



Projects in Electronics and Communication Department

INSTITUTE OF ENGINEERING AND TECHNOLOGY ,
LUCKNOW

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INTRODUCTION

MAJOR PROJECT:

Every final year student undertakes project which is spread over a period of one semester. The student selects a topic of his/her interest and then performs literature survey, formulates the problem formally and then implements it.

The project is carried-out under guidance of faculty member. The project work is assessed by external and internal examiners through presentation and viva- voce. Students have exhibited a high degree of innovation, commitment and team work in executing the project work. Assessment of final year student's project must be done considering criteria such as –

- ❖ Their quality
- ❖ The state-of-the-art technology used in execution
- ❖ Their relevance to industry and academics
- ❖ The use and development of theoretical and experimental methods
- ❖ The coverage of broader areas of the program.

At the end of both semesters a report is submitted by the students. Progress is continuously monitored by supervisor and an advisory committee. Midterm evaluation is done based on presentation and midterm report submission. Final evaluation is based on presentation, report submitted, examination and demonstration. The ethical values are imbibed through proper referencing.

All the POs are thus satisfied. A list of good and average projects is given below:

- ❖ Projects are taken in groups of 3-4 students.
- ❖ Students are guided by the faculty members.
- ❖ Projects are taken on a large variety of problems and many a times of multidisciplinary nature.
- ❖ Projects are both theoretical and experimental.

Initiatives:

- The student's projects are selected in line with Department Vision, Mission and Program outcomes.
- Students are provided with brief idea of various Professional program core group in programme Curriculum as given in section fields 2.1.3.2 for selecting the project ideas.
- The list of previous year projects are displayed on the notice board which ensures no repetition of project work and also encourage students to enhance the previous works.
- The faculties are encouraging the students to carry out in house projects and support will be provided with all necessary software and hardware.

- Encourage students to participate in project exhibitions/Experiments conducted at national level and International Level. The project exhibition was aimed to provide common platform to exhibit their innovations and their work towards excellence in latest technology.

Implementation: A project coordinator is appointed by the Head of the Department who is responsible for planning, scheduling and execution of all the activities related to the student project work.

- ❖ Project presentation is taken thrice per semester in the presence of a project panel as well as weekly/bi-weekly meetings and discussion with the concerned project supervisor.
- ❖ Projects given to the students are related to state of art, industry relevant, hardware, and latest software.
- ❖ Projects offered are with latest and new technological development in the area of power system.
- ❖ Projects are based on mathematical modelling through simulation to analyze the operation and performance under various operating condition.
- ❖ The hardware prototyping through various building blocks are carried out in the respective laboratories for these projects.

Impact Analysis:

- New innovative ideas are born for project work
- Skills or abilities of students improved.
- Knowledge on various aspects of project management were developed
- Confidence level of the students was boosted
- Improved team spirit
- Implementation and deployment of the project for social benefits.
- Document preparation and presentation.

Guidelines for evaluation of project work may include the following:

- ❖ Nature of project
- ❖ Quality of work report and final outcome
- ❖ Presentation/ Viva-Voce
- ❖ Each component/ element to be evaluated and weightage is to be assigned to each component is given in Table below for awarding sessional marks

S.No.	Items	Maximum Weightage
1.	<p>Nature of Project</p> <p>Relevance (5%)</p> <p>Novelty/ Originality (5%)</p> <p>Degree of Challenges Involved (5%)</p>	15%
2.	<p>Quality of work Report and Final Outcome</p> <p>I. Quality of work (20%):</p> <p>General appearance, binding and neatness; Utility/ feasibility for practical applications; Organization and presentation of text; language and style; quality of diagrams/ graphs etc.;; accuracy in drawing conclusions; cross references; bibliography; suggestions for further work.</p> <p>II. Quality of Final Outcome (30%)</p> <p>Aesthetics; functionality; user friendliness; cost effectiveness.</p>	50%
3.	<p>Presentation/ Viva-voce</p> <p>Understanding Concepts, Principles, Practices, Design Considerations, Results, Implementation, etc., (15%)</p> <p>Communication Skills (10%)</p> <p>Viva Voce Skills (10%)</p>	35%

ELECTRONICS AND COMMUNICATION ENGINEERING DEPARTMENT

LIST OF PROJECTS 2018-19

Sr No	Roll No.	Group number	Name	Project Guide Alloted	Topic	Type (Hardware / Software)
1	1505231001	1	ABHINAV DIXIT	ABHISHEK SRIVASTAVA	Vehicle Accident Prevention	Software and Hardware
2	1505231025	1	KAUSHLENDRA SINGH YADAV			
3	1505231053	1	VIVEK KUMAR			
4	1505231002	2	ADITYA TEWARI	RAJIV KUMAR SINGH	Raspberry Pi based reader for blind people	software and hardware
5	1505231008	2	ANKUR SINGH			
6	1505231022	2	HARSHIT SRIVASTAVA			
7	1505231003	3	AJAY KANT CHATURVEDI	ALOK KUMAR JAIN	RISC Processor using MIPS32	Software
8	1505231019	3	DEEPESH MALL			
9	1505231035	3	SANIDHYA TALIWAL			
10	1505231006	4	AMIT KUMAR	R.C.S CHAUHAN	Air Pollution Monitoring System	Software And Hardware
11	1505231015	4	AYUSH VERMA			
12	1505231031	4	PRANAV GARG			
13	1505231009	5	ARPIT TAYAL	MANISHA RAUTELA	Drought Surveillance & Smart Cultivation System	Software And Hardware
14	1505231012	5	ASHUTOSH DWIVEDI			
15	1505231026	5	MAHIMA SINGH YADAV			
16	1505231010	6	ASHEESH RAIKWAR	V.K. SINGH	Sewer Gas Sensing And Monitoring System	
17	1505231014	6	AYUSH KUMAR RAI			
18	1505231017	6	CHANDAN JAISWAL			
19	1505231013	7	AYUSH DEEP SINGH	RAJIV KUMAR SINGH	Sixth Sense Device	Software And Hardware
20	1505231020	7	DHARMENDRA CHAUDHARY			
21	1505231039	7	SHIVAM MISHRA			
22	1505231016	8	BRIJ NANDAN SINGH	RICHA PARIHAR	Smart Garbage Monitoring And Compression System	Software And Hardware
23	1505231018	8	DEEPAK SHARMA			
24	1505231024	8	KARAN KUMAR			
25	1505231021	9	GOVIND KUMAR	S.R.P SINHA	Implementation and performance analysis of virtual eye kit for visually impaired people	Software And Hardware
26	1505231030	9	PAWAN KUMAR			
27	1505231032	9	PRANSHU PATEL			
28	1505231027	10	MAYANK KESHARWANI	R.C.S CHAUHAN	Online voting system	Software
29	1505231028	10	NAVNEET KUMAR			
30	1505231040	10	SHIVANG SINGH			
31	1505231029	11	PALAK AGARWAL	SUBODH WAIRYA	Real time oscilloscope And Its Application Using Arduino	Software And Hardware
32	1505231041	11	SHRETIKA JAIN			
33	1505231047	11	SUJATA GUPTA			
34	1505231004	12	AKSHAY DIXIT	ABHISHEK SRIVASTAVA	Brain Tumor Detection Using Matlab and GUI	Software
35	1505231033	12	RAHUL GOLA			
36	1505231037	12	SHAILENDRA CHAUDHARY			
37	1505231036	13	SAURABH SINGH	PRADEEP KUMAR VERMA	Women Safety Device	Software And Hardware
38	1505231038	13	SHASHI KANT SAHU			
39	1605231901	13	ABHIGYAN PRATAP SINGH			

ELECTRONICS AND COMMUNICATION ENGINEERING DEPARTMENT

40	1505231042	14	SHREYA SINGH	SHRADHANAND VERMA	3D Printer	Software And Hardware
41	1505231043	14	SHUBHAM YADAV			
42	1505231051	14	VINY SHARMA			
43	1505231044	15	SHUBHI SINGH	VIJAY MAURYA	Industrial Automation using RS485	Software And Hardware
44	1505231045	15	SNIGDHA SHUKLA			
45	1505231049	15	TANYA YADAV			
46	1505231046	16	SOURABH SINGH	USHA SHARMA	Sun tracking Solar Panel	Software And Hardware
47	1505231052	16	VIPUL AGRAWAL			
48	1605231902	16	AJEET KUMAR RAM			
49	1605231904	17	CHETAN RAJPUT	SHRADHANAND VERMA	Home Security system	Software And Hardware
50	1605231908	17	PRIYANSHU BAJPAI			
51	1605231912	17	VIVEK KUMAR PATEL			
52	1505231005	18	AMISHI SINGH	LAXMI KANT DWIVEDI	Density Based Traffic Control System Using Microcontroller	Software And Hardware
53	1505231011	18	ASHMITA BHARTI			
54	1505231048	18	SUSHMITA SINGH			
55	1605231903	19	AKANKSHA SINGH	ABHISHEK SRIVASTAVA	Solar Car	Software And Hardware
56	1605231906	19	DHEERAJ SINGH			
57	1605231910	19	SAVITA RAJPUT			
58	1505231050	20	VIKAS SWAROOP	MANISHA RAUTELA	Deaf And Dumb Recognition System	Software And Hardware
59	1605231907	20	NOOR ALAM			
60	1605231911	20	VINEET KUMAR			

BEST PROJECTS OF 2018-19

PROJECT 1

Project Title- 3D Printer

Group Members Details-

1505231042 SHREYA SINGH
1505231043 SHUBHAM YADAV
1505231051 VINY SHARMA

PROJECT 2

Project Title- Real Time Oscilloscope And Its Application Using Arduino

Group Members Details-

1505231029 PALAK AGARWAL
1505231041 SHRETIKA JAIN
1505231047 SUJATA GUPTA

PROJECT 3

Project Title- Sewer Gas Sensing And Monitoring System

Group Members Details-

1505231010 ASHEESH RAIKWAR
1505231014 AYUSH KUMAR RAI
1505231017 CHANDAN JAISWAL

PROJECT 4

Project Title- Implementation and performance analysis of virtual eye kit for visually impaired people

Group Members Details-

1505231021 GOVIND KUMAR
1505231030 PAWAN KUMAR
1505231032 PRANSHU PATEL

PROJECT 5

Project Title- Smart Garbage Monitoring And Compression System

Group Members Details-

1505231016 BRIJ NANDAN SINGH
1505231018 DEEPAK SHARMA
1505231024 KARAN KUMAR

PROJECT 6

Project Title- Sixth Sense Device

Group Members Details-

1505231013 AYUSH DEEP SINGH
1505231020 DHARMENDRA CHAUDHARY
1505231039 SHIVAM MISHRA

PROJECT 7

Project Title- Drought Surveillance & Smart Cultivation System

Group Members Details-

1505231009 ARPIT TAYAL
1505231012 ASHUTOSH DWIVEDI
1505231026 MAHIMA SINGH YADAV

**DETAILED DESCRIPTION OF SOME BEST PROJECTS FOR
THE YEAR 2018-19**

PROJECT 1:3D PRINTER

Group Members Details

1505231042 Shreya Singh
1505231043 Shubham Yadav
1505231051 Viny Sharma

Overview of Project

3D Printing technology is an additive manufacturing technology where a three dimensional object is created. This technology is a rapid prototyping technology.

