ACADEMIC YEAR

2020-21

IES College of Engineering

Best Practices
Academic Year 2020-21

Practice 1:

1. Title of the Practice:

"Student chapters for MOOC Courses"

2. Objective of the practice

- A MOOC is an online course with the option of free and open registration, a publicly-shared curriculum, and open-ended outcomes.
- MOOCs integrate social networking, accessible online resources, and are facilitated by leading practitioners in the field of study.
- Most significantly, MOOCs build on the engagement of learners who self-organize their participation according to learning goals, prior knowledge and skills, and common interests.
- They made progress with the higher-level outcomes of applying knowledge to other situations and synthesizing information.

3. Context

- The common duration of a MOOC is from 6 to 12 weeks. A MOOC is accessible 24 hours a day, 7 days a week. The majority of the content is delivered asynchronously (meaning students can access it in their own time and at their own pace). However, sometimes there can be optional synchronous events such as 'live' webinars (interactive sessions) which require participants to join in at specific dates/times.

- A standard class becomes in a MOOC a set of videos of 5-10 minutes each.

- The learning of students in a MOOC is usually assessed by multiple-choice questions.

- An important component of MOOCs is assignments. Student have to upload assignment solutions into the MOOC platform. Assignments can be evaluated and graded:

- Automatically when possible.

- Peer-to-peer: students evaluate and grade themselves.
- Another component is the forum, where students post questions that other students can answer.

- Usually, there are no pre-requisites for taking a MOOC, apart from having access to a computer with an internet connection. Most of the time, the educational or academic background of students isn't important.

- Students usually don't need to buy any books for these courses, because all reading is either be provided within the MOOC content or is linked to open access texts.

4.The practice and the Evidence of Success

Two Students chapters were started in IESCE for the benefits of the students

1. Swayam NPTEL Student Chapter during March 2019
    a. SWAYAM is a programme initiated by Government of India and designed to achieve the three cardinal principles of Education Policy viz., access, equity and quality. The objective of this effort is to take the best teaching learning resources to all, including the most disadvantaged. SWAYAM seeks to bridge the digital divide for students who have hitherto remained untouched by the digital revolution and have not been able to join the mainstream of the knowledge economy.

    b. This is done through a platform that facilitates hosting of all the courses, taught in classrooms from Class 9 till post-graduation to be accessed by anyone, anywhere at any time. All the courses are interactive, prepared by the best teachers in the country and are available, free of cost to any learner. More than 1,000 specially chosen faculty and teachers from across the country have participated in preparing these courses.

    c. The courses hosted on SWAYAM are in 4 quadrants – (1) video lecture, (2) specially prepared reading material that can be downloaded/printed (3) self-assessment tests through tests and quizzes and (4) an online discussion forum for clearing the doubts. Steps have been taken to enrich the learning experience by using audio-video and multi-media and state of the art pedagogy / technology.

    d. Enrolment: more than 450 enrolments has been done and many have got their certification too, Special certification like "elite" certificates were seen in all the batches. Some sample certificates are attached below

Elite

NPTEL Online Certification

(Funded by the Ministry of HRD, Govt. of India)

This certificate is awarded to

JOVIAL JOE JAYARSON

for successfully completing the course

The Joy of Computing Using Python

with a consolidated score of **88** %

Online Assignments	24.75/25	Programming Exam	25/25	Proctored Exam	38/50

Total number of candidates certified in this course: **8505**

Devendra Jalihal

Prof. Devendra Jalihal
Director
Centre for Outreach Education, IITM

Jul-Oct 2019
(12 week course)

Prof. Andrew Thangaraj
NPTEL Coordinator
IIT Madras

Indian Institute of Technology Madras

swayam

Elite

NPTEL Online Certification

(Funded by the Ministry of HRD, Govt. of India)

This certificate is awarded to

ROHIT G NAIR

for successfully completing the course

Real Time Operating System

with a consolidated score of **75** %

Online Assignments	16.67/25	Proctored Exam	58.16/75

Total number of candidates certified in this course: **26**

Prof. G P Raja Sekhar
Dept. Computer Science
IIT Kharagpur

Feb-Mar 2020
(4 week course)

