for Database Integration:

Participant Engagement:

The database connection segment encouraged active participation with a focus on practical implementation. Live coding sessions allowed participants to immediately apply the knowledge gained, fostering a hands-on learning experience.

There are 89 students were registered for **Mobile App Development with Flutter for Android during the academic year 2023-2024**. Out of this, 42 students were benefited from this training.

COURSE OUTCOME

Total 89 students were registered. 42 students were attended the training program and got benefitted by this training.

Training on "C and Data Structures "

From: 11th December - 23rd December 2023

Time: 9 AM to 4 PM

Department of CSE organized a Two Weeks Training Program on "C and Data Structures" for the students of Fifth Semester B.E.CSE (2021-25 Batch Students).



Dr. Manjunath Kotari, HOD of Computer Science and Engineering department, introduced the Trainer Mr. Vishal Vanaki to the V SEM CSE Students. Dr. Manjunath Kotari informed the students to learn the concepts of C and Data Structures concepts and become master in this area. He suggested the students to be able to crack the various company interviews/Coding Test on C and Data Structure.

Total 207 students were registered and benefited from the training.

Details of Resource Person

Mr. Vishal Vanaki is a Training Lead at Q Spider training Institute Bangalore. He has more than 25 years of experience in training C and Data Structures. He trained the students of many institutions all over India.

Currently he is a Team-Lead in a Freelancer like Q Spider training institute. He is a master in the subject of C and Data Structure subject. He cracked many more interview questions and tests on this area effectively.



3.Course Sessions

Morning Session Activity on 11th:

- Demonstration of printf statement in "C" programming
- Demonstration of preprocessors and Macros in "C"



Afternoon Session :

Session on comparing techniques of comparing the floating-point numbers with floating point variables.

Morning Session Activity on 12th:

- Session on concepts of variables and constants
- Demonstration of Scanf and Printf in "C"



Afternoon Session :

Discussion on difference between Long int and int, long float and float, Float and Double



Morning Session Activity on 13th Dec:

- Session on use of sizeof keyword in C, concepts of signed and unsigned data types in C and Conditional Statements in C.
- swapping of two numbers x and y with more logics.
- Demonstration of the Looping constructs in C and its usages

Afternoon Session :

Developing Programs in "c" for the given problem

Morning Session Activity on 14th:

Developing programming skills by using some complex problem statement

Afternoon Session :

Discussion on use of pointer in "c"



Morning Session Activity on 15th:

- Explanation on Function definition in C, Function prototype, function call and parameter passing mechanisms.
- Effective program writing skills.

Afternoon Session :

Group discussion on programming logic

Morning Session Activity on 16th:

- Analysis on Sorting techniques
- Study on Data-structure and recursive function

Afternoon Session :

Group discussion on programs



Morning Session Activity on 18th:

- Demonstration of fprintf ,fgets and get function statement in “C” programming
- Concept of character pointer

Afternoon Session :

Group discussion on programs



From 11 AM to 1 PM session, the trainer explained the concepts of two-dimension array with the declaration syntax. He explained few applications of two-dimensional array. He also explained the concepts of implementing the pointers on 2D array. He clearly explained how arrays are treated as during the translation. Students executed all the programs in 2 PM to 4 PM session. The trainer went to the students and verified the execution and explained the flow of the logic.

On 19th December 2023, in 9 AM to 11 AM session, the trainer explained the concepts of void pointers with the declaration and varieties of examples. He explained different depth of pointers to the string with examples. He also explained the function pointers in C++. The trainer explained the concepts of array of pointers and its uses.

In the 11 AM to 1 PM Session, the trainer discussed about Juggling Algorithm for rotating the array by left by n times. Juggling algorithm will perform far better than the traditional algorithm. The students are undergone with various applications of the strings like finding the length of the string, Copying the string from str2 to str1, and string concatenation.

Trainer explained most optimized code in C. Students has practical sessions from 2 PM to 4 PM. In this session, students executed many more programs under the observation of the trainer.



COURSE OUTCOME

Total 207 students were registered and attended the training program regularly and got benefitted by this training.

Workshop On Open-Source Tools

From: 07/12/2023, 08/12/2023, 11/12/2023

Location: DS LAB

Target Audience: Basic of Linux, LinkedIn and GitHub

BASICS OF LINUX:

Maniax aim if the of the workshop to provided an introduction to the basics of Linux, demystifying its core concepts and equipping participants with fundamental skills to navigate and interact with this popular open-source operating system.



Outcomes:

Participants gained a practical understanding of basic Linux concepts and functionalities.



