

## **Automatic car washing system using PLC**

### **Name of Students**

Mr.Suraj Chandrakant Harekar

Mr.Shubham Sambhaji Narvekar

Mr.Shubham Parag Shetye

Mr.Prajit Jitendra Patel

### **Under the Guidance of**

Mr.Satish Ghorpade

Ms.Priti Sathe

**Abstract:** - Automation is a need of time. Today in this modern era automation helps us to save time, cost as well as manpower. Vehicles are used extensively for transportation. It is also important to have easy and effective system for maintaining the vehicles cleanliness. Our project focuses on car washing system using PLC. Car washing can be done at spaces where cars can be parked for a long time and washing car can be done easily like fuel filling stations, super markets, hospitals, government buildings, railway stations etc. Car washing system has three main processes namely washing, cleaning and drying, hence the exterior of the car will be washed by detecting the car on conveyor belt and further controlled by PLC.

## **Betel Nut Cutting Robot**

### **Name of students**

Mr.Avdhut Abhyankar

Ms. Siddhika Bhatkar

Ms. Prajakta Kadam

Mr.Shaibaz Sayyad

### **Under the Guidance of**

Mr.Santosh Kumar Hunachal

Ms.Ramadevi Rudra

**Abstract:** - The main goal of the project is to design low cost betel nut tree climbing and harvesting robot for farmers and residents. It's seen difficult to climb on betel nut tree manually due to the constant cylindrical structure and single stem. A professional climber and cutter with proper training only are able to climb betel nut tree. To avoid this risk a betel cutter is required without man. Considering this scenario, a robot is required which helps the user to climb betel nut tree and cutting the betel nut easily. To meet this objectives, a betel nut cutting robot has been developed with Arduino MEGA and designed prototype model worked adequately.

## **Design of DC- DC Boost Converter**

### **Name of students**

Mr. Vikram Laxman Gonbare

Mr. Dinesh Vinod Londhe

Mr. Siddesh Anant Mhadeshwar

Mr. Suraj Dipak Pansare

### **Under the Guidance of**

Mr.Santosh Kumar Hunachal

Mr.P.R .Shankar

**Abstract:** - DC–DC power supplies are playing significant role in different domains of engineering applications. In now a day, the application of DC-DC converter exponentially increases. Step-up dc–dc topologies convert lower dc voltage levels to higher levels by temporarily storing the input energy and then releasing it into the output at a higher voltage level. The boost converter circuit is designed by using MOSFET switch, Resistor, Capacitor, Inductor and Diode. The key principle that drives the boost converter is the tendency of an inductor to resist changes in current. The converter performance is depends on the load voltage, currents in capacitor and inductor, ripple of voltages and currents, etc. The power stage performs the conversion from input voltage to the output voltage and includes switch and output filter.

In nowadays, the use of dc-dc boost converter is exponentially increases such as starting from mobile charger to aerospace power supply system. Therefore we go for designing of boost converter.

## **Iot Basd Auto Cut-Off Power Charger**

### **Name of students**

Mr.Swamin Sanjay Bhosale  
Mr. Shraddha Vikas Lad  
Mr.Sudin Rama Vayangankar  
Mr. Raturaj Ram Remje

### **Under the Guidance of**

Mr. Satish N. Ghorpade  
Mr.Yogesh Y. Katdare

**Abstract:** - Increase in the production of various electronic gadgets day by day, increases the demand of power chargers. The issue with present day chargers is that they charge the devices even after battery of the device is fully charged. This leads to degradation of battery life of any device. Also, it dissipates much power which is a loss in the system. To overcome the above issues, a novel auto cut-off power charger is proposed in this work. The proposed smart electronic device, which has sensors, software programmed controllers and network ports which enable to collect connected device's power level and the collected information is used to track the power level of the device. Moreover, the device can be cut off from the charger thereby avoids overcharging of the battery and improves the performance of the device.

## **Self-excited induction generator**

### **Name of students**

Mr.Sanket Kale  
Mr.Bhushan Khandzode  
Mr.Gaurav Nafe  
Mr.Rajat Shirgaokar

### **Under the Guidance of**

Mr. Santoshkumar M. Hunachal

**Abstract:** Pico-hydro generation system is the effective way to help the remote communities by generates electricity using water as a main source. The main objective of this project is to introduce the single phase induction machine act as a self-excited generator and coupled with Pico hydro turbine system by using irrigation water as a main source. Water flow in the high pressure PVC pipe has potential to drive the turbine where it is connected with a generator to convert mechanical energy to electrical energy. A suitable value of capacitors is required to meet the desired voltage and frequency as per load demand.

## **Smart Kit for Leg Movement**

### **Name of students**

Mr.Ketan Ramesh Adamkar  
Ms.Sheetal Nandkumar Deorukhkar  
Ms.Pankaja Maruti Jadhav  
Mr.Rahul Shyam Yadav

### **Under the Guidance of**

- Mr.RatnadeepKeer

**Abstract:** - The purpose of 'Smart Kit for Leg Movement' project is to design and construct 'Smart Kit of Smart kit for leg movement machine'. In this report we have made calculations regarding project requirements. So that the outcome of the machine will be the most effective preventive tool to avoid major complications in bedridden patients due to blood clots. This kit mainly consists of ankle moving arrangement and pneumatic arrangement. Both the arrangements have different roles to contribute. Ankle exercise is very important for Paraplegic patient, Hemiplegia Patients, Pregnant women and in the cases of long hospital stays. The main function of this machine is to swing the ankle in forward and backward direction with particular angle. This ankle movement will ultimately achieve blood clot prevention in calf and give constant physiotherapy. As well as pneumatic arrangement will give complimentary support to improve muscular action and compress the veins.

## **Smart Walking Assistance**

### **Name of students**

Mr. ShivramKeshavKerkar

Mr. GajananGovindKulkarni

Mr. OnkarHemantPadhye

Mr. AkshayBalkrishnaVasage

### **Under the Guidance of**

Mr Satish N.Ghorpade

Mr. Mahesh Kumar

**Abstract:** - Walking is very important activity in human life and is a vital exercise which reduces many problems such as regulates blood pressure, fight cancer, heart diseases, etc. The smart walking device is being developed for walking assistance and for reclamation purpose. In this report simulations and trials are conducted to verify the intended methodology for direction control. In this report, a method is proposed to identify the user's direction intention according to the pressure which is measured by the sensors placed in the walker's armrest, from the user's forearms. The objective of smart walking assistance is to reduce the efforts in controlling and ensure safety during walking movement. The main aim is to control the direction of the walker in intended way and precisely, using force sensitive resistor. Depending on the various outputs from the force sensitive resistor a program is developed and implemented with the help of Arduino controller for the precise direction control of the walker system.