Prof. Debjani Chakraborty
Coordinator, NPTEL
IIT Kharagpur

Indian Institute of Technology Kharagpur

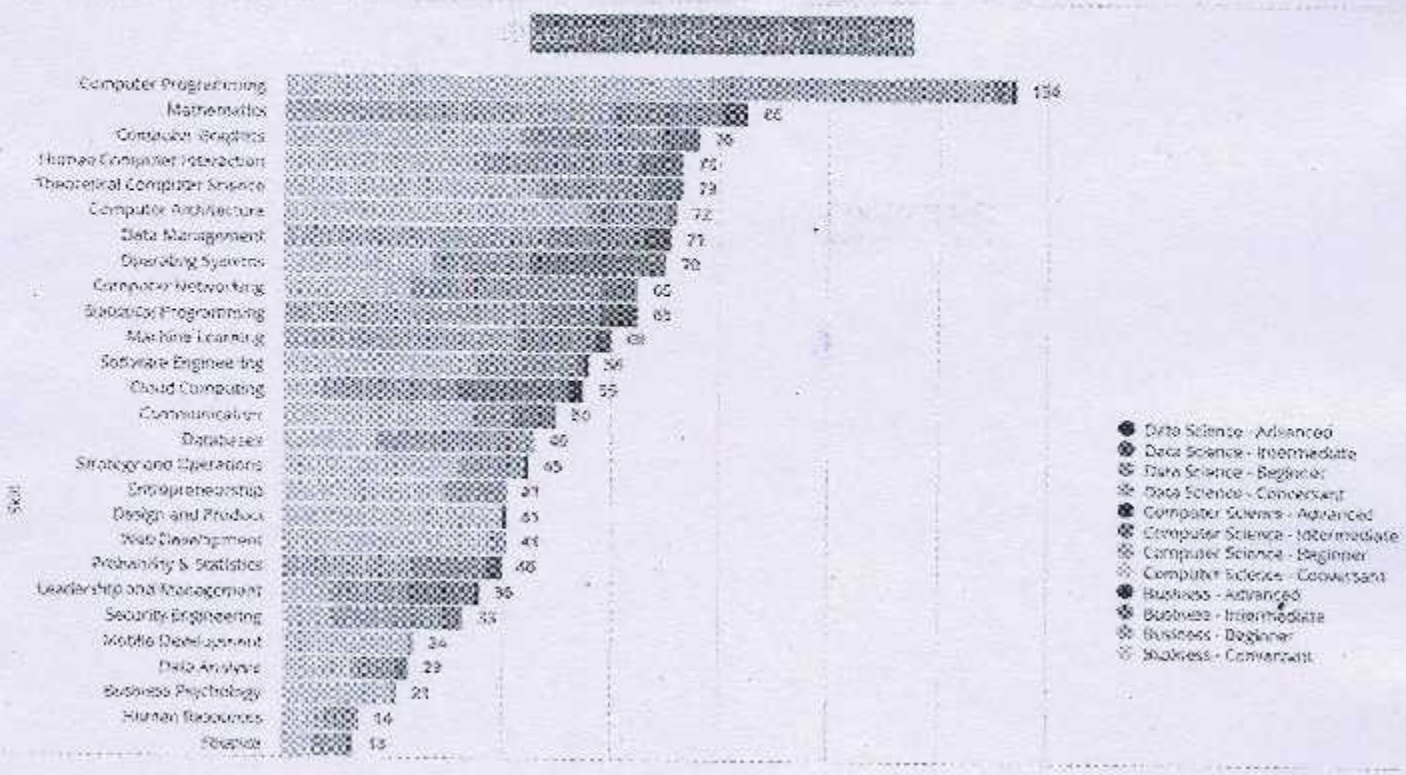
swayam

5. Coursera Student Chapter during March 2020

Coursera student chapter in IESCE was started during 2020, which helped the students a lot during the lockdown period. Coursera Inc is a U.S.-based massive open online course provider founded in 2012 by Stanford University computer science professors Andrew Ng and Daphne Koller. Coursera works with universities and other organizations to offer online courses, certifications, and degrees in a variety of subjects.