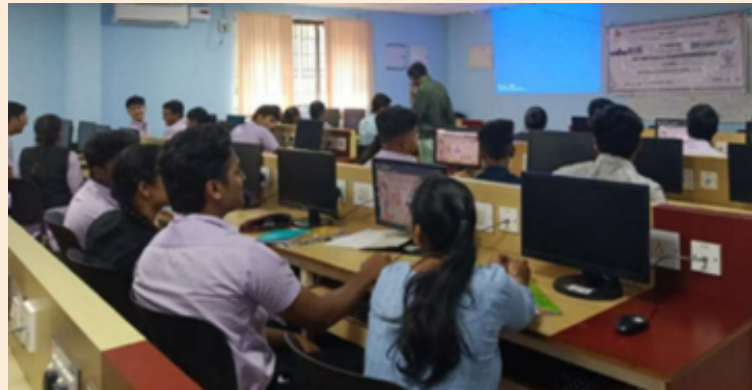
Outcomes:

Participants gained a comprehensive understanding of LinkedIn's functionalities and its potential for their personal and professional goals. They learned how to optimize their profiles and leverage strategies for effective networking and job search.



BASIC OF GITHUB :

This workshop unveiled the wonders of Git and GitHub, empowering participants with the foundational knowledge and skills to navigate this powerful version control platform.



BASIC OF LINKEDIN :

This topic was taken to give basics of linkedin for empowered participants to unlock the full potential of LinkedIn, the worlds largest professional network.

We equipped them with essential strategies and tactics to build a powerful online presence, connect With key people, and leverage LinkedIn for career advancement or business growth.

REPORT ON:

SECURITY INFORMATION AND EVENT MANAGEMENT(SIEM)



What is Cyber Security ?

Cybersecurity is the practice of protecting system ,networks, and programs from digital attacks. These cyber attacks are usually aimed at accessing, changing, or destroying sensitive information; extorting money from users via ransomware ; or interrupting normal business processes

CIATriad:

- 1. Confidentiality:** Confidentiality involves the efforts of an organization to make sure data is kept secret or private.
- 2. Integrity:** Integrity involves making sure your data is trust worthy and free from tampering. The integrity of your data is maintained only if the data is authentic , accurate , and reliable.
- 3. Availability:** Even if data is kept confidential and its integrity maintained , it is often useless unless it is available to those in the organization

What is SIEM ?

Security information and event management ,or SIEM, is a security solution that helps organizations recognize SIEM systems help enterprise security teams detect user behavior anomalies and use artificial intelligence (AI) to automate many of the manual processes associated with threat detection and incident response.



How does SIEM work ?

- Log Management
- Event Correlation and Analytics
- Incident Monitoring and Security Alerts
- Compliance Management and Reporting



What is Splunk ?

Splunk is a software platform that analyzes ,monitors ,searches , and visualizes machine generated data in realtime .Itcaptures ,indexes ,and correlates real-time data in a search able container .Splunk then produces graphs , alerts ,dashboards ,and visualizations.

The benefits of SIEM

- Real-time threat recognition
- AI-driven automation
- Improved organizational efficiency
- Detecting advanced and unknown threats
- Conducting forensic investigations
- Assessing and reporting on compliance
- Monitoring Users and Applications



“Expert Talk On Text Analytics And Natural Language Processing ”

Date:22nd December

Resource Person: Dr. Kavitha K Mahesh Associate Professor, Department of Data Science, PSPH MAHE, Manipal.

Time: 9:00 am to 1:00 pm

Target Audience:

All 7th Semester B.E. Students of CSE. Event Outcomes: Students are able to understand broad approaches of text analytics and its use cases.



Dr. Manjunath Kotari, Professor and Head of the Department of Computer Science and Engineering, provided a brief overview of the significance of acquiring practical knowledge in Big Data applications. He emphasized the relevance of this knowledge in the industry and encouraged the students to make the best use of the opportunity.



The highlights of the talk are listed below.

- 1. Broad approaches of Text Analytics
- 2. Use Cases of Text Analytics
- 3. Various Language models

In the first session the speaker started her talk by highlighting the differences between Natural Language Processing and Text Analytics. She also discussed various applications of text analytics, covering three broad approaches: rule and heuristicbased, machine learning, and deep learning. The first approach of text analytics included a simple example of a chatbot for online purchasing and information extraction from websites.



