KARNATAKA STATE COUNCIL FOR SCIENCE AND TECHNOLOGY
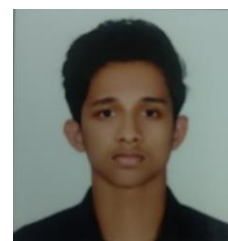
Indian Institute of Science campus, Bengaluru

FORMAT FOR STUDENT PROJECT PROPOSAL FOR THE

44th SERIES OF STUDENT PROJECT PROGRAMME

(Hand written proposals will not be accepted, please fill all the details in this MS word file as per the following format. Kindly take a photocopy of completely filled project proposal and Demand Draft for filling up the Google Forms.)

https://forms.gle/yqSYxZRP6uJsP5QA8

Name of the College: NEW HORIZON COLLEGE OF ENGINEERING

Project Title: Smart mirror using Raspberry Pi

Branch: ELECTRICAL AND ELECTRONICS

Theme (as per KSCST poster): User friendly devices for aged or physically challenged people

Name(s) of project guide(s):

Name: Mr. Vinod Kumar S
Email id: vinosvinothkumar@gmail.com
Contact No.:+91 9751015185

Name of Team Members (Strictly not more than four students in a batch):
(Type names in Capital Letters as provided in your college)
(Please paste the latest passport size photograph adjacent to your respective names)

Name: BHARATH SURYA
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Mobile No: 7022480916
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Name: KAVITA SAH
USN No.: 1NH17EE718
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Name: Raksha S.
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Mobile No.: 9106572004
Email id: raksha303910@gmail.com

Name: SHAUN JOHN
USN No.: 1NH17EE748
Mobile No.: 7619425493
Email id: johnshaun230@gmail.com

Team Leader of the Project:

 Name: SHAUN JOHN
 USN No.: 1NH17EE748
 Email id: johnshaun230@gmail.com
 Mobile No.: 7619425493

Processing Fee Details (Demand Draft should be drawn from Canara Bank / State Bank of India only):
(processing fee of Rs. 1000/- drawn in favor of Secretary, KSCST, Bangalore – 12)
 Demand Draft No.:

 Date:

 Bank name:

Note: Please write Team leader name, Contact No., Project Title and Name of the College on the backside of the DD.
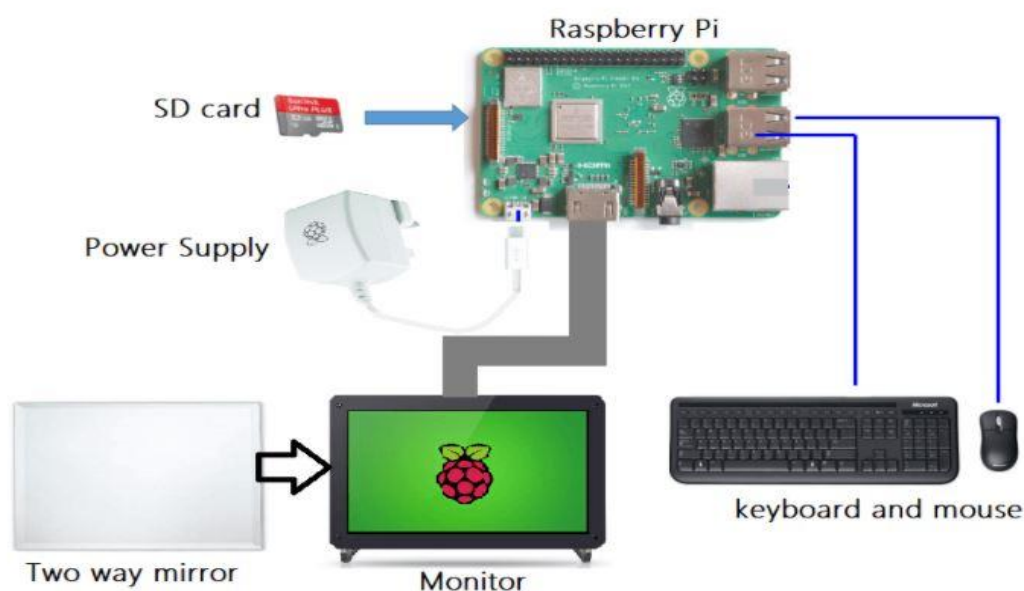
Date of commencement of the Project: 18/10/2020

Probable date of completion of the project: 15/04/2020

Scope / Objectives of the project:

The goal of the smart mirror is to provide an access point for a person to receive all the information that could affect how they plan for the day. For getting news updates and weather updates, a person will always have to switch on the television which is time consuming. To get rid of these problems, the concept of smart mirror is introduced. All the necessary information like weather and news can be accessed from one location. The problem of a secured user authentication technique can also be corrected by this system. Through the use of LCD displays and a one-way mirror, weather, time and date, news, and other useful information programmable through the smart mirror app would be available at a glance.

Methodology:

The proposed system is to design an interactive futuristic smart mirror with artificial intelligence using Raspberry Pi. In the proposed system, the ability of the system to recognize face and provide details of the same, incorporates the theory of artificial intelligence. Interactive computing, with wirelessly connected embedded devices that are being used in various day– to–day activities. Based on this technology, many devices/products are now emerging and with this intelligence it is providing comfortable, secure and convenient personal services everywhere. The project aims at creating a smart system for users where it detects face using OpenCV. The mirror will recognize user's face and it will be processed using Raspberry Pi and display user's feeds. User's image will be stored in database.

