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Sr. No.	Project Title	Student Name	Enroll. No.	Project Guide	Abstract	Remarks
1	Establishing a network on ipv4 and migrating it to ipv6	Chavda Shrey Tushar	160280111012	Prof. M V Shah	This project is dedicated to study of computer networks, IPv4 and IPv6 and IoT, which is carried out at Regional Telecom Training Center (RTTC), Bharat Sanchar Nigam Limited (BSNL), Ahmedabad. The world is running out of available IP addresses under the IPv4 protocol. According to reports, it is estimated that less than one year the full IPv4 address table 32-bit numbers are used to identify network connected devices and it is completely exhausted. Almost 4.3 billion IP addresses, a proverbial drop in the bucket compared to the number of possible addresses provided by IPv6, two to the power of 128. As the population of the world has reached over 7.3 billion people and the fact of requirement of novel applications demanding global IP numbers like 3G mobile services, IPTVs, this conspicuously shows that there a dearth of global IP addresses. The Communication ministry of Government of India had started the transition since 2012 and has released the roadmap to achieve complete IPv6 transition in all companies of India by December 2020. We aim to implement a network on IPv4 along with adding servers and intranet to it in the first phase. In second phase we aim to understand the limits of IPv4 and advantages of IPv6, which will follow the use of various migration techniques and implementation of a successful IPv6 network along with IoT devices. We have also made a prototype of an IP camera, representing the use of IoT devices in daily life and importance of IPv6 in it. This transition's effects will be seen in pioneering applications being implemented by this in various areas like power and energy sector, banking, agriculture, Government and educational networks, industrial automation etc.	IDP (BSNL)
		Shrivastava Niharika Ajaybhai	160280111092			

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2	Black box and advanced controls for cars	Shah Dhruvi Birju	160280111087	Prof. M V Shah	With an increase in the number of car accidents, it is essential to carry out the analysis of these accidents to provide better safety measures for a car driver as well as the passengers. We have designed a Black Box with the idea of recording each and every detail of the journey by installing a dashboard camera in the car. We have designed four safety modules to provide good security to the economical and compact cars. These safety modules are cost-efficient and currently not provided in small cars.	
		Sanghvi Rutva Jigishkumar	160280111081			
3	Energetic	Parmar Ashvin Prabhubhai	170283111026	Prof. B S Sedani	Solar thermal technology is a technology that is rapidly gaining acceptance as an energy saving measure in agriculture application. It is preferred to other alternative sources of energy, because it is abundant, inexhaustible, and non-polluting. Solar air heaters are simple devices to heat air by utilizing solar energy and it is employed in many applications requiring low to moderate temperature below 80°C, such as crop drying and space heating. By using old version of solar dryer, the temperature of fruit and vegetables become higher and it will damage the foods and vegetables. The temperature of this solar dryer is not stable. Due to instability of temperature proteins, carbohydrates and irons of fruits and vegetables will decrease or burned. The internal temperature of old version solar dryer is not in human control. Due to change in environment temperature the time of drying will also vary simultaneously. The efficiency of oldest dryer is less due to rapidly change in temperature. The concept of Energetic introduced here makes the existing solar dryer system fully controllable, transparent and automatic while restricting the requirement of space and cost.	SSIP
		Parmar Kaushik Arajanbhai	170283111028			
		Nakum Hasamukh Govindbhai	170283111022			

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4	Wall designing machine	Chovatiya Mihirbhai Bharatbhai	160280111014	Prof. B S Sedani	Due to manual process of wall designing, there is a huge scale requirement of labour and hence the labour cost is responsible for increasing the price of designing work. The solution of these problems is just to automate the process, so there will be saving of time and getting accurate results. The wall designing machine works automatically and very efficiently. This machine works on the principle of X-Y plotter. It operates in two axis motion to draw continuous vector graphics. It will be done by moving a marker or other writing device across the surface of a piece of paper or wooden board. Interesting thing about this machine is that, by replacing its pen with laser, the laser cutting process can be done very efficiently. So, from this machine the process will be faster than before and there will be saving of time, which will help our country to progress in the race of advanced technologies.	
		Maniar Jeet Paragbhai	160280111042			
		Patel Vrushali Jagdishbhai	160280111068			
		Shah Dharmi Sarish	160280111086			
5	Book reader for blind people using raspberry pi	Pathan Nilofar Abdul Gani	170283111031	Prof. A B Nandurbarkar	We developed the Pi book reader which can read a real book. The overall process of the project involves image to text conversion and then text to speech conversion. The image to text conversion is carried out with the help of OCR [Optical character recognition].The OCR technology can be used to convert kinds of documents like image, scanned documents and pdf files. The OCR algorithm involves various stages like scanning, preprocessing and image thresholding. In the last stage speak is use to convert the obtain text from OCR into speech. This converted speech is read aloud by a speaker connected to the RASPBERRY PI.	
		Patil Komal Dilipbhai	170283111033			
		Thakkar Viraj Hemangbhai	170283111045			