Enrolments:

More than 1700 Enrolments in various subjects were seen for the past 2 years. It was properly utilized and those certificates helped the final year students a lot during their interviews.



6. Challenges

- During Lockdown students those who doesn't have proper electronic gadgets were not able to utilize this opportunity.
- Internet Issues
- Student chapter was given free for only 1 year then some charge was imposed so financially backward students found it difficult.

Practice II:

1. **Title of the Practice:**

   "Product development for addressing covid related issues"

2. **Objective of the practice:**

   The objective of the practice is to develop useful products by which we can fight against the Covid-19.

3. **Context:**

   - To create awareness regarding covid spread.
   - To spread the importance of maintaining covid protocols.
   - To help doctors in fighting against the Covid crisis.

4. **The Practice**

   IESCE Students have developed two major inventions namely
   1. HABLOSAN (TALKING SANITIZER)
   2. AZIMA ALTRA ROBO

1. HABLOSAN (TALKING SANITIZER)

Components Required

Ultrasound Sensor, IR sensor, Relay module, Voice module, DC Motor

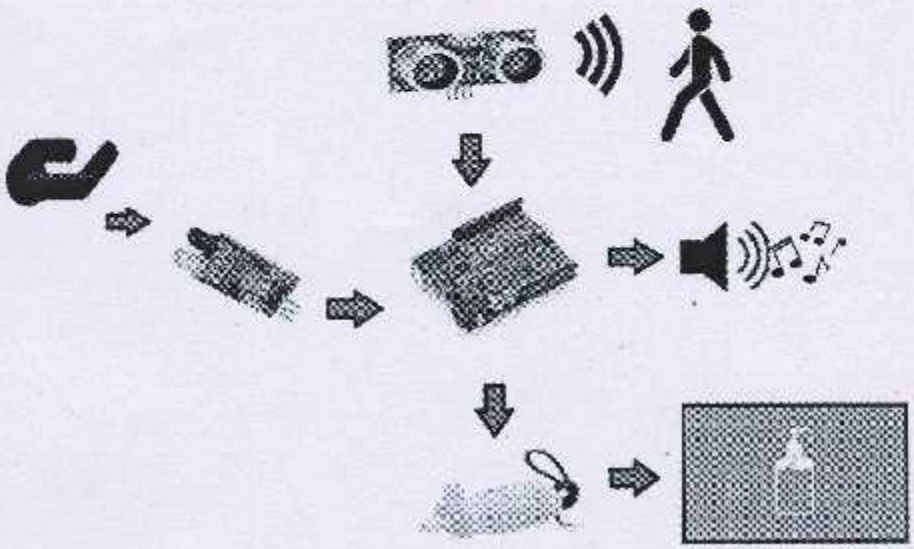
Working

- ultrasonic sensor detects the movement within 1 meter.
- when movement detected sends a signal to the controller
- controller sends a signal to the voice playing module to play the reminder voice recordings
- when IR sensor gets triggered it sends a signal to controller
- controller turns on the motor for 1seconds

Aim

- To get contactless sanitizer dispensing
- Automatic Working
- Reminder for sanitizing

Block Diagram



2. AZIMA ALTRA ROBO

Robotic nurses are robots that help patients physically move around or perform simple tasks like taking vital signs or delivering medicine.

Some robotic nurses serve as interfaces for doctors to use over distances to communicate with patients.

Robots in medicine help by relieving medical personnel from routine tasks, that take their time away from more

pressing responsibilities, and by making medical

procedures safer and less costly for patients.

They can also be used for transporting hazardous medical drugs.

Abstract

From a view through emerging technologies, it is necessary to create a revolution in the medical sector. Day by day the number of diseases and pathogens are increasing, lack of efficient nurses in those emergency situations are the reason behind the innovation of this project.

In an emergency scenario like a pandemic there is an urgent requirement to develop and implement something that can make up for the lack of efficient nurses in the field. The project is mainly concerned on checking the vital signs of patients like heartbeat, blood pressure, Electro-cardio Graph (ECG) and reports it to the concerned physician.