Additive Manufacturing- It refers to technology that creates objects through sequential layering.

*Subtractive Manufacturing-*It refers to technology that creates objects by methods such as cutting.

Design

The design structure that this project aims is a PRUSA OR KOSSEL Model.

Problem Statement

- The present 3D printing technology is very time consuming with a high manufacturing cost.
- This project aims not only to reduce the cost of the 3D Printer but also working upon its accuracy and time constraints.

Solution

The possible solution is designing a frame and using only the most important materials and using the printing technology that minimizes the wastage of plastic to give maximum efficiency to the product output.

Simplified Block Diagram

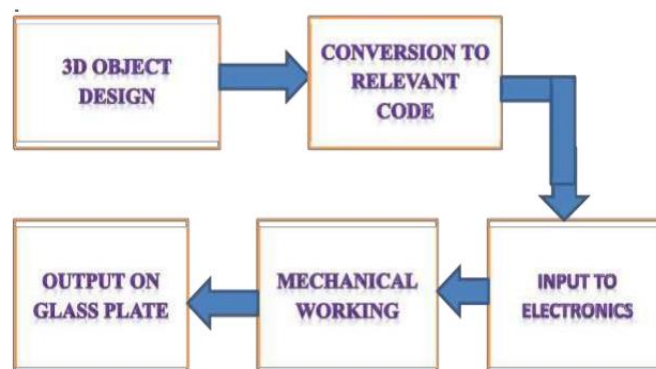


Figure Simplified Block Diagram

This block diagram describes the basic working of the product. As shown in above block diagram:

- Firstly a 3D object is designed using a CAD Tool and then is converted in such a file format specifically a G-Code using software's like Cura or Repetier that is understandable by the electronics that mainly includes the Microcontroller.
- Input is given to the electronics that give commands to the motors according to the design in the CAD Tool.
- The mechanical components including motors, extruder works accordingly and thus a layer by layer object is printed (in layman language plastic is glued) on the print plate or glass plate. After the 3D object gets cooled to a certain temperature the final end product can be taken out.

Working with Files

If we want to again change the process settings for example changing the printing speed, infill percentage etc. There comes option of "Edit Process Settings". After making such modification the OK option is clicked to save the changes. GCode / X3G files gives the instructions for the printer. Gcode tells the machines how much to move, where to move and how fast to move. Such types of settings are also called as 3D Printing Tool Path. Gcode uses plain text format while the X3G uses binary language which is used by the machine with the maker boat type firm wares. When the option Prepare to Print is clicked the 3D model will automatically get converted into 3D Tool paths for the machine. Factory files is a combined file to retain the simplify 3D Project. It offers a unique way to save all the data about the project into a comprehensive file called as "Factory File". This file includes copy of 3D models that have been imported, their positions on bed, process settings etc. 3D Printers typically use software that "slices" a 3D model into layers and then the software generates a GCode that extrudes the plastic to fill each layer. Mostly slicer software works, CAD program is compatible of producing STL's.

The Frame and its Components

The description of various different components used in the development of the system project and its frame. It is really very necessary to describe the features of the components that are used in the designing of the system. This chapter includes the brief description of the components along with their pin configuration and different features.

The Frame

Selection of frame is an essential part for system designing. This frame gives the support to the printer. All the axes of the motor added to this frame. The threaded rods are mounted on this frame and rubber strips controlled by motor action. We decided to build an aluminium based frame because of its light weight and ease of use.

List of Components

The printer consists of a number of components. All of them are listed below with their description.

Extruder

Extruder consists of two parts, a cold top part that feeds the plastic filament, hot part at bottom that melts and extrudes the plastic. The speed of the extruder head may also be controlled, to stop and start deposition and form and interrupted plane without stringing between sections. Figure 3.3 shows an extruder.

Stepper Motor

The stepper motor is an electromagnetic device that converts digital pulses into mechanical shaft rotation. Many advantages are achieved using this kind of motors, such as higher Simplicity, since no brushes or contacts are present, low cost, high reliability, high torque at low speeds, and high accuracy of motion. This project involves the usage of at least five motors specifically five stepper motors .one motor to control the Y-axis, the other to control the X-axis, two to control Z-axis and one to control the extruder. The configuration of all the five motors is same and the driver is used to drive the motor.

Driver A4988

The driver features adjustable current limiting, over current protection, and five different micro step resolutions. It operates from 8 – 35 V and can deliver up to 2 A per coil. Five drivers are used for running 5 motors. Heat bed is pasted on the ramp so that IC should not be burned out. Figure 3.4 shows a stepper motor driver carrier A4988.

Arduino Mega

Arduino is an open-source hardware and software company, project and user community that designs and manufactures single-board microcontrollers and microcontroller kits for building digital devices and interactive objects that can sense and control objects in the physical and digital world. Its products are licensed under the GNU Lesser General Public License (LGPL) or the GNU General Public License (GPL), permitting the manufacture of Arduino boards and software distribution by anyone. Figure 3.7 shows an Arduino Mega Board.

RAMPS 1.4

RAMPS 1.4 is probably the most widely used electronics for RepRap machines as of March 2014. It consists of a RAMPS 1.4 shield, an Arduino Mega 2560 board (or a clone), and a max of five Pololu Stepper drivers. It can control up to 5 stepper motors with 1/16 stepping precision and interface with a hotend, a heatbed, a fan (or a second hotend), a LCD controller, a 12V (or 24V with appropriate modification) power supply, up to three thermistors, and up to six end stoppers. Figure 3.7 shows a RAMPS 1.4 Boards.

SMPS

The SMPS Power Adaptor – 12V/1A (Power supply) is a Switched mode power supply (SMPS). This is the advanced power supply and better than conventional ones. If you want low losses and stable output also you don't want to make a rectifier, so go for SMPS. **The power adaptor comes with dual barrel connector, a 2.1mm, and a 1.1mm connector. You can use this SMPS Power Adaptor – 12V/1A to power-up the Arduino UNO/Arduino MEGA, DC motors, LCD screens, DVD players, Hard Drives, Audio Gear, and most other digital devices use less than 1 Ampere. Figure 3.9 shows a 12V SMPS.**

3D Printing Filament

3D printing filaments are one of the most important materials that are required because it is the material of which the end product is made. This project uses two types of plastics.

- Acrylonitrile Butadiene Styrene (ABS): Plastics It is a common thermoplastic polymer and is amorphous in nature. The most important prospect of this material is its resistance power subjective to force and toughness.

- Polylactic Acid or Polyactide (PLA): Plastics It is a biodegradable plastic material which is made from renewable resources such as corn starch and sugarcane. The main difference between the two plastics is that the ABS plastic type is known for its toughness whereas the other is known for its soft type of material. Thus for different purpose different plastic materials are used.

Hot End

The parts of the extruder that get hot enough to melt plastic, or potentially other materials. As opposed the cold end, which is generally made from printed thermoplastic that needs to stay cool or it will melt / deform. Hot end parts use materials that can stand up to ~240 C heat (for current thermoplastic extrusion). The hot end usually refers to the tip of the extruder as it should be hottest there. Figure 3.10 shows a 0.4mm hotend.

Circuit Diagram

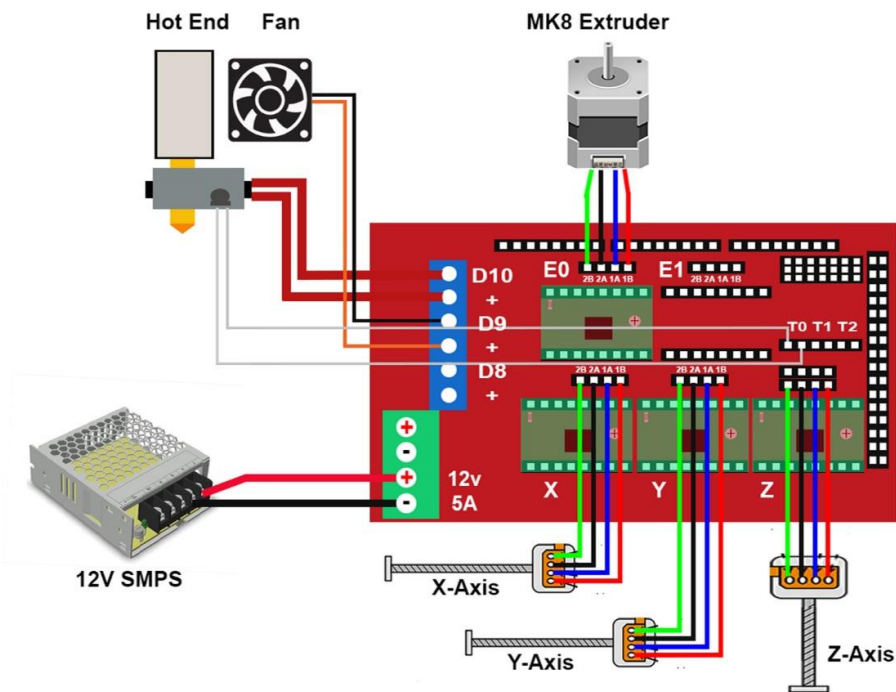
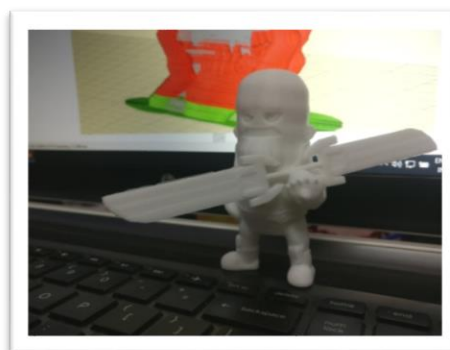


Figure - Connections of the Printer



Final 3D Printer with the team

Below are some final 3D printed samples from the project.