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6	Present anytime,anywhere system	Gandhi Manthankumar Nareshbhai	170283111007	Prof. K G Vaghela	In present time, each school and colleges are equipped with a projector system which is quite inefficient as they do not deliver data (PPT etc.) perfectly due to atmospheric conditions. So the idea is to replace the whole projector system with a wireless local broadcasting system which will broadcast the whole educational material like video, PPT and audio of respective faculty simultaneously on the smart phone or tablet or laptop of each student with efficient communication. Unlike projector system, this system will not be affected by external issues and will also deliver the educational content rightfully to the students directly which tends to increase the educational quality in each class and sectors.	SSIP
		Rathod Raj Govindkumar	170283111038			
		Kawade Samarth Ashvinkumar	170283111014			
		Shukla Pranav Chaitanya	170283111042			
7	Audio processing (spectrogram)	Dudhia Bhavya Pruthvish	160280111020	Prof. K G Vaghela	We design and develop a system that can identify and differentiate audio. The audio fingerprinting method does this accurately in noisy environment. This method is more accurate and useful for music applications. We generate the spectrogram of the audio signal with the help of FFT algorithms using MATLAB. After that the peak amplitude points are determined in the spectrogram in noisy environment. For generate unique fingerprint of a music, we create a hash by combining these peaks along with their time difference and. This unique id can be generated for every music we want to identify. By collecting all these ids and use them at the time of identification we can differentiate two closely related audio as well.	
		Gosai Rahul Dharmendrapari	160280111027			
		Saini Rishi Rameshbhai	160280111080			
8	Virtual guide with indoor Navigation	Mandani Drashtiben Bholabhai	170283111018	Prof. K G Vaghela	Global Positioning System (GPS) works nice in outdoors but indoors it gets much worse and not really precise. So we implemented an Indoor Navigation system using	

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		Vaghasana Dharmik Bharatbhai	170283111048		beacons which is class of BLE (Bluetooth Low Energy) which is an intentionally conspicuous device designed to attract attention to a specific location. Magnetron is used as digital compass to give the perfect direction to our system. We have built the database of various audio files which helps you to reach your destination and work like self-guided indoor tour. Our system automatically play the audio information related to the place where person moving or standing like virtual guide.	
		Kukadiya Ajay Vallabhbhai	170283111016			
9	Advanced wheelchair operated based on human gestures	Acharya Aishwarya Anil	160280111001	Prof. K G Vaghela	We developed an advanced wheelchair with multiple features for the physically disabled and elderly section of the society. High cost and non-user friendly features in the existing automated wheelchairs led us to retrospection and conclusion of selection of this area of work .Thus, another major purpose of undertaking this initiative to make such an amenity which is cost effective for the needy who are unable to access its costlier version. Image processing is a field that is growing exponentially across the globe. Along with that we aim to incorporate the discipline of machine learning as well in the future scope. Using IP we aim to build a library that stores gestures and using machine learning produce multiple samples such that each of them is assigned to do a particular task. For the blind community, we aim to incorporate the combination of various sensors that would prevent the wheelchair against collision to any obstacles, and constantly monitor their state.	
		Christian Michelle Joslin	160280111015			
		Dodia Hiral Kamleshkumar	160280111019			

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10	Automated trolley	Sedani Ritu Bhavesh	160280111084	Prof. Sanjay Prajapati	With rising population and demand of products, we hardly ever find supermarkets empty. Usually Person takes almost two hours inside the market to search and select all the groceries and then stand in the queue for payment. With the implementation of our project, we have two modules which solves the mentioned problems. The first module named “Automated Trolley” using Raspberry Pi which will follow our movements and we would not have to worry about dragging and turning the trolley around shopping area. This technology can also be used in luggage trolleys where the trolley will automatically follow the owner without human intervention. In factories we can transport heavy goods within the factory easily, which would require less manual labor, less resources and will save fuel consumption and will in turn increase the efficiency of production. It is an eco-friendly way of transporting goods at small distances. We develop a system to make the shopping scenario smart, easy and efficient everywhere we go. The second module named “EasyBag” a mobile application designed for that supermarket, which help us search for the grocery item needed in the market. We can then scan the QR-code of the product via the app which directs go to the UPI Payment gateway, after successful transaction the trolley is open to put items inside. The mobile application also supports E-COMMERCE in which the user can order the goods from the online platform and get it at their door step. This helps to reduce human effort, human error and customer time consumption.	
		Snehal Chetan Prabhu	160280111095			
		Vaishnav Devanshi Shripal	160280111110			

