Kaizen 2K19

INFORMATION TECHNOLOGY DEPARTMENT

The event KIAZEN – 2K19 was celebrated by Information technology Department of the institute with great enthusiasm and support by all faculty members and students. The event was inaugurated with formal welcome and introduction of the juries by the Head of Department, Dr. H.M. Diwanji.

Information Technology focuses on the design of technological information systems, including computing systems, solutions to business, analysis of research data and in communications support needs. It also includes computer software components, algorithms, databases, telecommunications, user tactics, application testing and human interface design. The prime motto was to provide an opportunity and to stimulate students for exchanging ideas, opinions and share experiences and various approaches towards problem solving.

Total **58 UG group** projects of **140 students and 14 individual projects of PG students** were on display. The entire venue was full of students, staff, parents and industry visitors almost throughout the one and half day. The students were very happy to show case their work to all the visitors. The environment had been very vibrant on that day.

This year **Mr.Maulik Shah**, Co-Founder & Director, Ecosmob Pvt.Ltd., **Mr.Anil Srivastava**, Director–(Principal Technical and Business Model Architect) ,Systems Dynamics (Software) Pvt. Ltd. , **Mr.Hemen Ashodia**, Chief Scientistist and Founder,F(x) Data Labs Pvt.Ltd. and **Dr.Ashish Shukla**, Scientist, ISRO had extended their help as juries for the event. All the judges have taken keen interest in observing each and every project of UG and PG students in first round. Final merit was decided by another round of cross observation from each of the panel members before finalizing the winners. The selection criteria of Best Project were based on Technical concept, Presentation layout, Industrial Impact, Corporate Need and Depth of Skill presentation. The judges were delighted to see the overwhelming response of the students.

Kaizen ’19 L. D. College of Engineering 11-12 April 2019

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Judges having Live Interaction with Project Presenters

IT department jury visit to SSIP

Felicitating jury with memento

Under Graduate Winners

First winner (PMMS ID: 52352)

Project Title: **Online Infirmary Consultation & Medication**

Prepared by:

Name	Enrollment no	Contact No.	Email I.D.
Mehta Mansi J.	160283116008	6351231225	mehtamansi395@gmail.com
Patel Jaiminee D.	160283116013	9662279588	jaimineepatel98@gmail.com

Guided by: Prof. Nirjari Desai

These days many hospitals have their own software for data management which is highly priced and it also requires maintenance charges. To solve this problem we have developed a website for hospitals and applications for Laboratories and Pharmacies where they can register themselves and use the provided features like accepting online appointments, upload prescriptions and reports and online management of patient history. We have also developed and application for patient where they can register themselves and book online appointments without standing in long queues or by visiting hospital number of times.

Second winner (PMMS ID: 52350)

Project Title: AUTOMATE

Prepared by:

Name	Enrollment no	Contact No.	Email I.D.
Nidhi Patel	150280116078	7201841391	nftnidhi@gmail.com
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Guided by: Prof Nirjari Desai

This app focuses mainly on various use of camera's. Approximately 936 million users loose their mobile phones yearly. So we decided to work on the secruity where when another user apart from owner if even touches the mobile then a secret photo of that person would be clicked and saved in cloud. Also, we have added features of expression recognition. Also, we have added a gps feature where a user can preinfom mobile to send a text and location to close-ones in dangerous locations indicating help.We provide child safety as well, if a child or even unauthorized user tries to open certain application then mobile phone can indicate it by ringing an alarm. Thus the mobile phone would work as a mate automtically.

We have tried to make your mobile phone more friendly and secure making it your AUTO-MATE (Your personal candid taker and a security-guard).

Third winner (PMMS ID: 42455)

Project Title: Multi-Tenant PAAS(Platform As A Service) Platform Using Kubernetes Container Orchestration Tool

Prepared by:

Name	Enrollment no	Contact No.	Email I.D.
Urvil Patel	150280116087	8140116333	patelurvil38@gmail.com

Guided by: Prof. Ankit C. Patel

In the Era of cloud computing, running workload on virtual machine becomes very easy. But, most of a developer just wasting resources on virtual machine because they not fully utilised their resources like CPU,RAM on virtual machine. Running multiple workload on single machine might introduce some problems like one server might overuse some resources which might starve other processes on same host. To overcomes this issue of resource utilization and security there are a technology in linux kernel called Containers. Container use linux cgroup and namespaces to provides sandbox environment for running workload on single host. **cgroups** (abbreviated from **control groups**) is a Linux kernel feature that limits, accounts for, and isolates the resource usage (CPU, memory, disk I/O, network, etc.) of a collection of processes.**Namespaces** are a feature of the Linux kernel that partitions kernel resources such that one set of processes sees one set of resources while another set of processes sees a different set of resources. Kubernetes is a framework which provides higher level API to manage this containers on multiple hosts. It support features like scheduling of containers on multiple machines and also support load balancing and service discovery. This project consists of creating PAAS platform which support multitenancy (running different users workload on same host using container technology).To interact with this platform it provides an CLI (Command Line Interface).

PG Winner Detail

Thesis Title: Differential NavIC Algorithms for Precise Positioning.

Prepared by: Prarthana Jagat Mehta (170280723008)

Guided by: PROF MADHURI PATEL

India has developed its own satellite based navigation system "NavIC". It is a constellation of GEO and GSO satellites. Satellites transmit signals at L5 band(1176.45 MHz) and S band(2492.028 MHz).NavIC receiver receive this signal and generate carrier phase and code phase measurements. Relative NavIC positioning system is used to cancel common errors such as satellite/receiverclock biases and atmospheric effects. The common approach is to use differential NavIC carrier phase measurem ents to provide centimeter level accuracy. Differential NavIC uses single difference and double difference techniques in order to cancel out common errors. However, carrier phase based differential NavIC positioning requires resolution of Integer Ambiguity(IA) and is sensitive to cycle slip. In order to resolve integer ambiguity many algorithms have been developed. In order to resolve integer ambiguity and achieving centimeter level accuracy she will going to developed an algorithm that can be used for post processing as well as real time mode. Post processing algorithms may find application in areas such as survey and land records. Whereas real time algorithms can be used to develop Real-Time-Kinematic(RTK) receivers. In this report, absolute code-phase measurements are used to resolve integer ambiguity in L5 and L1 carrier-phase measurements. Data was collected by Accord receivers on 02-Septemeber- 2018 for 24-hours at SAC, Ahmedabad, India. Double-differenced pseudorange & carrier- phase measurements of base & rover receivers were used for study. An extended Kalman Filter (EKF) was developed and implemented in C on double differenced data. RMS-3D errors for NavIC with 7 satellites, GPS and Hybrid(NavIC + GPS) 39cm,13,22 and 14 cm were achieved respectively.