Project 2: REAL TIME OSCILLOSCOPE AND ITS APPLICATION USING ARDUINO

Group Members Details

1505231029 Palak Agarwal

1505231041 Shretika Jain

1505231047 Sujata Gupta

Overview of Project

In the project oscilloscope or logic analyser using Arduino, Arduino is programmed and interfaced with TFT Module to plot the graph for outputs from the serial monitor of Arduino or TFT screen. Here Arduino is programmed such that it displays the output waveforms as the oscilloscope does. Initially the voltage is stepped down using the potential divider circuit such that the voltage ranges between 0-5V. This is given as input to Arduino and output is noted from serial monitor.

Arduino gives values only, so it is interfaced with TFT Module using graphics library are plotted for the outputs from Arduino plotter on TFT screen. Hence Arduino works as an oscilloscope when analog inputs are given. Logic analyser works for digital inputs. Arduino can display 6 analog and 8 digital waves which can't be done by an oscilloscope.

This oscilloscope can be used to measure the frequency upto 100 KHz. The ARDUINO Board, the heart of the oscilloscope read value from its inbuilt analog to digital converter (ADC) and pushes this to TFT module by USB port.

TFT as Oscilloscope

The oscilloscope is one of the most powerful electronic instruments that is available to electronics hobbyist, experimenters, and engineers. It is mainly used to measure time-varying signals. Any time you have a signal that varies with time (slowly, quickly, and /or periodically) you can use an oscilloscope to measure it , visualize it, and to find any unexpected features in it.

We can use an oscilloscope to observe and study signal characteristics that we could otherwise not see. We will be using the Arduino analog A5 input to sample and capture time varying signals by writing a program that will also display those signals in a 2.4" TFT LCD touch display, and we will input data to modify the oscilloscope behavior, using the touch capabilities of the screen display.

Before we start building and programming, let's review some basic characteristics of an oscilloscope. These are functions you can control on most oscilloscopes:

Sweep speed

Sweep speed is usually measured in units of time per distance, like milliseconds/centimetre or milliseconds per division. This might also be referred to as the horizontal sensitivity.

Vertical sensitivity

That's the measure of how sensitive the display dot is to voltage applied to the input terminals. It is usually measured in volts/centimetres or volts per division.

A **trigger signal** can be generated when the signal value reaches some particular level – the trigger level. In most cases you can set the trigger level to a voltage value of your choosing. A trigger is used to capture and stabilize the waveform on the screen, or to wait for an event before capturing the data.

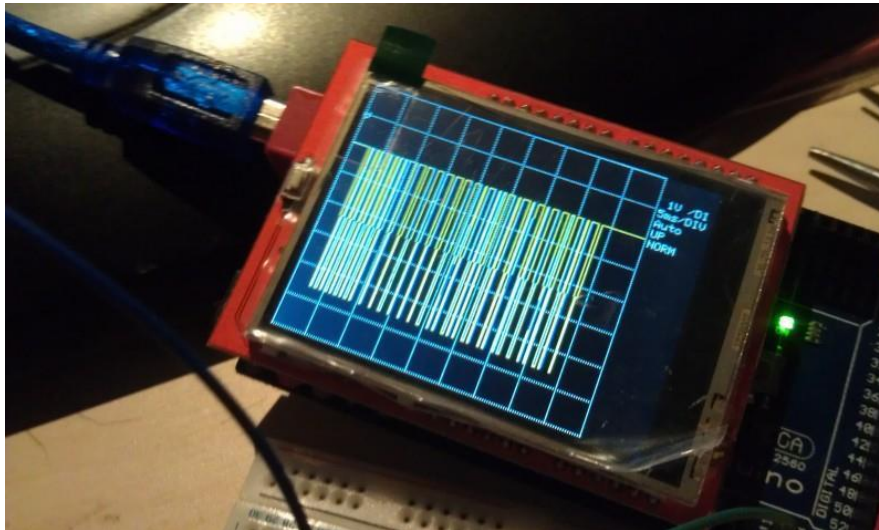


Fig. TFT as Oscilloscope

Components required for Real time Oscilloscope using Arduino

The required components have been discussed below:

1. Arduino UNO
2. TFT LCD
3. XR 2206
4. Capacitors
5. Resistors
6. Potentiometer
7. PCB
8. USB
9. Jumper Wires
10. Adaptor
11. IDE

Making of Frequency Generator

Components specifications of frequency generator are shown below:

Label	Type	Value	Note
R1	resistor	1K	Regardless of the polarity
R2	Potentiometer	B503=50K	(by screen printing layer)
R3, R5, R6	resistor	5.1K	Regardless of the polarity
R4	resistor	330	Regardless of the polarity
R7	Potentiometer	B503=50k	(by screen printing layer)
R8	Potentiometer	B104=100k	(by screen printing layer)
C1	Electrolytic capacitor	100UF	The positive long feet
C2	Ceramic capacitor	104	Regardless of the polarity
C3, C4	Electrolytic capacitor	10UF	The positive long feet
C5	Ceramic capacitor	105	Regardless of the polarity
C6	Ceramic capacitor	473	Regardless of the polarity
C7	Ceramic capacitor	222	Regardless of the polarity
C8	Ceramic capacitor	101	Regardless of the polarity
U1	IC(XR2206)		(by screen printing layer)
JK1	DC POWER		(by screen printing layer)
J1	2PIN Jumper cap(XM2.54)		Regardless of the polarity
J2	2PIN Jumper cap(XM2.54)		Regardless of the polarity
P1	Signal wire terminal		(by screen printing layer)
J3	2*5P Jumper cap		

Fig. Component Soldering Guide

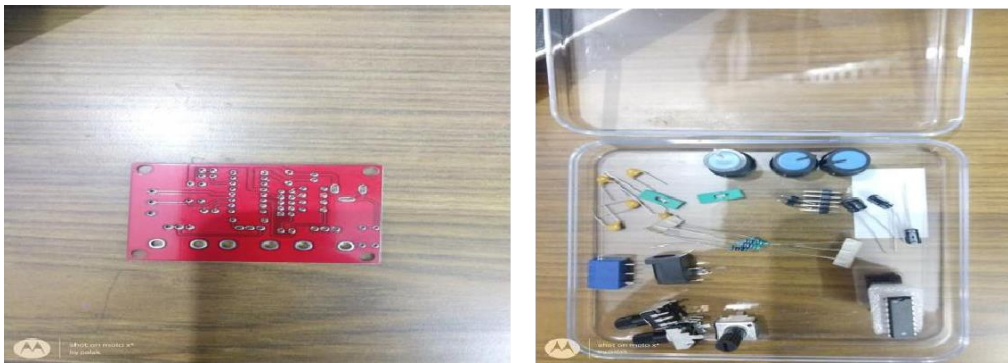


Fig. Step 1 of making Function Generator



Fig. Step 2 of making Function Generator

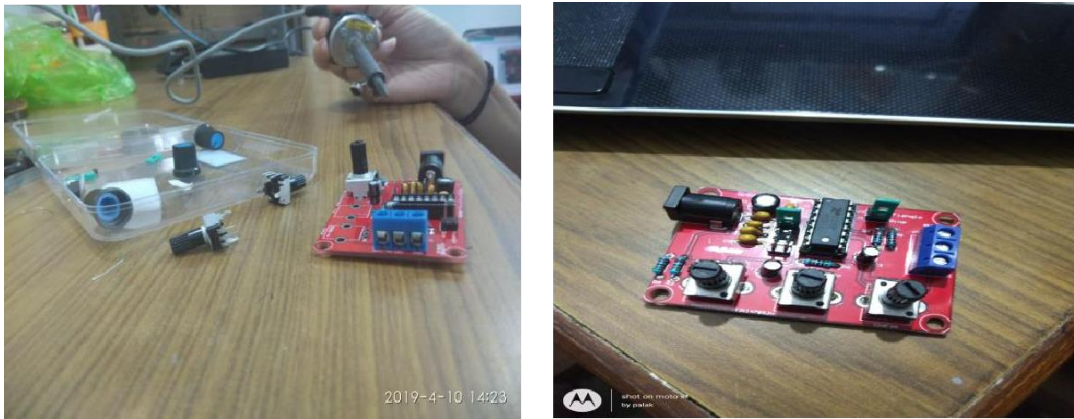


Fig. Step 3 of making function generator

Arduino IDE

The Arduino Uno can be programmed with the Arduino software. Select "Arduino Uno" from the **Tools > Board** menu (according to the microcontroller on your board). The ATmega328 on the Arduino Uno comes preburned with a boot loader that allows you to upload new code to it without the use of an external hardware programmer. It communicates using the original STK500 protocol (reference, C header files).

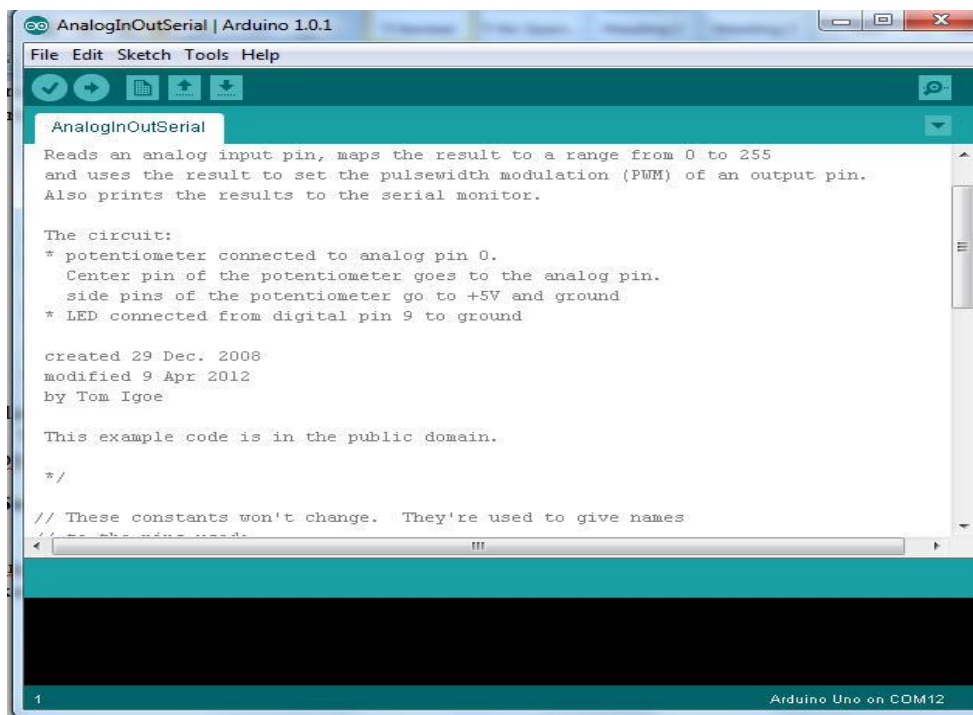


Fig. Arduino Tab for Programming

USB Overcurrent Protection

The Arduino Uno has a resettable polyfuse that protects your computer's USB ports from shorts and overcurrent. Although most computers provide their own internal protection, the fuse provides an extra layer of protection. If more than 500 mA is applied to the USB port, the fuse will automatically break the connection until the short or overload is removed.