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11	Quadcopter flight controller	Rathod Janki Ashwinkumar	170283111037	Prof. P J Brahmbhatt	Nowadays, the applications of Quadcopters (4 winged drone) have increased to a very large extent in most of the fields like photography, surveillance, delivery of various products etc. These aerial vehicles are usually stabilized and controlled by the use of flight controllers. There are lot of flight controllers available commercially. These flight controllers are designed based on the PID (Proportional, Derivative and Integral) algorithm and some other engineering concepts. In comparison to those available in market controllers, we design a flight controller which would be very much cost efficient, user friendly and end user configurable as per the need.	
		Pandya Parikshit Ajay	160280111051			
12	Smart store room	Ghoghari Shaileshkumar Jivrajbhai	160280111025	Prof. P P Prajapati	In this era of shopping it is difficult to go, track things in a super market. We design this project for easy and smart shopping and solve this day-to-day life problem. In recent years, there have been rise in the number of applications based on Radio Frequency Identification (RFID) systems and have been successfully applied to different areas as diverse as transportation, health-care, agriculture, and hospitality industry to name a few. RFID technology facilitates automatic wireless identification using electronic passive and active tags with suitable readers.	
		Prajapati Jignesh Amarnath	160280111071			
		Savaliya Urvishkumar	160280111083			
13	Save birds	Kachhadiya Jemin Bharatbhai	160280111032	Prof. M C Sahoo	This project is totally based on helping hand to environment. With this project we can avoid plane accidents due to bird heating. Many birds are injured due to windmills, so we develop our project to save the birds from windmills. We can also protect the crop of the farmers by the birds. Because of the windmills so many birds are killed every year so we are planning to save their life and also human life by avoiding plane accidents.	
		Mansuri Adil Mustakbhai	160280111043			
		Pandya Het Ajaybhai	160280111050			

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14	Bus management using rfid	Khimaniya Keval Dayabhai	160280111037	Prof. M C Sahoo	On reviewing the past work of school bus tracking, monitoring and alerting system, there is a possibility to categorize various methodologies to identify new trends. This project makes use of the applicability of radio frequency identification (RFID) technology for tracking and monitoring children during their trip to and from school on school busses. And it has the advantage of efficient tracking capabilities, low cost and easy maintenance. The individual RFID tags are effective and it is used for tracking and monitoring children. If we use fire sensor in this project so that we can detect any fire accidents. Speed of the bus also can be calculated and send a message to the parents through GSM. The system consists of three main units, bus unit, parent unit and school unit. The bus unit is used to detect when a child enters exits from the bus using RFID card. This information is communicated to the parent unit and school unit that identify the message presence of children .The system track the school bus by the IOT and also gets an alert if the bus crosses the speed limit.	
		Parmar Bharat Kantilal	160280111054			
		Patel Tejashbhai Hashmukhbhai	160280111066			
15	Plant identification	Shrina Kumari	170283111041	Prof. A B Upadhyay	On the basis of plants we develop an application which would be able to identify the plant for the user. This application helpful to the users like farmer, nursery owner, person who loves planting and person who can use for the medical purpose. Our application would not only tell the user about the name of the plant but it would also give basic details about the plants with health benefits, suggestion of other similar plant which can be used for the same or other reason. Also it can give the characteristics of plant to the user like how much water it requires, which seasons are suitable for it and amount of needed pesticide or insecticide.	
		Padheriya Udaybhansinh Pradhyumansinh	160280111046			
		Raval Jemin Nirajbhai	160280111076			