Technical Workshop

POWER OF GENERATIVE AI IN SOFTWARE DEVELOPMENT LIFE CYCLE

Date: 26th Dec 2023, 10:00AM TO 4:00 PM

Venue: DBMS Lab

Introduction:

The one-day technical workshop on the “Power of Generative AI in Software Development Life Cycle” was held on December 26, 2023. The workshop featured Mr. Krishnaraja Hejamadi, Director at KPMG, Bangalore, as the distinguished speaker. The event aimed to shed light on the transformative role of Generative AI in various phases of the Software Development Life Cycle

(SDLC). The workshop covered a diverse range of topics, providing participants with a comprehensive understanding of Generative AI and its applications in software development. The agenda included:

Features and Uses of New GEN AI:

Mr. Krishnaraja began by discussing the features and applications of New Generation AI, emphasizing its significance in driving innovation and efficiency in software development processes.

AI Terminologies / Models:

The workshop delved into key AI terminologies and models, including Data Mining, Machine Learning (ML), Natural Language Processing (NLP), Predictive Analysis, and Sentiment Analysis. Participants gained insights into the broader AI landscape.



Working of Generative AI with Block Diagram:

A detailed explanation of the working of Generative AI with a block diagram was presented, providing participants with a visual representation of the underlying processes.

Generative AI Images:

Mr. Krishnaraja showcased the capabilities of Generative AI in generating images, illustrating its potential in creative applications within the software development domain.

Hands-On Tools and Platforms:

Participants were actively engaged in hands-on activities using AI tools such as Image Generator and Text Generator available in Deep AI. Mr. Krishnaraja guided students through practical exercises to reinforce their understanding.

Overview of Generative AI Tools/Platforms:

The speaker provided an overview of various Generative AI tools and platforms, including OpenAI GPT, OpenAI DALL-E, OpenAI Codex, Jasper, Jasper, Jasper, Jasper, Jasper, and more. This session allowed participants to explore the vast landscape of available tools.

Comprehensive Expectations for Generative AI Applications:

Mr. Krishnaraja discussed a comprehensive list of expectations for Generative AI applications, considering both sector-specific and functional requirements.



Chat GPT in SDLC:

The workshop included a detailed discussion on Chat GPT and its role in the Software Development Life Cycle. Mr. Krishnaraja provided practical examples of integrating Chat GPT into different phases of SDLC.

Data Acquisition and Interactive Sessions:

A segment on data acquisition was covered, and interactive sessions allowed participants to pose questions and seek clarifications on various aspects of Generative AI and its applications in SDLC.

Importance of the Workshop:

The workshop proved to be a valuable experience for participants, as it offered a holistic view of Generative AI's potential in the Software Development Life Cycle.

Mr. Krishnaraja's expertise and engaging presentation style facilitated a clear understanding of complex concepts, making the workshop accessible to participants with varying levels of expertise.

Feedback and Future Directions:

Participants expressed their appreciation for the workshop's content, practical exercises, and the opportunity to interact directly with an industry expert.

Suggestions for future workshops included more hands-on sessions, in-depth case studies, and exploration of emerging trends in Generative AI.

Conclusion:

The one-day technical workshop on the "Power of Generative AI in Software Development Life Cycle" was a resounding success, providing participants with valuable insights into the application of Generative AI in the software development domain.

The event not only enhanced their understanding of the technology but also inspired them to explore innovative ways to integrate Generative AI into their future projects.