Physical Characteristics

The maximum length and width of the Uno PCB are 2.7 and 2.1 inches respectively, with the USB connector and power jack extending beyond the former dimension. Four screw holes allow the board to be attached to a surface or case. Note that the distance between digital pins 7 and 8 is 160 mil (0.16"), not an even multiple of the 100 mil spacing of the other pins.

Getting Started with the Arduino TFT Screen

The Arduino TFT screen is a backlit TFT LCD screen with a micro SD card slot in the back. You can draw text, images, and shapes to the screen with the [TFT library](#).

The screen's pin layout is designed to easily fit into the socket of an [Arduino Esplora](#) and [Arduino Robot](#), but it can be used with any Arduino board.

The [TFT library](#) is included with [Arduino IDE 1.0.5 or later](#).

Basically there are 3 libraries to be used in this:

- SPFD5408_Adafruit_GFX.h
- SPFD5408_Adafruit_TFTLCD.h
- SPFD5408_TouchScreen.h

SPFD5408_Adafruit_GFX.h

The Adafruit_GFX library for Arduino provides a common syntax and set of graphics functions for all of our LCD and OLED displays. This allows Arduino sketches to easily be adapted between display types with minimal fuss...and any new features, performance improvements and bug fixes will immediately apply across our complete offering of color displays. The Adafruit_GFX library can be installed using the Arduino Library Manager...this is the preferred and modern way. From the Arduino "Sketch" menu, select "Include Library" then "Manage Libraries..."

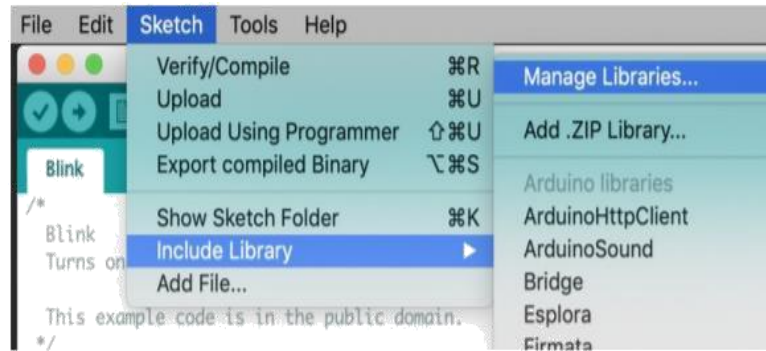


Fig. To install Adafruit_GFX

SPFD5408_Adafruit_TFTLCD.h

Arduino has always helped to build projects easily and make them look more attractive. Programming an LCD screen with touch screen option might sound as a complicated task, but the Arduino libraries and shields had made it really easy. In this project we will use a 2.8" Arduino TFT LCD screen to build our own Arduino Touch Screen calculator that could perform all basic calculations like Addition, Subtraction, Division and Multiplication.

SPFD5408_TouchScreen.h

The LCD has a 2.8" 4-wire resistive touch screen glued onto it. You can use this for detecting finger-presses, stylus', etc. You'll need 4 pins to talk to the touch panel but you can reuse some of the pins for the TFT LCD! This is because the resistance of the panel is high enough that it doesn't interfere with the digital input/output and we can query the panel in between TFT accesses, when the pins are not being used.

FINAL CONNECTION

As illustrated in following figure, we can see a fine arrangement of our project ie. REAL TIME OSCILLOSCOPE AND ITS APPLICATION USING ARDUINO. The power supply has been given to arduino which is interfaced with TFT Module 2.4" Shield Screen. The supply has also been given to function generator through which we give input to arduino. And we plot output on the screen of TFT Module.

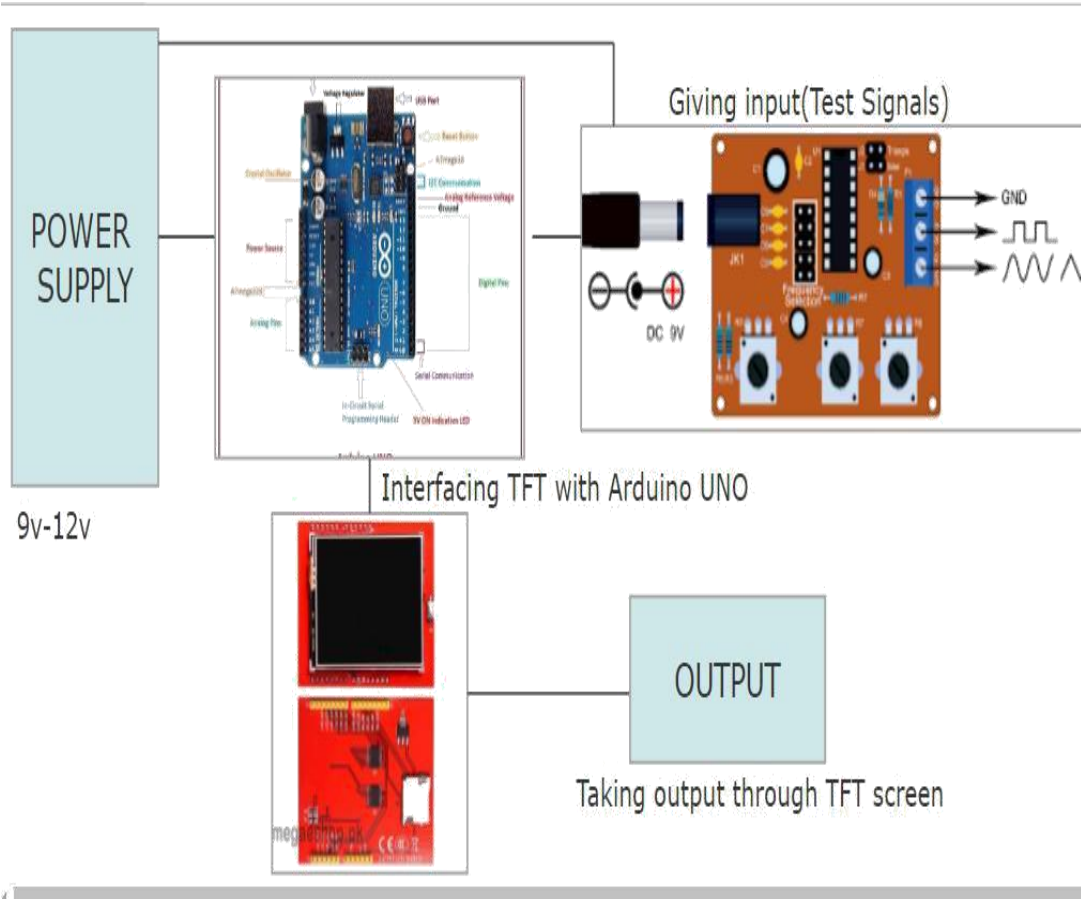


Fig. Final Connection

Conclusion

Hereby we conclude that arduino can be used as oscilloscope for displaying waveforms. Apart from displaying waveforms arduino oscilloscope has the ability to perform various operations on the applied inputs such as addition, subtraction etc. This makes analysis simpler and overcomes the drawbacks of the conventional CROs. The only drawback is that it cannot take negative inputs or voltages above 5volts. However these drawbacks can be overcome by using offset card for shifting the voltage waveforms above zero for negative inputs. The higher voltages can be step down using potential divider to protect arduino from getting damaged.

Future Scope

Arduino can be expected to be used for carrying out analysis on both digital and analog inputs. It is an open-source electronics prototyping platform based on flexible, easy-to-use hardware and software and this environment makes it easy to write code and upload it to the I/O board. Low cost and flexibility makes arduino suitable for carrying out experiments easier than CROs. It has the provision for displaying 6 analog inputs and 8 digital making it more advantageous.