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16	Smart sewage cleaning system	Chauhan Harshil Surendra	160280111011	Prof. A B Upadhyay	Over flow of sewage on roads is been a major problem in many developed and under developed cities as well. Sewage is generally considered as waste water. The response to the complaints is not properly answered or taken into account. A precautionary system is developed where this issue of sewage overflow can be reduced by early sensing of increase in its level. The system design comprises of a sensor to sense the level, a controller to command, a communication network to register the complaints on blockage and continues increase in the level of sewage. A data base is to be maintained to record the data. The system rather simply monitoring the level, it generates sounds using buzzer and now our project also including gas sensor based relay system.	
		Mashru Kush Jayeshkumar	160280111044			
		Prajapati Ronak Shaileshbhai	160280111072			
		Rao Heet Nilangbhai	160280111073			
17	Alcohol Detection Alert with Automatic Engine locking system	Mevada Parth Girishbhai	160280111045	Prof. S K Gonsai	We can understand there is a performance gap between system in a testing area and actual situation when technology is in its initial phase. So here come up with one system on similar line. Technology would how widely use is depends on convenience it provide to the user with best possible accuracy. So here in this case when drunk person would tries to start a car, system detect alcohol presence in his breath and lock the engine, so that he fail to start his car. When system detects the alcohol presence in breath it will send one message consisting person's location in the form of text message to his family.	
		Solanki Meet Amitkumar	160280111096			
		Vakil Anuj Jigneshkumar	160280111111			
18	Face recognition security system	Rathava Rekhaben Navalsinh	170283111036	Prof. S K Gonsai	This project is basically about security system using face recognition. Here we will use raspberry pi with image processing concept to detect the persons face. In many secret working project places or any companies where	

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		Ahir Dipakkumar Khodabhai	160280111002		only some specific persons are allowed to enter there we can implement the face recognition system which recognize the face of person and opens the door automatically. If a person comes whose data is not stored then the image of him will be sent to specific person of institution by using application and if operator allowsthe person to enter the premises by giving command through that application to open the door.	
		Patadiya Sanket Pareshbhai	160280111059			
19	Smart notice board	Parmar Parthraj Rajendrasinh	160280111057	Prof. S K Gonsai	Notice boards are commonly used in variety of institutions which we come across in a daily basis. In the present generation the advertisement notice boards are being managed manually. This process is difficult to involve in order to put a notices on the notice board. This waste a lot of things like paper printer ink, manpower and also brings the loss of time. In this project we have developed a system, transmit notices on a notice board using wi-fi. Wi-fi can pass information for about 100 meter distance with data rate of 1 or 2 Mbps. It can accesses numerous point and to support network interfaces. It also makes the system compatible with more than one wireless technology.	
		Desai Sahdev Bijalbhai	160280111016			
		Kanani Vivek Bhagvanjibhai	160280111033			
20	Bluetooth controlled home automation system	Rathod Hardik Ashwinbhai	140280111090	Prof. S K Gonsai	Technology is a never ending process. To be able to design a product using the current technology that will be beneficial to the lives of others is a huge contribution to the community. We design and implementation a low cost but yet flexible and secure cell phone based home automation system. The design is based on a standalone Arduino BT board and the home appliances are connected to the input output ports of this board via relays. The communication between the cell phone and the Arduino BT board is wireless. This system is designed to be low cost and scalable allowing variety of devices to	

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					be controlled with minimum changes to its core. Due to Password protection it is being used by only authorized users for accessing the appliances at home.	
21	Face identification attendance system	Tank Yesha Ketan	160280111102	Prof. S K Rana	The traditional approach for attendance is when the professor calls the students name & record attendance. This project helps in finding the cheapest and fastest way of performing the above action. We are about to use an automatic process which is based on image processing and neural networks. In this novel approach, we are using face detection & face recognition system. Preprocessing of the image is done and the face detection differentiates faces from non-faces and is, therefore, essential for accurate attendance. The camera module will be connected to the ESP32 module and camera will capture the image of the person/student entering the class. The extracted features will be compared with the images present in the database with the help of the neural network. Thus attendance will be uploaded on the server and this process is so convenient to record attendance. We can take attendance at any time.	
		Hathurusingha Anjalee Anuththara De Silva	160280111120			
		Pariya Urmilaben Mansukhbhai	170283111025			
22	Smart Accident Prevention System on Mountain Roads	Mukesh Barman	160280111121	Prof. S K Rana	Growth in population has led to growth in technology. Road accidents are undoubtedly the most frequent happening cases and overall, the cause of the most damage. There are many dangerous roads in the world like mountain roads, narrow curve roads and T roads. The problems in these curve roads is that the drivers are not able to see the vehicle or obstacles coming from another end of the curve. If the vehicle is in great speed then it is difficult to control and there are chances of falling off a	

