e-cell | NIRMA UNIVERSITY

PRESENTS

SMART INDIA HACKATHON 2020

Date : 18th Jan, 2020

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REGISTRATIONS OPEN

PROBLEM STATEMENTS RELEASED!

For eligibility & registration, visit : **www.sih.gov.in**

Smart India Hackathon

Date: January 18, 2020
Smart India Hackathon is a nationwide initiative by MHRD, GOI to provide a platform to technology students to come up with innovative solutions to pressing problems stated by several companies, thus inculcating a culture of product innovation and a mindset of problem-solving.

The campus preliminary round for the Smart India Hackathon was conducted on 18th January 2020. This provided an excellent platform to students to solve many existing issues in the current working system, with viable options: the brainchild of technology.

The teams were given 4 minutes to explain their idea to the problem stated followed by questions regarding viability and feasibility of the product by the jury.

SIH - Software Edition

Venue. B Auditorium, Institute of Technology, Nirma University

In the software edition of Smart India Hackathon, technology student-teams from various fields came up with innovative ideas, in order to solve the problem statements as listed on the official website of Smart India Hackathon.

There were a total of 25 teams who took part in Software Edition of SIH 2020, from ITNU. They came up with great ideas, solving current issues of various interests ranging from farming to traffic control, using a variety of current technological advances such as AI and ML.

The software edition was conducted in two phases, morning and afternoon schedule. After the registration process, teams were briefed about the competition and guidelines to be followed. Later, the teams started with their presentation of the idea to the judges, where order of the presentation by the teams was selected at random. The jury comprised of 2 judges: Mr. Pratik Patel, CEO and co-founder, Yudiz Solutions and Mr. Virang Mankad, Chief Sales & Marketing Officer, Amnex Infotechnologies. The jury gave useful feedback to the teams, also asking them questions regarding various probable, industry-relevant, real-life issues that their solutions might be vulnerable to. Hence, giving critical feedback to the teams giving them a chance and direction to improve and excel in the future. The jury shared their experience with the teams and ideas.

Director, ITNU

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R. I. Shah..
Co-ordinator,
Centre for Entrepreneurship

Jury giving their views to the team and questionnaire session

After a healthy competition amongst the 25 teams, the jury selected 5 teams for the further round of SIH, software edition, 2020 from ITNU. Those were as follows:-

Matroid -

- Problem Statement: A Mobile-based Dwell time Management System using IoT
- Solution: Developing an app to reduce dwell time at all security check-in points and improve workforce allocation. Passenger will scan the barcode on the ticket when he/she enters a line in a way similar to the system present in subways. As per the severity of the situation, officials and supervisors will be informed; this occurs as per two escalation matrices.

Scramblers -

- Problem Statement: Blind Scrambling Code Identification
- Solution: Determining scrambler polynomial using Cluzeau's algorithm

Insiders -

- Problem Statement: Indoor Navigation App (DRDO)
- Solution: Indoor Navigation using access points, RSSI (Received Signal Strength Index), Machine Learning and fingerprinting for positioning, Augmented Reality technology.

Blitzkrieg -

- Problem Statement: Enhancing Mental Health counseling via Emotion Recognition from Electroencephalography using machine learning and neural networks
- Solution: Using Emotiv epoc Neuro headset for recording EEG signals of different participants and Neural Models for classification, proposed a product that comprises of a display that keeps informing the professional what the subject is feeling in real-time, along with the subject's attention levels to ensure the professional can approach the situation in the best way possible, while also ensuring the best treatment for the subject.

Tensor -

- Problem Statement 1(Agricultural and Rural Development): Combating crop diseases by analysis of farm field and health of crops in less time and effort, increasing productivity.
  - Solution: Applying ML to fields, using drone technology and GPS mapping
- Problem Statement 2 (ISRO): Cloud movement prediction for weather forecast detect
  - Solution: Ding clouds using deep learning algorithms, Image segmentation model Faster RCNN. Predicting cloud movements for the next time frame. The cloud movement prediction task is accomplished using GAN (Generative Adversarial Network)s and LSTM (Long Short Term Memory) based architectures.

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SIH - Hardware Edition

Venue: D block, Institute of Technology, Nirma University

In the Hardware edition of Smart India Hackathon, the students well-versed with technology formed a team of 6 members of various engineering fields and worked together on the problem.

There were 7 student-teams who took part in Hardware Edition of SIH 2020, from ITNU. Out of these 7 teams, the jury selected the top 2 teams on the basis of various criteria like innovation, feasibility, teamwork, prototype presentation, etc.

The hardware edition started along with software edition where teams were registered and briefed about the competition. All the teams pitched their ideas to the jury. The jury comprised of 2 judges: Mr. Nirat Patel, co-founder of Vendaxo Pvt. Ltd. and Mr. Dhaval Shah, the director at Nessa Illuminations Technologies. Having a boatload of experience in the industry, they gave their critical feedback to the teams helping them improve and excel in the future. The jury shared their experience with the teams and ideas.

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Pitching session

After pitching and questionnaire round, the results were announced. The following two teams were selected for the further round of SIH, hardware edition, 2020 from ITNU.

Aquaman -

- Problem Statement: Artificial intelligence-enabled robotic trash boat to drive and harvest floating trash from the urban drain
- Solution: Their idea is to use a motor to run the boat and drain the impeller to save resources. As soon as it detects garbage, the boat will go there and then the motor will disengage from the boat impeller and will then engage the drain impeller to suck the water. Thus, the trash will be collected from the water surface using artificial intelligence-enabled IoT.

Stallions -

- Problem Statement: Smart Management of Street lights for Energy Conservation
- Solution: They propose an autonomous-distributed-controlled light system, in which the lights turn on before pedestrians come and turn off or reduce power when there is no one by means of a distributed-installed sensor network. A Sensor unit consisting of a motion sensor, the communication device, and the controller sends out the message to other units under the condition that motion is detected which will ensure that the street lights

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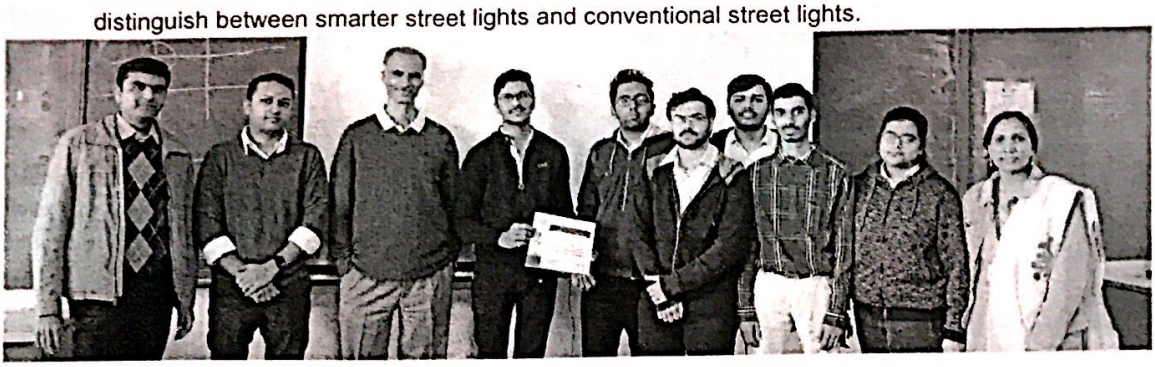
are turned on before the pedestrians or drivers notice, hence it becomes difficult to distinguish between smarter street lights and conventional street lights.



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