ELECTRONICS AND COMMUNICATION ENGINEERING DEPARTMENT

LIST OF PROJECTS 2017-18

GROUP NO.	ROLL No.	STUDENT NAME	PROJECT GUIDE ALLOTTED	TOPIC	Type (Hardware/software)	Classification (application/product/research/review)
1	1405231012	ANKITA ANAND	Er. ABHIMANYU	Brain Tumour Detection Using MATLAB GUI	Software	Research
	1405231020	KANISHK GANGWAR				
	1405231027	NEELIKA				
2	1405231015	CHITRANSHU MISHRA	Dr. RAJIV KUMAR SINGH	Analysis and Simulation of High Power Low Loss Microwave Components	Hardware & Software	Research
	1405231018	DIVYANSH				
	1405231035	RAJAN SINGH				
3	1405213043	SHIVAM GUPTA	Er. AMIT KUMAR	Automation and Power Certification Using Internet of Things	Hardware & Software	Application & Product
	1405231023	MANISH SACHAN				
	1405231026	NEELANSHU VARSHNEY				
4	1405231011	AMAN KUMAR SHARMA	Er.PANKAJ SINGH	Design of Adder High Speed Using Quaternary Number System	Software	Application
	1405231013	ANKUR SONI				
	1405231039	SAH SWAPNIL AGRAWAL				
5	1405231001	ABHISHEK KUMAR	Dr. R.C.S CHAUHAN	Power Optimization Street Light with Motion Detection and Smart Automation	Hardware & Software	Application, Product & Research
	1405231009	AKASH VERMA				
	1405231010	AMAN GUPTA				
6	1405231019	GAURAV SINGH	Er. PIYUSH SINGH	Image processing Using DSP - 6748	Software	Research
	1405231024	MOHIT RAJ				
	1405231030	PRASHANT KUMAR				
7	1405231025	MONICA PANGTEY	Er.POOJA GUPTA	IOT Garbage Monitoring System	Hardware & Software	Application
	1405231028	NIKHIL K SINGH				
	1405231033	PRIYANK SRIVASTAVA				
8	1405231021	KRISHNA KUMAR	Dr. R.C.S CHAUHAN	Cache Memory Controller using Verilog HDL	Software	Research, Application
	1405231031	PRAVEEN SAHU				
	1405231036	RAJAT CHAWLA				
9	1405231006	AKANSHA VERMA	Er.RICHA PARIHAR	Performance Evaluation of Digital Reversible Logic circuit using VHDL	Software	Research
	1405231014	ASTHA BHASKER				
	1405231032	PRIYADARSHINI DWIVEDI				
10	1405231016	DEVESH SHUKLA	Dr. RAJIV KUMAR SINGH	Automatic Plant Irrigation System using Soil Moisture Sensor	Hardware & Software	Application & Product
	1405231017	DHARMENDRA KUMAR SINGH				
	1405231022	LOKENDRA KUMAR				
11	1405231043	SAURABH KUMAR GAUTAM	Er. PIYUSH SINGH	Identifier & Vehicle Accident Tracking Location using GSM	Hardware & Software	Application & Product
	1405231048	SHUBHAM JAIN				
	1405231055	YASH MISHRA				
12	1405231044	SHIKHA TIWARI	Dr.S. R. P. SINHA	GSM based fire alarm system using ARDUINO	Hardware & Software	Application & Product
	1405231046	SHIVANGI GUPTA				
	1405231052	VIDUSHI SAXENA				
13	1405231047	SHREYA MISHRA	Er.SONA SHARMA	Secure Text transmission using video encryption	Software	Application
	1405231050	SHWETA KUMARI				
	1405231051	SUNIL KUMAR				
14	1405232010	AYUSH TRIPATHI	Dr. SUBODH WAIRYA	Automation using Speech recognition	Hardware & Software	Application & Product
	1405232025	PARAS JAIN				
	1405232045	SHUBHI DIXIT				
15	1505231903	ANURAG KUMAR MAURYA	Er. PIYUSH SINGH	A Device for Monitoring and Controlling of Electrical Energy used in Domestic Environment	Hardware & Software	Application & Product
	1505231904	DEEPAK KUMAR VERMA				
	1505231905	DIVYANSH SRIVASTAVA				
16	1405251003	ABHISHEK TRIVEDI	Er. SUSHIL KUMAR GUPTA	DTMF based RF Remote Control System	Hardware	Application
	1505231902	ANOOP KUMAR				

ELECTRONICS AND COMMUNICATION ENGINEERING DEPARTMENT

17	1405231041	SAURABH KUMAR	Er. TULIKA AGRAWAL	Hand Talk Assistive Technology for Deaf and Dumb people using Flex Sensor	Hardware	Application & Product
	1405231053	VIJAY KUMAR YADAV				
	1505231909	MOHIT JOUHARI				
18	1405232018	JYOTI	Er. VIJAY MAURYA	Ultrasonic Distance Measurement System using ATMEGA 8	Hardware & Software	Application
	1505231907	MADHURI KUMARI				
	1505231911	TAZEEN FATIMA				
19	1405231042	SAURABH KUMAR	Dr. V.K. SINGH	Current Mode Biquad Filter	Hardware	Application & Product
	1405231054	VISHAD SAXENA				
	1505231901	ANKUR CHAUDHARY				
20	1505231906	IMRAN KHAN	Er. AMIT KUMAR	Wireless ECG monitoring system using GSM/ MATLAB	Hardware & Software	Application
	1505231908	MO ASHIF ALI				
	1505231912	VIKASH KUMAR				

BEST PROJECTS IN 2017-18

PROJECT 1

Project Title- Automation using speech Recognition

Group Member Details-

1405232010 AYUSH TRIPATHI
1405232025 PARAS JAIN
1405232045 SHUBHI DIXIT

PROJECT 2

Project Title- Power Optimizing Street Light with smart Automation and Motion Detection

Group Members Details-

1405231001 ABHISHEK KUMAR
1405231009 AKASH VERMA
1405231010 AMAN GUPTA

PROJECT 3

Project Title- GSM based Fire Alarm Using Arduino

Group Members Details-

1405231044 SHIKHA TIWARI
1405231046 SHIVANGI GUPTA
1405231052 VIDUSHI SAXENA

PROJECT4

Project Title- Automation and Power Curtailment using IOT

Group Members Details-

1405213043 SHIVAM GUPTA
1405231023 MANISH SACHAN
1405231026 NEELANSHU VARSHNEY

PROJECT 5

Project Title- Analysis and simulation of High Power Low Loss Microwave Components

Group Members Details-

1405231015 CHITRANSHU MISHRA
1405231018 DIVYANSH
1405231035 RAJAN SINGH

**DETAILED DESCRIPTION OF BEST PROJECTS FOR THE
YEAR 2017-18**

PROJECT 1

Project Title- Automation using speech Recognition

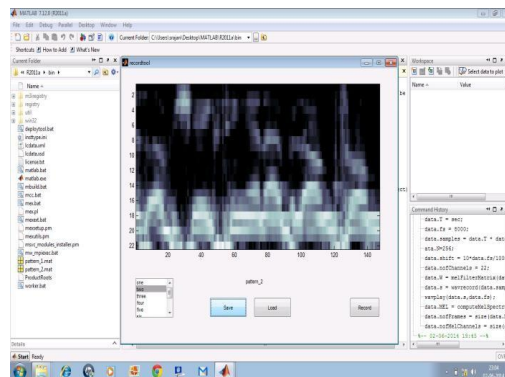
Group Member Details-

1405232010 AYUSH TRIPATHI
1405232025 PARAS JAIN
1405232045 SHUBHI DIXIT

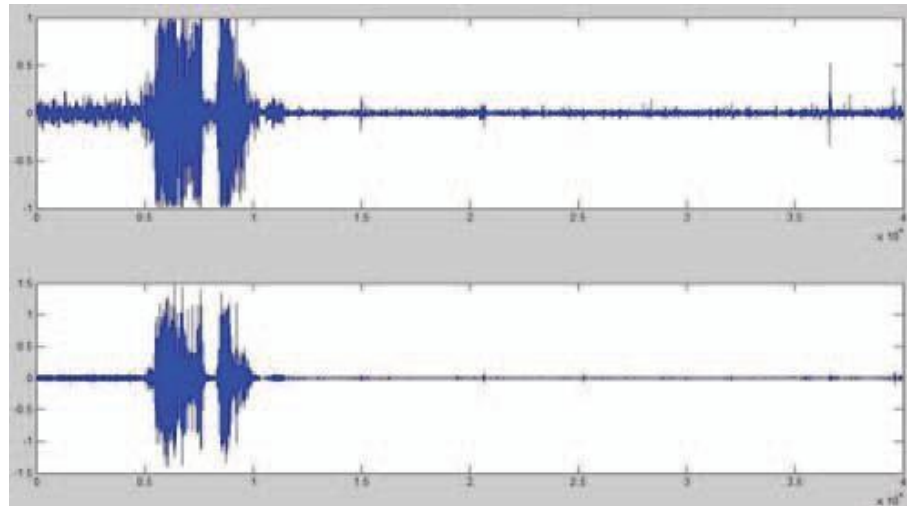
Automatic voice recognition is a computerized speech text process in voice is usually recorded with acoustic microphones by capturing air pressure changes. This kind of air transmitted voice signals is prone to two kinds of problems related to voice robustness and applicability. The former means mixing of speech signals and ambient noise usually deteriorate automatic voice recognition system performance. The latter means speech could be overheard easily on air transmission channel and this often results in privacy loss or annoyance to other people.

The Development in Wireless and communication and mobile devices has bolstered the improvement of speech recognition system. When we say speech recognition system two main

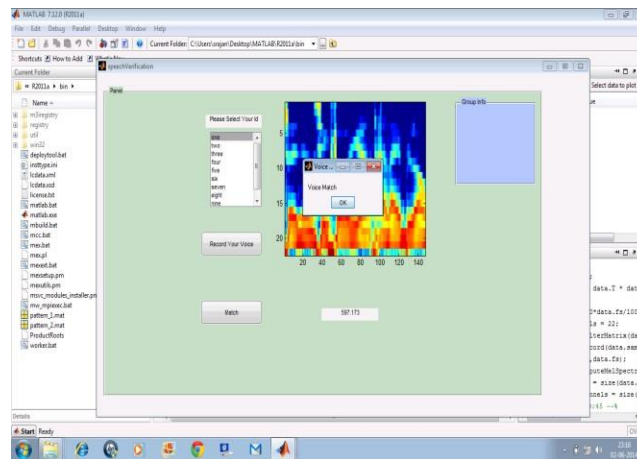
significant terms that comes are the pattern matching and the feature extraction. This project denotes and computes a simple algorithm using MATLAB to match the patterns to recognize speech using cross correlation technique. Correlation is a statistical measure where you have to contrast two or more signals to discover the similarity between them. Speech recognition which is a part of biometrics has become one of the major aspect to provide security to the devices and applications. Speech recognition is a concept where we extract the spoken words and match it with the sample previously provided.



Record Voice Sample Tool



The recorded speech sample and filtered speech sample respectively



Matched Voice Interface

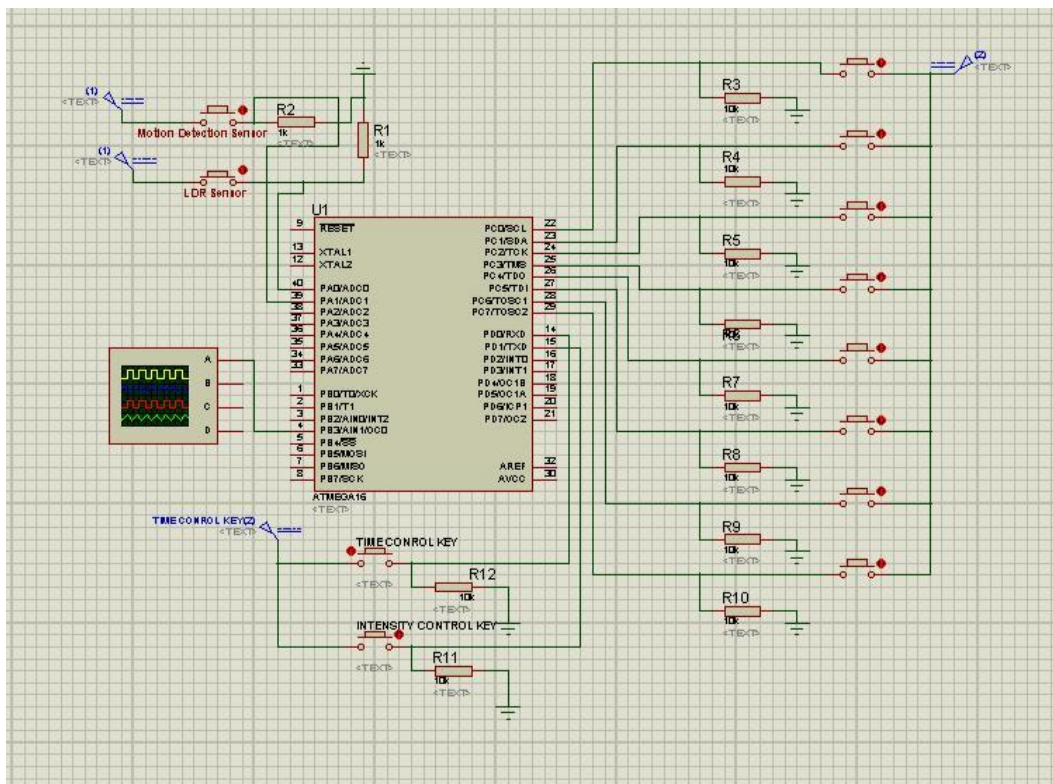
This work depicts Speech Recognition frameworks as an example of automation of household devices. The automation is done mainly on MATLAB 2018a platform and involves processing of speech signal in order to decide the nature of command given. There are two session of framework, initially is speech processing and second is correlative matching. In speech processing session analog voice input is converted to digital data of speech signal. The speech signal can then be processed to filter and for other purpose of voice enhancement. The second phase involves using database to decide the nature of command input and then the actuators are triggered to perform switching operation.