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		Priyajit Pal	160280111123		cliff. Road network in India, of about 56 lakh km in March 2016, is one of the largest in the world. A total of 4,64,910 road accidents have been reported by States and Union Territories (UTs) in the calendar year 2017 claiming 1,47,913 lives and causing injuries to 4,70,975 persons. These figures translate, on an average, into 1274 accidents and 405 deaths every day or 53 accidents and 17 deaths every hour in the country. Hence there is a need of many road safety systems. Hence there is a need of many road safety systems. To avoid these problems in curve roads of mountain areas, we have proposed this vehicle accident prevention system. This accident prevention system using sensors is powered by Arduino board, it consists of IR sensors, LED lights.	
23	Caroid system	Damor Hirwa	140280111020	Prof. P P Prajapati	In today's life, car key loss is major issue for us. Therefore, we making a system such that we can lock the door of the car without using the key. Also we can turn on or off the engine car. These work have been achieved by using a mobile application.	
		Chaudhari Dhruval Rajubhai	150280111009			
		Patel Hastimal G.	150280111076			
24	Live cricket score board	Jacob Joy Hiteshbhai	170283111009	Prof. P P Prajapati	Every Cricket Fan wants to show up himself as a big fan. This is a Live Cricket Score Monitoring device, which shows live status of the match with a small LCD screen and portable rechargeable battery. This allows us to use it as a hand-held device like phone. The device will consist of LCD Screen, battery and charging circuit, ESP NodeMCU that will be fetching scores from the internet and will show on display when the button pressed. It will show details about teams, live score, overs, run-rate, as well as status of match.	
25	IOT based water distribution system using NODEMCU	Patel Safal Harkantbhai	170283111030	Prof. A J Kshatriya	Nowadays prevention of water from leakage and from unwanted distribution has become a major issue for the	

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		Chauhan Priyen Bharatkumar	170283111006		society. Every residential and commercial buildings face the same problem, but there are no any particular solution for that. To overcome this problem we propose an IOT based Water leakage and flow controlled system, which can be mentored and controlled from anywhere in the world. Flow sensor will be used to measure flow and ESP WEMOS board is used to process the server data. Water leakage sensor is used to detect the leakage. Onboard LCD will help in displaying the parameters. Also, there is a webpage where the society users can see the usage and graph of that on that using their ID. Also there is a payment portal, so users can value the water.	
26	Automatic Power Factor Control	Bansi Amipara	160280111009	Prof. A J Kshatriya	The power quality of the AC system has become a great concern due to the rapidly increased use of inductive loads in electronic equipment. We are wasting a part of the electrical energy everyday due to use of inductive loads results in low power factor. Hence, there is an urgent need to avoid this wastage of energy. Lower power factor results in poor reliability, safety problems and high energy cost. The lower your power factor, the less economically your system operates. Power factor correction is usually achieved by adding capacitive load to offset the inductive load present in the power system. The power factor of the power system is continuously changing due to differences in the size and number of the equipment being used at a time. This makes it challenging to balance the inductive and capacitive loads continuously. The design and development of a single-phase power factor correction using Arduino Uno micro-controlling chip, the proposed design has the skill to sense power factor efficiently and by using proper	
		Limbani Riddhi Rajanikant	160280111041			

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		Pipaliya Nensee Hareshbhai	160280111069		procedure enough capacitors are switched on in order to compensate the reactive power, thus withdraw PF near to unity as a result acquires higher efficiency and better quality	
27	Voice control wheelchair model using BT & Arduino	Valand Parth Mahendrakumar	170283111049	Prof. A J Kshatriya	This project is made for disabled or handicapped people who are depended on other people. We design and develop a wheelchair which is controlled by the human voice. There is speech recognition App is used in it. Because it reduces the cost of project. The speech recognition kit is costly around 4-5 thousand.	
		Jegola Maheshji Dazuji	170283111010			
28	Autonoumas vehical	Bamaniya Shubham Rameshbhai	160280111008	Prof. A J Kshatriya	Autonomous cars are the future smart cars anticipated to be driver less, efficient and crash avoiding ideal urbancar of the future. To reach this goal automakers have started working in this area to realized the potential and solve the challenges currently in this area to reach the expected outcome. In this regard the first challenge would be to customize and imbibe existing technology in conventional vehicle to translate them to a near expected autonomous car. This transition of conventional vehicles into an autonomous vehicle by adopting and implementing different upcoming technologies is discussed in this paper. This includes the objectives of autonomous vehicles and their implementation difficulties	
		Thakor Jagdishsinh Amrutji	160280111106			
		Panchal Dhattri Kamal	170283111024			
29	Automatic water dispenser	Dudhrejiya Jaykishan Vishnuprasad	160280111021	Prof. K R Sheth	The Automatic Water Dispenser is all in all a device to replace the tap water system. It is an electronic device which aims to cut down the water leakage problem observed in the traditional tap water systems. It features an Arduino Uno circuit which is controlling a Solenoid valve to dispense the water. An ultrasonic sensor detects when a glass is placed in the machine. When an empty	
		Tank Kashyap Muljibhai	160280111100			