Achievements & Recognitions A.Y 2023-24: Students & Faculty

- Harshika (4AL21CS045) NCC CADET CORPORAL attended Ek Bharath Shrestath Bharath-II at PRTC Torangallu
- Eight of CSE students got an opportunity of working with Live Project of Stellium INC titled “PLC Simulator”.
- Four CSE students attended the INFOTHON – National Level Hackathon at VVCE, Mysore during Jan 2024.
- Four of the CSE students were selected as Finalists in National Level Yi Innovation Contest conducted by YII, Confederation of Indian Industry (CII) held on 18th Nov,2023.
- Four of the CSE students secured 100/100 in Mathematics of VTU 1st Semester Examination.
- Mr.Neerav Patel, 3rd Year CSE selected as UiPath Student Developer Champion, by UiPath Student Developer Program, Oct 2023.
- Mr.Adith P Kotian, secured 2 Gold and 2 Silver Medals in High Jump in Dasara and State Level Junior Athletics meet 2023.
- Dr.Manjunath Kotari , Professor and Head-CSE, recognized as a Reviewer in Elsevier Journal(International Journal of Intelligent Networks) and has completed the review of 9 papers in academic year 2022-23.
- Dr.G.Srinivasan published a Patent titled “FOREST FIRE MONITORING & ALERT SYSTEM EMPLOYING WIRELESS SENSOR NETWORKS” during No 2023
- IEEE Bangalore section whole heartedly appreciates Dr,Manjunath Kotari for outstanding dedication, unwavering support and exceptional leadership as a Branch Counselor during 2023.
- Ms. Reena Lobo, Dept of CSE received the “Certificate of Appreciation” for successfully completing the courses on Infosys Spring Board.
- Dr.Mohideen Badhusha S , successfully completed the NPTEL Course on Data Analytics with Python during Jan-July 2023
- Dr.G.Srinivasan successfully completed the Coursera Course on “Introduction to Python Programming” during July 2023.
- Dr.Manjunath Kotari, published a Scopus Indexed Paper titled “A Novel Framework for Network Based Secure Message Transmission Based on Fragmentation and Cryptography”, DOI: 10.1109/I4C57141.2022.10057754, Publisher: IEEE, March 2023
- Dr.G Srinivasan Published a paper titled “Energy Efficient MAC Protocol With Traffic-Aware Wakeup Scheduling For Iot-WSN” in Scopus indexed journal European Chemical Bulletin(e-ISSN 2063-5346).
- Dr. Arun Anoop M. published a Book Chapter titled “Heart Attack Risk Predictor Using Machine Learning and Proposed IoT-Based Smart Watch Drone Healthcare System”, Book titled Practical Artificial Intelligence for Internet of Medical Things Emerging Trends, Issues, and Challenges, Publisher: CRC Taylor and Francis DOI: 10.1201/9781003315476

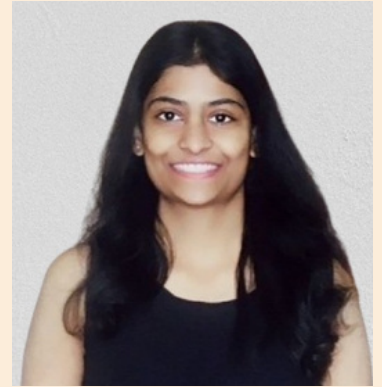
PLACED STUDENT LIST



Punya N



Jayesh L K



Priyarani A G



Likhith C G



Shashank S Poojary



Mohamed Shoab



Shishira s Shetty



Fathimathul Ramzeena



Shama





Khushi V



C Shwetha



Vinay P Hundekar



Ashwini



C Shwetha



Veeresh M



Vedanth V



Priya D B



Shivakumar H M





Usha Rani S

Incture®



Srinidhi C K

Incture®



Toshif Husen Patil

stellium®



K K KOUSHIK

stellium®



Shebin Thomas

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Mohammed Fahiz

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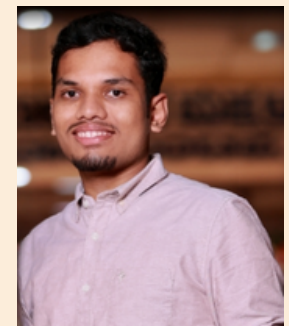
Anu K

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SAHANA G S

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Jayasurya R D

JUEGO Studios



Manish N



Sayeed A R



Hemanth B



Rohini M N



Veena G T



Shreya R



Kavya



Kavya



INSTITUTE VISION

“Transformative education by pursuing excellence in engineering and management through enhancing skills to meet the evolving needs of the community”

INSTITUTE MISSION

- To bestow quality technical education to imbibe knowledge, creativity and ethos to students community.
- To inculcate the best engineering practices through transformative education.
- To develop a knowledgeable individual for a dynamic industrial scenario
- To inculcate research, entrepreneurial skills and human values in order to cater the needs of the society.

PROGRAM SPECIFIC OUTCOMES

A graduate of the Computer Science and Engineering Program will exhibit:

- **PSO1: Professional Skills:** The ability to understand & implement the computer programs in the areas of Computer Architecture, System Software, Database Management Systems, Web Design, Multimedia and Computer Networking.
- **PSO2: Problem-Solving Skills:** The ability to solve real-world problems by suitable mathematical model with strong technological concepts in rapidly growing arena of computer technology.
- **PSO3: Successful Career and Entrepreneurship:** Knowledge in diverse areas of Software Engineering and Management & Entrepreneurship for IT Industry, conducive in cultivating skills for successful career development.

PROGRAM EDUCATION OUTCOMES

- **PEO1:**To provide students with fundamental strength in core disciplines of computer engineering to solve the problems of computing world
- **PEO2:**To ensure that graduates conquer the difficulties of emerging adaptive technological changes.
- **PEO3:**To prepare students for successful career in the industry of international standard.