PROJECT 2

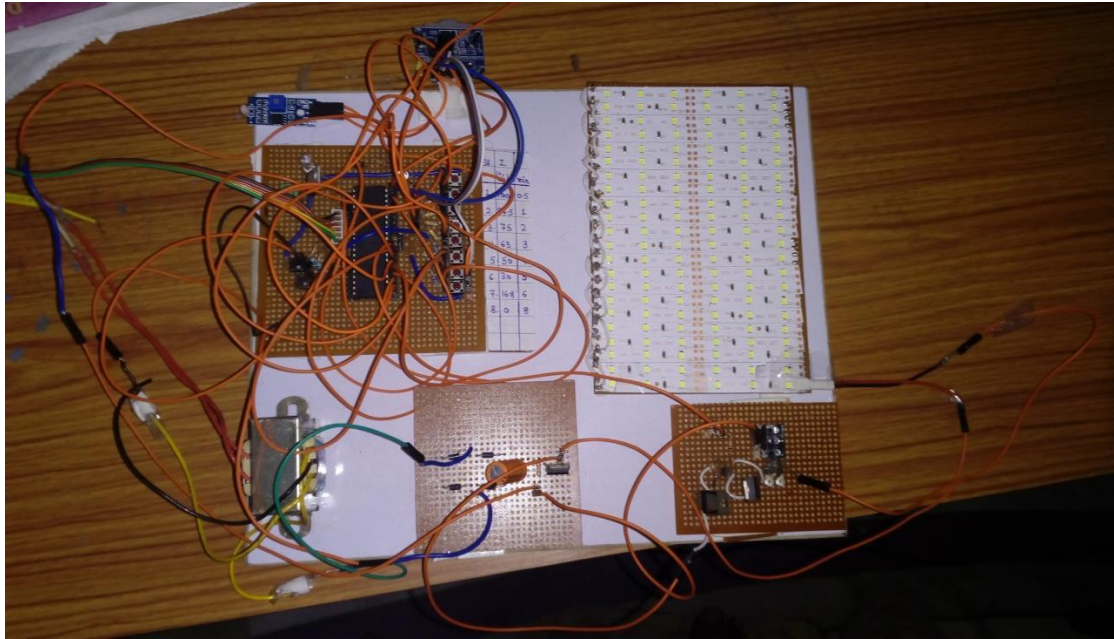
Project Title- Power Optimizing Street Light with smart Automation and Motion Detection
Group Members Details-

- 1405231001 ABHISHEK KUMAR
- 1405231009 AKASH VERMA
- 1405231010 AMAN GUPTA

This project aims for designing and executing the advanced development in current systems for energy optimization of street lights. Currently we have a traditional system where the street lights will be switched ON in the evening before the sunsets and they are switched OFF in the next day morning after there is sufficient light everywhere. But the accurate timing for these lights to be switched ON is when there is complete darkness. With this, the power will be saved up to some extent. This project work reduces the electrical energy wastage. Also the manual handling of the street lighting system is completely eliminated. The proposed system provide a solution for energy saving. This is achieved by sensing and approaching a vehicle using Motion detection sensor when LDR sensor gives a high output whenever light goes below an acceptable desired intensity level. Upon sensing the movement the sensor transmit the data to the microcontroller which furthermore vary the intensity of street light.



Implementation Of User Interface Circuit



Practical Implementation of Complete Circuit

This Project “**Power Optimizing Street Light With Motion Detection and Smart Automation**” coordinate new innovations offering ease of maintenance and energysavings, this is a practical, eco friendly and the safest way to save energy. It plainly handles the two issues that world is confronting today, saving of energy and also disposal of incandescent lamps, very efficiently. Introductory cost and maintenance can be the disadvantages of this venture. With the advances in technology and good resource planning the cost of the project can be chopped down and also with the use of good equipment the maintenance can also be reduced in terms of periodic checks.. The LEDs have long life, emit cool light, donot have any toxic material and can be used for fast switching. For these reasons our project presents far more advantages which can overcome the present limitations. Keeping in view the long term benefits and the initial cost would never be a problem as the investment return time is very less. The undertaking has scope in different applications like giving lighting in ventures, grounds, avenues, parking areas and in metropolitan zone having tremendous shopping centers.

PROJECT 3

Project Title- GSM based Fire Alarm Using Arduino

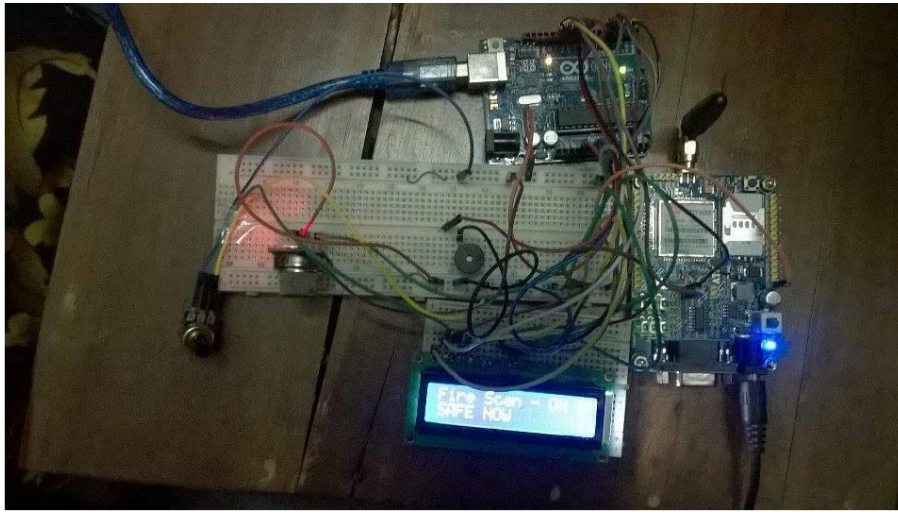
Group Members Details-

- 1405231044 SHIKHA TIWARI
- 1405231046 SHIVANGI GUPTA
- 1405231052 VIDUSHI SAXENA

SMS based Fire Alarm system are very useful in remote locations where human interaction is limited. Such systems are useful in mines, industrial areas, factories etc.

Night Owl – We all know owls don't sleep during night. SMS based Fire Alarm system helps to monitor locations and alert during fire that occurs in night time.

Quick Actions to shut down Fire – 90% of fire damages occur due to lack of early fire detection. A fire attack is usually silent and people will know about fire only when it has spread across a large area. SMS based Fire Alert system gives warning immediately to multiple mobile numbers and hence remedy actions can be taken quickly. This helps to prevent major damages and losses created by a fire accident.



Arduino-UNO R3 Board

The **GSM based fire alarm using arduino** has been designed and developed for making our life more easy and secured. We use 5V from Arduino board and use 12V DC power supply for GSM shield. We use the GSM module for receiving signal from an Arduino. Finally, we have designed and developed the whole control system and tested using LM35 temperature . We fix all the problems encountered during the design and testing of the system. Finally, we successfully achieved our goals. In this study, the application of arduino with improved algorithm of extended specifications has increased the use of GSM shield and improves the detecting of fire.

PROJECT 4

Project Title- Automation and Power Curtailment using IOT

Group Members Details-

1405213043 SHIVAM GUPTA

1405231023 MANISH SACHAN

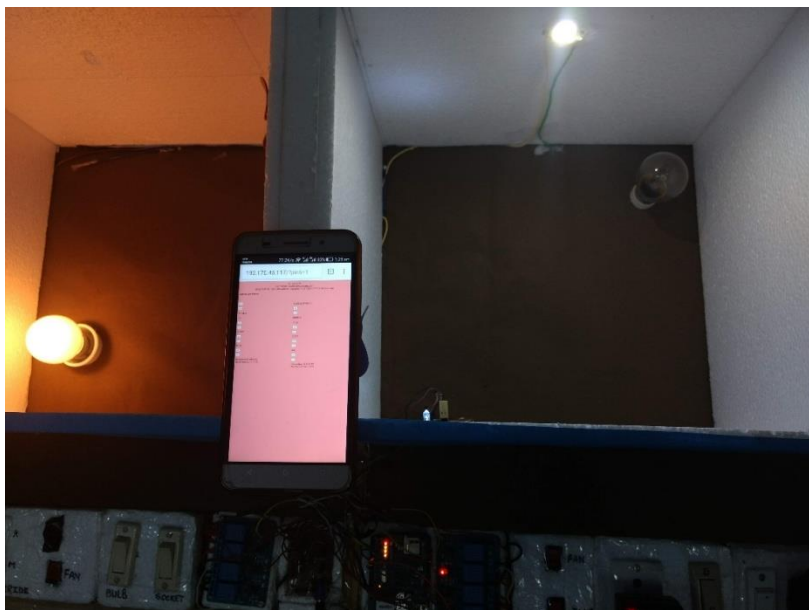
1405231026 NEELANSHU VARSHNEY

Home Automation refers to the branch of automation that deals with the methods dedicated to the reduction of human efforts and involvement in achieving tasks. With the rise in demand of advance technology and items, human mind crave for more comforts.