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		Thakkar Krupal Pankajbhai	160280111104		glass is placed at a suitable distance from the ultrasonic sensor, the apparatus will be powered. After giving a voice command to the machine, the required amount of water will flow through the solenoid valve and fill the glass. It will continuously measure the level of water via ultrasonic sensor and after certain level of water reaches the glass then turn off the valve and removed from the machine.	
30	Iot mining tracking and worker safety helmet	Patel Digant Rajnikant	170283111029	Prof. K R Sheth	In present days many workers die in mining industries. The mining industry has the highest incidence of occupational deaths among all industries. Common causes of occupational deaths are fires explosions, rock falls, methane intoxication and electrocution. In one case study in china reveal that underground mining in China is the world's deadliest industry. So overcome this disaster we make an IOT based tracking and worker safety helmet. Worker work in mine by wearing this helmet so when he feels any danger regarding life in mine by just pressing the buzzer he can inform to the control room and save his life. This tracking system also inform to control system if worker are worked or not by GPS module.	
		Tailor Anjaliben Arvindkumar	170283111044			
		Gohil Nidhiben Thakorbhai	170283111008			
31	Dosecar	Bhati Komal Khumansinh	170283111003	Prof. D N Patel	This robot is used to carry a mold for medicine, then it takes the medicine from the medicine dropper, then moves further for the packing the mold and then delivers the packed medicine according to the prescribed dosage out and then goes back for another mold and this process is repeated by our robot. We have applied PID algorithm on 25 IR LED panel for the accurate movement of robot. We also installed an IMU in it for better understanding of the direction for robot. As the robot is used in packaging	IDP (Meditab)
		Nimesh Iyeshi Manojkumar	170283111023			

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		Purohit Shikhar Ashishkumar	170283111035		thus we need high accuracy because of that we need to install such components in it.	
32	Slam robo	Tyagi Shivam Shivnandan	160280111107	Prof. D N Patel	To create an autonomous robot which can navigate itself in indoor environments using Simultaneous Localization And Mapping (SLAM). Slam robo is a robot which can be used in warehouses. This robot will be designed to perform certain tasks like moving objects from one location to another optimally and by avoiding both active and inactive obstacles. The robot creates its own path by using various filters like Kalman filter, covariance intersection, graphslam and particle filter. Software like Robotics Operating System (ROS) and gazebo is used for simulation of SLAM Robot in real world environment.	IDP (Meditab)
		Vadadoriya Nayan Pravinbhai	160280111108			
		Surana Rahul	160280111098			
33	Current Sense in Multiple load using single Current Sensor and Short Circuit Protection	Ladani Fenilkumar Babubhai	160280111040	Prof. K V Patel	The solution is using single current sensor in series of power line we measure the current of each device by polling single load at a time and the load can be anything like inductive, capacitive or resistive, the thing which matter is only the reactance. After measuring current of each device we know the maximum current limit of each load, so we need to set the current limit programmatically. Now if any short circuit happens or if device takes the over current then the system will stop the power supply to that device and thus device will be safe. So this is project is combination of hardware and software. Aim is to provide solution of above problem statement and apply this solution in different fields where battery is used and current measurement and short circuit protection is required.	
		Vohra Alihussain Kayamali	160280111114			
34	Image Processing based smart car dashboard	Joshi Dev Bhavesh	160280111031	Prof. K V Patel	This project is based on image processing on Raspberry Pi 3B+ model using Opencv. This system can be installed	