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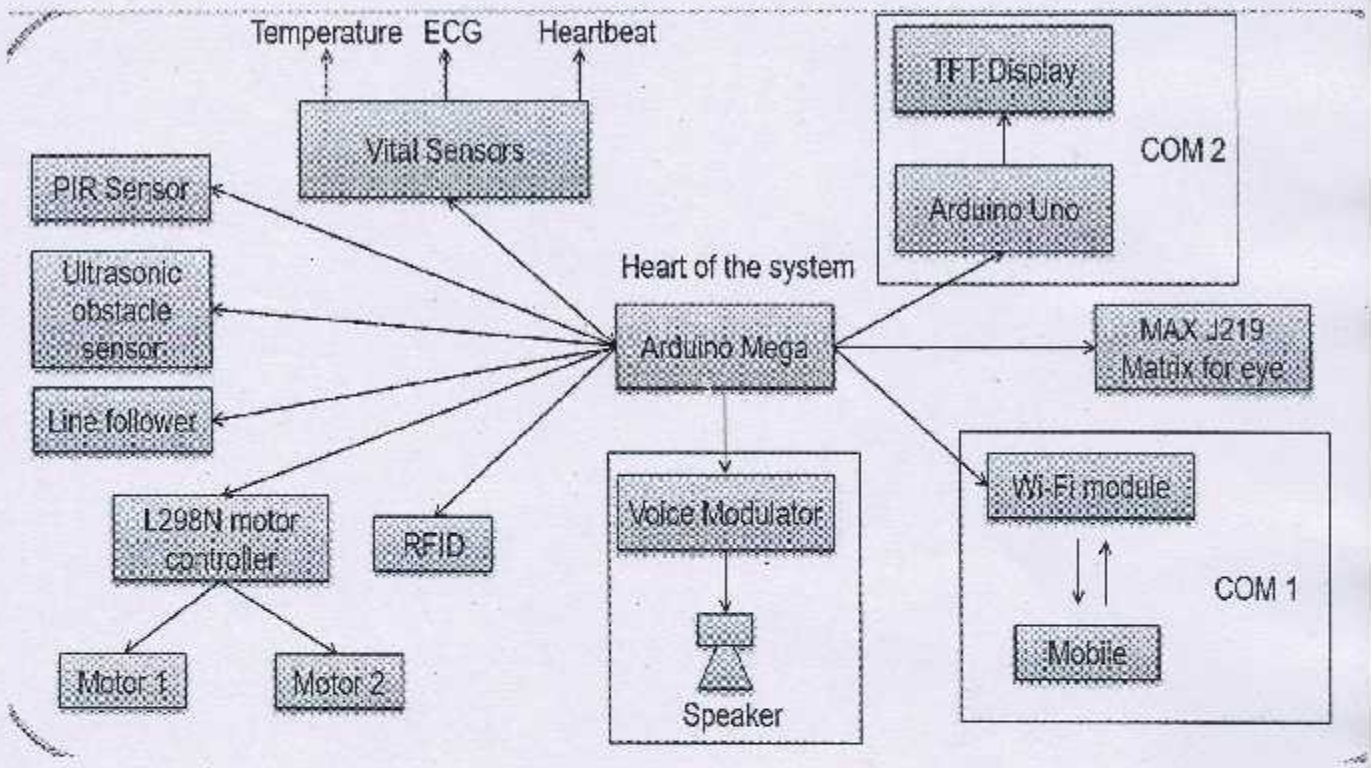

5. Evidence of Success

- The implementation of the robot in hospitals helps to reduces the human contact with isolated patients having contagious diseases.
- The robot helps in reducing and controlling the spread of a contagious disease in the time of a pandemic like Covid- 19 (corona virus).
- The vital readings taken of the patient by the robot is instantly send to the doctor in the cabin so the doctor can keep a real-time tab on the patient.

6. Future Scope

- The future versions of our robot can be more humanoid and interactive.
- This robot may also be used in other fields like chemical industry to minimize the human contact with toxic chemicals and hazardous materials.
- More humanoid and advanced robots can be used to assist doctors in treating injured soldiers and civilians at the time of a war.

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