The main objective of these Home Automation systems (HAS) using internet of things (IoT) is to inhibit automatic and electronic control of household features activity and appliances. This project deals with the wide range connectivity and energy efficient control of the home appliances in a user-friendly manner. These features of connectivity, scalability, power saving can be achieved by the use of Arduino, which acts as an interface between the hardware and the software of the entire system which can be connected to number of peripherals using GPIO Pins. It can be connected to the internet using the Ethernet Shield or by Wi-Fi Shield.

The circuit is implemented in a way such that it does not render the AC supply wiring useless. The control board is provided with a manual override to switch between the normal and automated house. A simple yet effective Web page is designed that communicates with the controller. The Web page designed also has a special feature of power saver that adjusts the lightning and temperature in room by judging the surrounding conditions unless specified by the user.

Thus a single application on an android device connected via Ethernet or by Wi-Fi connectivity can simply allow the user to talk to the appliances not only in a particular room but in the other rooms as well and the ultra-power saver can be used for curtailment of energy. Thus the following idea portrays the thought of smart house into reality.



ELECTRONICS AND COMMUNICATION ENGINEERING DEPARTMENT

The project has its basic working on Internet of Things thus allowing us to access our home without any range limitations. Moreover the idea of controlling it both manually as well as automatically provides a better advantage among all similar ideas. It achieves its communication with user through Internet Connection which is the best way to exchange data over long range. The data is exchanged via a server which allows us to transfer the varying user response on the HTML page to the Arduino board.

Another interesting feature provided in the project is its power saver mechanism which can analyze the light intensity and temperature in the room and switch the lights on-off in case of varying light intensity or on-off multiple fans in case of varying temperature, thus energy conservation is achieved.

The Multiroom feature allows a user to maintain a better control over the entire house. Separate buttons for separate rooms are provided to ensure a better control of user over the appliances. A safeguard is build-in so that the normal AC switches work in case the automation fails due to any reason. This manual override switch also allows us to use manual switches of 220V AC if we want to use it. Thus providing us with an additional benefit of not removing the old wiring in an old house. Therefore this setup can be installed in either an already build house with electrical wiring or a new house.

Thus with the rising technological advancements and the era of Internet of Things this project demonstrates the extent to which we can automate our house which also includes luxury as well as better security and power management features.

In the past years Internet of Things has become the trending technology with its unlimited applications. For this particular project installation of security system like facial recognition etc. Involvement of several other modules like GSM or GPS modules for features like vehicle tracking door unlock and backup automation with GSM module in case of Internet unavailability can make the project much more advanced and efficient.

PROJECT 5

Project Title- Analysis and simulation of High Power Low Loss Microwave Components

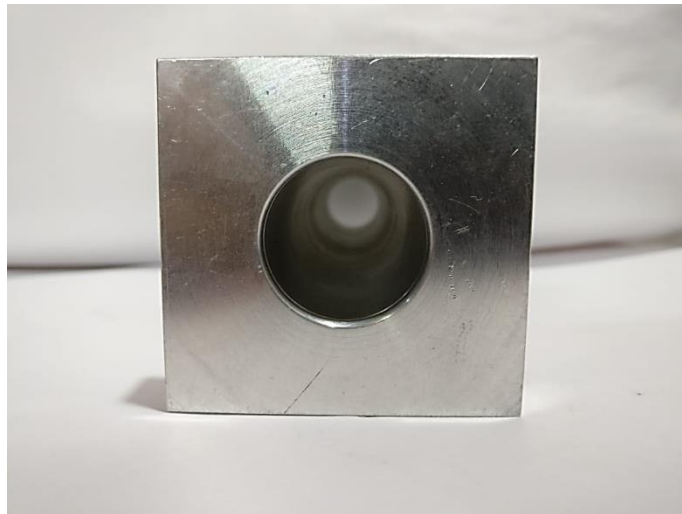
Group Members Details-

1405231015 CHITRANSHU MISHRA

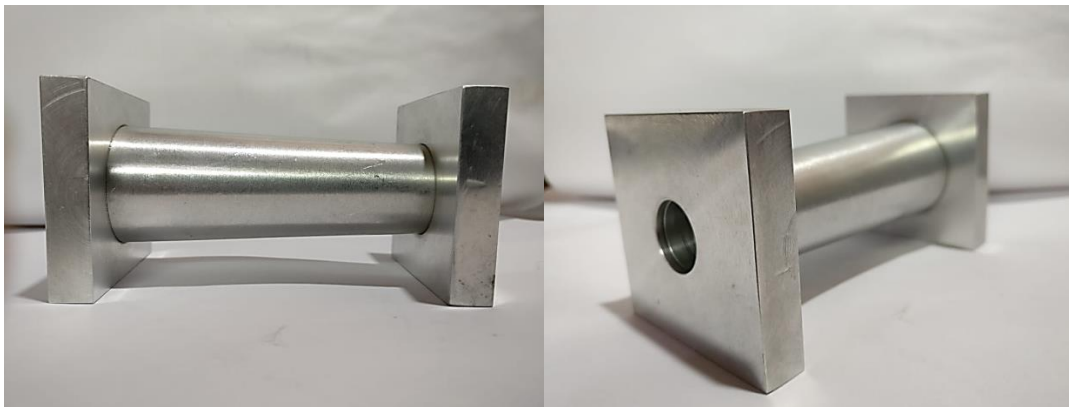
1405231018 DIVYANSH

1405231035 RAJAN SINGH

Microwave communication is a very important part in today's communication needs. Microwave technology is used in many areas such as cellular communication, satellite communication, signal processing and radio astronomy, long-distance communications, space navigation, radar systems, medical equipment, and missile electronic systems. Microwave components are the main part of microwave technology. So, this project focuses on designing microwave components for high power applications, losses associated with different materials used in waveguides and their effect on the microwave propagation. The different components to be analyzed in this project are waveguides (rectangular and circular), twists, bends and directional couplers. The components are simulated using MATLAB for errors and expected frequency of operation before moving on to designing phase. The tapered waveguide is to be considered in the designing process to increase the bandwidth of the microwave device while maintain the gain.



*Cross sectional view of designed tapered waveguide of dimensions:
Initial radius-3.73 mm, Final radius-7.37 mm, Length-10 cm
Material-Aluminum*



ELECTRONICS AND COMMUNICATION ENGINEERING DEPARTMENT

LIST OF PROJECTS 2016-17

Sr.No	Roll No.	Group number	Name	Project Guide Alloted	Topic	Type (Hardware / Software)
1	1305231001	1	ABHINESH MISHRA	MR.PIYUSH KR PUSHKAR	Distant Object Detection	Software and Hardware
2	1305231050	1	VIPIN KUMAR VERMA			
3	1305231053	1	VIVEK KUMAR SINGH			
4	1305231002	2	ABHISHEK KUMAR	AMIT KUMAR	Gsm Based Dc motor Speed and Detection Control	software and hardware
5	1305231014	2	ATUL GAUTAM			
6	1305231043	2	SHIVAM SRIVASTAVA			
7	1305231003	3	AKASH KUMAR AGRAHARI	PROF. S.R.P SINHA	Electronically Tunable Current Mode Filter For Analog Vlsi circuit	Software
8	1305231030	3	MEGHA AGARWAL			
9	1305231035	3	NEETI AGARWAL			
10	1305231004	4	AMAN GUPTA	Ms. CHANDANA PANDEY	Sign Language Recognition	Software And Hardware
11	1305200031	4	PREETIKA AGARWAL			
12	1305231016	4	BHAVANA			
13	1305231006	5	ANISH KUMAR JAIN	Er. ABHIMANYU	Dc Motor Speed and Direction Control Using PWM and MOSFET	Software And Hardware
14	1305231038	5	PRASHANT KUMAR YADAV			
15	1305231034	5	NEERAJ KUMAR SINGH			
16	1305231007	6	ANKIT KUMAR	Er. SUSHIL KUMAR GUPTA	Automatic Speed Measuring Device For Highways	Software And Hardware
17	1305231013	6	ASHOK KUMAR			
18	1305231031	6	MOHD. BILAL TARIQ			
19	1305231008	7	ANSHUL BHADOURIA	Dr SUBODH WAIRYA	Optical Character Recognition	Software And Hardware
20	1305231009	7	ANUBHAV			
21	1305231046	7	SUYASH VARDHAN SINGH			
22	1305231010	8	ANUPAMA VERMA	Er. TULIKA AGARWAL	IR SENSOR BASED SPEED TRACKING SYSTEM	Software And Hardware
23	1305231027	8	MADHU KUMARI			
24	1305231042	8	SAMRIDDHI TIWARI			
25	1305231011	9	ANURAG NIGAM	Er. PANKAJ SINGH	NUMBER PLATE EXTRACTION USING MATLAB	Software And Hardware
26	1305231036	9	NIKHIL KUMAR SINGH			
27	1305231054	9	VIVEK PRATAP SINGH RATHORE			
28	1305231012	10	ARPITA CHAUDHARI	Er. VIPUL VAIBHAV MISHRA	Password detection Using Statistical Parameters of and Image	Software And Hardware
29	1305231024	10	HIMANSHI JAISWAL			
30	1305231029	10	MANOJ SINGH			
31	1305231015	11	AYUSH VASHISTH	Er. SAURABH BHASKAR	CDMA Overloading Through Matlab	Software And Hardware
32	1305231028	11	MANISH TRIGUN			
33	1305231048	11	UTKARSH SHARMA			
34	1305231017	12	CHARU AGARWAL	Er. RICHA PARIHAR	Simulation of universal Logic Board by Using VHDL	Software And Hardware
35	1305231045	12	SRISHTI BEHAL			
36	1405231911	12	VINAYKA SINGH			
37	1305231020	13	DEEPSH KUMAR DUBEY	Mr. SUNNY KUAMR PASWAN	Intelligent Automatic Plant Irrigation System	Software And Hardware
38	1305231045	13	SUSHEEL KUMAR			
39	1305231040	13	RAMBABU GUPTA			