For server to device connectivity we are using IOT platform. IOT offers some important parameters for communication to be established between devices which are device registry, data ingestion, message routing, storage and stream, analysis. These parameters give ease for business intelligence, command control, admin and management and better user experience in day to day work. Basically, IOT offers two types of devices - Field gateway and cloud gateway. Field gateway consists of non-IP devices, e.g. SCADA-RTU, PLC, etc. Cloud gateway allows devices having proxy, e.g. ZigBee, etc. Two types of commands are available in IOT- Device to Cloud and Cloud to Device.

It works as a normal reflective mirror so that the user can use it as a regular mirror. The two-way mirror acts both as a reflective surface as well as transparent to display the updates. Everyone using this mirror will get real time updates. User will be able to give commands to the mirror using the microphone in the raspberry pi for appliances control.

Note: In case of fabrication work in the project, an engineering drawing with dimensions / detailed design should be attached to the proposal.

Furthermore, in the course of the project the team is looking forward to inculcate AI components for facial recognition and speech to text vice-versa so that it allows the user to interact with the mirror. Conversion is not only it a smart but a self-thinking, self-taught mirror which satisfies a basic set oof requirement for the user.

Expected Outcome of the project:
- The output of the Smart Mirror has a black output screen which displays weather, news and time. The top right corner of the screen displays time which is present in the Raspberry Pi. It makes use the calendar for displaying the day and date along with time.
- Weather condition update changes every hour and is displayed on the screen if there is a change in temperature else the temperature remains unchanged.
- Complete understanding of user command and necessary action for the same
- Face recognition at a rate above 75% or so

Is the project proposed relevant to the Industry / Society or Institution?

Yes / No: NO

If Yes, please provide details of the Industry / institution and contact details:

(**Note:** Preference will be given to those projects relevant to the industry / institution. Hence be specific in giving detailed information). Is the industry extending support - technology / funds / use the final product, please specify?

Can the product or process developed in the project be taken up for filing a Patent?
Yes / No: YES

Prior Art search done?
Yes/No:
Note: If Yes, you may contact Patent Information Centre of KSCST for more details
Email: patent@kscst.iisc.ernet.in

Budget details (break-up details should be given) :
Note: KSCST will provide nominal grant support for carrying out the project by students if selected by the project selection committee.

Budget	Amount
a) Materials / Consumables	10000.00
b) Labor	0.00
c) Travel	1000.00
d) Report	500.00
e) Miscellaneous	1500.00
Total	13000.00

Any other technical details (Please specify): NA

SPP Coordinator (Identified by the college) :
Note: To be identified by the principal of the institution. The project proposals must be submitted to KSCST through SPP coordinator designated by the Principal.

Name : Prof. / Dr. / Mr. / Mrs.

Email id :

Contact No. :

(Name &Signature of Project Guide with Seal)   **(Name &Signature of HOD with Seal)**

Email id: **Email id:**

Contact No.:   **Contact No.:**

DECLARATION
(From Project Students)

We, the project team hereby declare that the details enclosed in the project proposal are true and correct to the best of our knowledge and belief and we undertake to inform KSCST of any changes therein in the project tile, students name will be intimated immediately. In case any of the above information is found to be false or untrue or misleading, we are aware that we may be held liable for it. We hereby authorize sharing of the project information with this project proposal with the Karnataka State Council for Science and Technology, Bangalore.

We are aware that the project team has to exhibit / demonstrate the project in the nodal centre and interact regarding project with the experts and to exhibit the project in the State Level Seminar and Exhibition (if selected). If the student team fails to attend the evaluation in nodal centre or fails to attend the State Level Seminar and Exhibition, the supported project amount will be returned back to KSCST.

We also hereby, enclose the endorsement form to KSCST, Bengaluru.

Name of the students   **Signature with date**

1. BHARAT SURYA

2. KAVITA SAH

3. RAKSHA S

4. SHAUN JOHN

ENDORSEMENT

(From College, endorsement to be taken in the institution / Department Letter head)

This is to certify that 1) Mr. / Ms…….................., 2) Mr. / Ms. …………….............. 3) Mr. / Ms. ……………….............., 4) Mr. / Ms. …………………............., are bonafide student(s) of Department of ...., in the degree program of our institution. If the project proposal submitted by these students under the 44th series of Student Project Programme is selected by KSCST, we will provide the requisite laboratory / Computer / infrastructure support in our college / Institution. Further we also take necessary steps to see that the project team will exhibit / demonstrate their project in the nodal centre and in the State Level Seminar and Exhibition (if selected). If the student team fails to send the completed project report or fails to attend the evaluation in nodal centre or fails to attend the State Level Seminar and Exhibition, the supported project amount will be returned back to KSCST.

(Name & Signature of Project Guide with Seal)　　**(Signature of HOD with Seal)**　　**(Signature of the Principal with Seal)**

Email id:　　　　　　　　　　**Email id:**　　　　　　　　　　**Email id:**

Contact No.:　　　　　　　　**Contact No.:**　　　　　　　　**Contact No.:**