PROJECT CELL

ACHIEVEMENTS

E-YANTRA IDEAS COMPETITION WINNER

- ## Pani Puri /Dahi Puri Vending Machine(Best HardWare Category 2019)

User will put 10rs coin then the coin will be Inspected on the basis of metal and type , Image Processing is   used for coin detection. Further two switch will be activated giving option for either Pani Puri or Dahi puri and option of Varying Chutneys is given. Using Machine Learning how much more puri can be filled from the container is predicted.

- ## Autonomous Shopping Robot(Most Innovative Award 2016)

 Customer will register on website named skita(made by the team) then the user will create list of products they want to purchase. This list is then sent to the bot , the bot will go around the supermarket and collect the items in the list after completing it will notify the user to collect the items from the bag

Problem Statement

- <u>Self Balanced Walking Machine controlled by brain Signal for Specially Abled people(Eyantra Ideas Competition)</u>

  This project will help paralyzed people or people having Difficulties to walk , being able to walk again with the help of Brain Signals. And detecting Missed object by Image Processing.

- <u>Plastic Recycling Machine(Eyantra Ideas Competition)</u>

  Reverse vending machine to recycle waste plastic bottles and convert it into 3d printer filament in a single unit

- <u>Build a line following robot implementing path planning and wall following algorithm to pick and place construction materials at disaster affected areas.(Eyantra Robotics Competition)</u>

Competition Details

- ***<u>E-Yantra Ideas Competition:-</u>****e-Yantra Ideas Competition (eYIC) is a competition to encourage innovative projects from robotics labs set up through the e-Yantra Lab Setup Initiative (eLSI) in colleges across the country.*

- ***<u>E-Yantra Robotics Competition:-</u>****e-Yantra Robotics Competition (eYRC) is a unique annual competition for undergraduate students in Engineering/ Science/ Polytechnic colleges. The competition has evolved over the years to include more number of teams by introducing different Tracks in the competition.*

Money Requirements

Self balanced Walking machine

Head	Quantity	In Rupees
EMOTIV Insight 5 Channel Mobile EEG	1	21,220
100kg + 50kg Torque DC Motors	2 + 2	2000×2+1000×2= 4000
10A Motor Driver Shield – MD10	4	1560×4 = 6240
Metal Fabrication	-	20,000
Raspberry pi + Arduino Mega	2+1	5000×2+850= 10,850
RaspberryPI RPI-CAM-V2 Camera Module	1	2200
	Total	64510/-

Plastic recycling machine

Sr. No.	Head	In Rupees
1.	AC induction single phase Motor(2HP,2500RPM),AC induction single phase Motor(1HP,2000RPM),100:1 Reduction Gear box	7500+6000+3000
2.	Laser Cut Metal sheets and blades,Nuts and Bolts,Acrylic Sheet(transparent and opaque)	18000 + 1500 + 5000+3000
3.	Graphical User Interface(GUI):7 inch TFT LCD display+TFT shield +Arduino Mega	8000+800
4.	Filtering Mechanism:Filter +Centrifugal Water pump(x3)+pipes+nozzles(x2)	1500+3000+1000+1850
5.	Microcontroller(8051)+Arduino UNO/Mega(x6)+Sensors(inductive switch,capacitive switch,Ultrasonic,Camera (OV7670)module) +Thermocouple(x2)+Ceramic-Mica Band heater(x4)+10 kg-cm Stepper (x2)	500+5500+3000+1500+5200 +3000
6.	Books & peripheral	2000
7.	Contingency	1000
8.	Travel	2000
	Total	83,850/-

Work Completed

- ## Self Balanced Walking Machine

1.   Motor Torque Calculation

2.   Dynamic Breaking Circuit Implemented

3.   Using Emotiv Epoc Insight to detect EEG signal

3.   Basic Design

4.   Basic PID control tried in order to control PWM of Motors Dynamically

- ## Plastic Recycling Machine

- CAD design ready

- Temperature control circuit is made

Thank You