ELECTRONICS AND COMMUNICATION ENGINEERING DEPARTMENT

40	1305231022	14	DIBYA PRAKASH KUSHWAHA	Er. PANKAJ SINGH	SCADA Based Plant Health Monitoring System	software And Hardware
41	1305231026	14	KANISHK GOEL			
42	1305231033	14	MRIDUL GUPTA			
43	1305231025	15	JAGJIT SINGH	Er. PIYUSH KUMAR PUSHKAR	Density Based Traffic Control Using FSM	Software And Hardware
44	1305231047	15	UDIT KHANDELWAL			
45	1305231049	15	VAIBHAV NIGAM			
46	1305231039	16	PRATEEK CHANDRA TRIPATHI	Er.SAURABH BHASKAR	Message Broadcast System Submitted in Partial Fulfilment of the Requirements	Software And Hardware
47	1305231041	16	SAIF UL HAQ			
48	1505231030	16	SAKSHI GARG			
49	1305231052	17	VISHAL MALIK	Er. CHANDANA PANDEY	Performance Evaluation of Digital Image Watermarking Using Discrete Cosine Transform and Discrete Sine transform	Software And Hardware
50	1305231005	17	AMIT KUMAR UPADHYA			
51	1305231021	17	DEVANSHIKA TRIPATHI			
52	1405231001	18	ABDUR REHMAN TAHA	DR. V K SINGH	Grounded Immittance Simulator Using Single OTRA	Software And Hardware
53	1405231908	18	SHILENDRA KUMAR			
54	1405231910	18	SONKAMAL DEEP			
55	1405231902	19	ALOK KUMAR PATEL	Er. RICHA SINGH	Fault Detection In Reversible Logic Using Stuck At Fault Model	Software And Hardware
56	1405231905	19	ANU SINGH			
57	1405231909	19	SHIVAM SRIVASTAV			
58	1405231907	20	PRADEEP GUPTA	PIYUSH SINGH	AUDIO NOISE CANCELLATION USING DSP KIT	Software And Hardware
59	1305231051	20	VIPUL SINGHAL			
60	1405231912	20	VIVEKNAND CHAUDHARY			
61	1205231910	21	RAHUL KUMAR	Er. TULIKA AGRAWAL	RF Based Remote Control for Home Appliances	Software And Hardware
62	1405231903	21	AMARNATH			
63	1405231906	21	DEEPA VISHWAKARMA			

BEST PROJECTS 2016-17

PROJECT 1

Project Title- Audio Noise Cancellation Using DSP Kit

Group Member Details-

1405231907	PRADEEP GUPTA
1305231051	VIPUL SINGHAL
1405231912	VIVEKNAND CHAUDHARY

PROJECT 2

Project Title- SCADA Based Plant Health Monitoring System

Group Member Details-

1305231022	DIBYA PRAKASH KUSHWAHA
1305231026	KANISHK GOEL
1305231033	MRIDUL GUPTA

PROJECT 3

Project Title- Density Based Traffic Control Using FSM

Group Member Details-

1305231025	JAGJIT SINGH
1305231047	UDIT KHANDELWAL
1305231049	VAIBHAV NIGAM

PROJECT 4

Project Title- Electronically Tunable Current Mode Filter For Analog VLSI Circuit

Group Member Details-

1305231003	AKASH KUMAR AGRAHARI
1305231030	MEGHA AGARWAL
1305231035	NEETI AGARWAL

PROJECT 5

Project Title- Password Detection Using Statistical Parameters of an Image

Group Member Details-

1305231012	ARPITA CHAUDHARI
1305231024	HIMANSHI JAISWAL
1305231029	MANOJ SINGH

ELECTRONICS AND COMMUNICATION ENGINEERING DEPARTMENT

LIST OF PROJECTS 2015-16

Sr No	Roll No.	Group number	Name	Project Guide Allotted	Topic	Type (Hardware / Software)
1	1205231003	1	AJAY VIKRAM SINGH	DR.V.K.SINGH	CURRENT CONVEYOR AND ITS APPLICATION	Software and Hardware
2	1205231902	1	CHETAN RAJ SINGH			
3	1205231040	1	SANTANU SRIVASTAVA			
4	1205213040	1	SMRITI GUPTA			
5	1205231007	2	ANAND SHARMA	DR.V.K.SINGH	DESIGN OF EVEN PARITY GENERATOR AND CIRCUIT CHECKER	software and hardware
6	1205231002	2	AJAY SINGH			
7	1205231012	2	DHEERAJ YADAV			
8	1205231018	2	KM .SHWETA			
9	1205231009	3	ANKIT KUMAR YADAV	DR.V.K.SINGH	IMPLEMENTATION OF ACTIVE –C KHN BIQUID FILTER USING CCCII	Software
10	1205231019	3	LALIT KUMAR SINGH			
11	1305231903	3	MANIKANT			
12	1305231906	3	RAMTEERATH YADAV			
13	1305231908	3	SATYAM VISHWAKARMA	DR.V.K.SINGH	LOW ERROR FIXED WIDTH MODIFIED BOOTH MULTIPLIER	Software And Hardware
14	1205231010	4	ANVIT SHARMA			
15	1205231013	4	DILSAD ALI			
16	1205231042	4	SHOBHIT KUAMR			
17	1205231045	4	VIKASH YADAV	PROF. NEELAM SRIVASTAVA	DOUBLE THRESHOLD ENERGY DETECTION OF COOPERATIVE SPECTRUM SENSING IN OGNITIVE RADIO	Software And Hardware
18	1205231011	5	DEEPAK DHIMAN			
19	1205231041	5	SHIVAM KUMAR			
20	1205231050	5	VIJAY PRATAP SINGH			
21	1205232012	6	BAISHNAV KUMAR VERMA	DR.V.K.SINGH	DESIGN OF MULTIPLEXER, CONVERTERS FOR NANO ELECTRONICS COMPITABLE QCA APPROACH	Software And Hardware
22	1205232013	6	BHARAT GIRDHAR			
23	1205213013	6	BRIJENDRA KUMAR			
24	1205231020	6	MANUJ MALHOTRA			
25	1205231017	7	HARSHITA JAISWAL	DR. SRP SINHA	DIGITAL IMAGE WATERMARKING	Software And Hardware
26	1205231016	7	KAUSTAUB MANI GAUR			
27	1205231027	7	NIKHIL ANAND			
28	1205231049	7	SWADHA SIDDHI CHAUHAN			
29	1205231022	8	MRGHA GAUTAM	PROF. NEELAM SRIVASTAVA	STUN GUN	Software And Hardware
31	1205231029	9	PRAKHAR AATRE	PROF. NEELAM SRIVASTAVA	DESIGN ANY ANALYSIS OF ORTHOGONAL SLIT CUT CIRCULATOR PATCH MICROSTRIP ANTENNA	Software And Hardware
32	1205231036	9	RIMA KISKU			
33	1205231001	9	ABHINAV SRIVASTAVA			
34	1205231030	10	PRAKHAT AGARWAL	DR. SRP SINHA	VEHICLE THEFT DETECTION WITH REMOTE ENGINE LOCKING	Software
35	1205231052	10	YASHASWI CHAURASIA			
36	1205231025	10	NAMIT SARASWAT			
37	1305231912	10	VARSHA BHORE			
38	1205231032	11	PULAK VERMAN	DR. SRP SINHA	SIMULATION OF UNIVERSAL LOGIC BOARD USING VHDL	Software
39	1305231901	11	AJAY KUMAR			
40	1205231004	11	AMAN DEOL			
41	1205231005	11	AMANN SRIVASTAVA			

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42	1205231039	12	SHAILESH KUMAR	DR.V.K.SINGH	OPERATIONAL TRANSCONDUCTANCE AMPLIFIER	Software
43	1205231045	12	SIDDHANT KUMAR			
44	1205231024	12	MUKESH KUMAR RAJ			
45	1205231046	13	SUDHANSHU SRIVASTAVA	DR.SUBODH WAIRYA	A COMPACT DUAL BAND RECTANGULAR MICROSTRIP PATCH ANTENNAUSING T- SLOT	Software And Hardware
46	1205231026	13	NEELU CHAUDHARY			
47	1205231035	13	RICHA YADAV			
48	1305231905	13	RAM NARESH YADAV			
49	1205231053	13	ZEESAN SARWAR	PROF. NEELAM SRIVASTAVA	VISUALISATION OF LELCTROMAGNETIC WAVES IN WAVEGUIDE	Software
50	1205231047	14	SWAPNIL GAUTAM			
51	1205231028	14	NISHTHA MISHRA			
52	1305231904	14	NEHA AZAM	DR.SUBODH WAIRYA	NEW LOSS-LESS SYNTHETIC FLOATING INDUCTANCE	Software
53	1205231048	15	TRAPTI VARSHNEY			
54	1205231014	15	DIPESH GOEL			
55	1205231031	15	PRATEEK CHOPRA			
56	1205231051	15	YASH ADITYA	PROF. NEELAM SRIVASTAVA	A VISIBLE LIGHT COMMUNICATION SYSTEM FOR INDOOR APPLICATION	Software And Hardware
57	1205232042	16	SWATI VERMA			
58	1205231008	16	ANKIT DIXIT	PROF. NEELAM SRIVASTAVA	INDUSTRIAL AUTOMATION	Software And Hardware
59	1305231909	17	SAURABH PANDEY			
60	1305231911	17	SUMIT KUMAR PANDEY	PROF. NEELAM SRIVASTAVA	WIRELESS MOBILE CHARGER	Software And Hardware
62	1305231910	18	SHUBHAM SRIVASTAVA			
63	1205231024	18	PRIYA SAHNI			

BEST PROJECTS 2015-16

PROJECT 1

Project Title- Double Threshold Energy Detection of Cooperative Spectrum Sensing in Cognitive Radio

Group Member Details-

1205231011	DEEPAK DHIMAN
1205231041	SHIVAM KUMAR
1205231050	VIJAY PRATAP SINGH

PROJECT 2

Project Title- Design and Analysis of Orthogonal Slit Cut Circular Patch Microstrip Antenna

Group Member Details-

1205231029	PRAKHAR AATRE
1205231036	RIMA KISKU
1205231001	ABHINAV SRIVASTAVA

PROJECT 3

Project Title- New Loss Less Synthetic Floating Inductance Configuration Realized with Using Two CFOAs

Group Member Details-

1205231048	TRAPTI VARSHNEY
1205231014	DIPESH GOEL
1205231031	PRATEEK CHOPRA
1205231051	YASH ADITYA

PROJECT 4

Project Title- Visualization of Electromagnetic Waves In Waveguide

Group Member Details-

1205231047	SWAPNIL GAUTAM
1205231028	NISHTHA MISHRA
1305231904	NEHA AZAM

PROJECT 5

Project Title- Simulation of Universal Logic Board Using VHDL

Group Member Details-

1205231032	PULAK VERMAN
1305231901	AJAY KUMAR
1205231004	AMAN DEOL
1205231005	AMANN SRIVASTAVA