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		Parmar Nayankumar Dipakbhai	160280111056		in cars, trucks and also trains. In this system, the driver will use government issued driving license which also works as RFID tag or transmitter. Upon taping the card, RFID receiver will fetch the details of the user. Then, the camera module connected to Raspberry Pi will identify the user through face recognition process and match it with the details fetched from RFID card with a pre-registered list of approved users. If the details do not match, the controller will send an alert notification and not allow the person to drive the vehicle. Moreover, the controller will also carry out drowsiness detection of the driver and send alert signal. In addition to that, the camera module will also be used for lane detection and stop sign detection in real time while driving.	
		Shah Saloni Vipulkumar	160280111090			
35	Wireless remote patient and athlete monitoring system	Akanksha Kumari	160280111003	Prof. S L Bharvad	The way care is being provided to critically ill patients has undergone a complete transformation in the recent decade. A Patient Monitoring System monitors the patient continuously and records physiological parameters like heart rate, pulse rate, body temperature blood pressure and many other parameters. This system helps to bridge the gap between the patient and doctor and helps a doctor to analyze the patient report time to time. It also helps in deciding when to visit the patient in case doctor is in some far place. These systems are quite useful for patients who needs physiological monitoring like patients just after an open heart surgery or the pregnant woman during labor and so on. Starting from the basic sensor interfacing with the microcontroller, we have thought of collecting the medical data of the patient and uploading it on cloud so that the data can be accessed anywhere by the doctor and then to accommodate more of technology we have then thought	
		Saparia Pavitra Vaishali	160280111082			

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		Vyas Kunjan Manishdev	160280111115		of incorporating Internet of Things into our project to increase ease of usage of final product. if	
36	Organizer	Panchal Raj Ashvin	160280111048	Prof. S L Bharvad	Our project is aimed at providing cost effective and general (specific in some areas) solution for IOT. The aim is to make things more approachable not only for the buyers but also to the layman who wants to be a developer. The app is to have an IT infrastructure and the updates in the form of newer and improved functionality as well as bringing IOT as a very user friendly and easy to approach technology. The app is accessible to not only IOT users but also others as an organizer for activities certain other features are aimed at providing free functions to the people not using IOT devices. The SOC is mainly aimed at cost-cutting and providing ease of access common development techniques.	
		Shah Kush Tejas	160280111088			
37	Automatic Trash Collecting Robot	Panchal Jalpit Harishkumar	160280111047	Prof. H B Tank	The world today faces major garbage crisis - the product of rapid overcrowding, poor urban planning, corrosive corruption, and political dysfunction. So we have tried to make this process automatic. We have made a robot that will detect and collect the garbage using Raspberry Pi and Arduino Mega. USB Webcam is used to capture the live frames. Firstly, it detects garbage using a Deep Learning algorithm. Once the trash (garbage) is detected, the system calculates the actual position of garbage like on the right side, left side or in the center and finds the distance of garbage from the camera using Raspberry Pi. If the garbage is not detected in the forward direction, then the robot is rotated 45 degrees left side and the robot will look for the garbage. The robot is rotated 45	
		Parmar Rajdeep Pravinbhai	160280111058			

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		Pithadiya Darshankumar Jayantibhai	160280111070		degrees left, until it detects the garbage. Finally, the robotic arm is used to pick up the garbage and places it into the container. The robot is designed to collect the garbage at footpath, public places (parks, schools, and colleges) and mostly cemented paths with good accuracy. The system can reduce manpower and human health issues and increase garbage collection efficiency with minimum maintenance cost.	
38	IOT Based Water Resource Management & Monitoring System	Agnihotri Rohit Shyamkumar	170283111001	Prof. H B Tank	In this project first, we measured the internal level of the water resource, then set this measured level point installed using hardware in the resources. With the help of IOT we can set the level of the water resources in application. After setting of the water resources management and monitoring system level, we can limit this level using ultrasonic sensor. Using ESP8266 Node MCU we can control and monitor the level of water continuously.	
		Makwana Hardik Sadabhai	170283111017			
		Solanki Jigarkumar Baldevbhai	170283111011			
39	Implementation And Integration of Micro-controller based control and monitoring application for test simulator of centralized interlock and protection module.	Rawat Pratiksha Sudarshankumar	160280111077	Prof. H B Tank	Interlock and Protection system plays a very vital role for safe and reliable operation of any complex system. Interlock system is a technical apparatus which monitors several parameters of the operating system in order to decide whether the system needs to be shut down/put into safe state to avoid any damage by providing appropriate action within predefined time scale. Gyrotron, which is an oscillator that can generate high power electromagnetic radiation at Cyclotron frequencies typically in the microwave and mm wave range. While operating the Gyrotron System, several faults and unacceptable conditions may be encountered. These events could have varying degrees of severity requiring mitigation through interlock action in appropriate time scales and failure of which may be	IDP (IPR)
		Sheth Ruchit Ketanbhai	160280111091			

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					detrimental for the Gyrotron tube and human safety. To handle such events Centralized Interlock & Protection Module (CIM) is designed. The main purpose of our project is to simulate and verify the performance of complete Centralized Interlock & Protection Module (CIM) system simultaneously using many dummy input signals with different types like analog, digital and optical signals. To achieve this, it is required to develop a Test Simulator/Jig which serves as a Multi-channel function generator using a microcontroller and to control it remotely, to test the CIM system. This instrument can also be used for testing Tokamak plasma diagnostic electronics circuits like amplifiers, filters etc. where many signals to be given in parallel to verify its functionality and calibration.	
40	Smart traffic control system with image processing on density based traffic	Bhatt Dhwani Mayurbhai	170283111004	Prof. N A Kotak	Nowadays, controlling the traffic becomes major issue because of rapid increase in automobiles and also because of large time delays between traffic lights. So, in order to rectify this problem, we will go for density based traffic lights system. In India, with the growing number of vehicles and traffic congestion at junctions has become a serious issue. The density of vehicles is increasing day by day and there is an urgent need of adaptive traffic signals which can do real time monitoring of traffic density. We design a system which uses image processing for regulating the traffic in an effective manner by taking images of traffic at a junction. A step by step approach of image acquisition, image processing and implementation of algorithm to change the traffic light duration as per the density of vehicles on different roads at a traffic signal is followed. The number of objects in a given image is counted and priority is given to the densest road.	
		Jinal Kamleshbhai Patel	160280111030			
		Vatsal Kariya	160280111035			
		Khatri Manthan Harshadbhai	160280111036			

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41	Border Security Robot	Akbari Avadh Manishbhai	160280111004	Prof. N A Kotak	Border patrolling system requires large number of soldiers should be involved in it. The problem in protecting borders is the need for human involvement in patrolling. To monitor the border in real-time with accuracy and minimize the need for human, multiple surveillance technologies, which complement each other are required. The main objective of our project is to implement the general idea of border security robot with wireless sensor network architecture for border patrol system. Our Border security robot utilize the various sensors of network, A PIR sensor for human detection, a metal detector to detect the presence of explosives and an Ultrasonic sensor for obstacle detect. In our design, various sensor for detection and controlling method using robot is proposed. Upon detection by these sensors immediate SMS is sent to the authority's mobile by using the GSM module. Then the user can control the robot by using GSM Module from any location. The GSM Module also deals with a system of tracking the location of the robot using GPRS and the GPS information is sent by the GSM module to authority's mobile through a SMS which is read and then through a GSM device user can move and control the robot from any remote place.	
		Dobariya Riddhish Harsukhbhai	160280111018			
		Sabhani Prince Ghanshyambhai	160280111079			
42	Power factor controller and regulator using gsm	Gamit Piyush Mahendrabhai	160280111024	Prof. N A Kotak	The project is designed to compensate of all three conditions of power factor i.e. Linear, lagging and leading choosing appropriate load. Power factor is defined as the ratio of real power to apparent power. This is applicable to reduce the power loss in industries by power factor compensation through a number of shunt capacitors. This results in reduction in amount of electrical bill for industries and commercial establishments. Further the project is enhanced by including a wireless monitor as	
		Parmar Jayantkumar Kanubhai	160280111055			
		Patel Devangkumar	160280111060			

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					well as control of this system. Using a GSM and android operate phone is communicated with the system over wireless serial communication. The status of PF and Load parameters can be viewed on phone.	
43	Extraction of facial expressions for Lie detection using image processing	Jingar Rushabhkumar Bharatbhai	170283111012	Prof. U V Unagar	Lie detection is an evolving subject. Polygraph techniques is the most trending so far, but a physical contact has to be maintained. The project proposes the lie detection by extracting facial expressions using image processing. The captured images to be analyzed is broken into facial parts like eyes, eyebrows, nose etc. Each facial parts is then studied to determine various emotions like eyebrows raised and pulled together, raised upper eyelids, lips stretched horizontally back to ears signifies fear while eyebrows down and together, narrowing of the lip shows anger. All the emotions can be aggregated to determine whether a person is lying or not. The interrogation video or live video is broke down into various facial images of the particular individual. Different emotions from the various images is collected and processed with the general face reading criteria to evaluate his truthfulness.	
		Raval Narayan Dharmendrabhai	170283111039			
		Surya Sathish	170283111043			
44	Home assistance	Ajmerwala Noman Jakirbhai	170283111002	Prof. U V Unagar	As the world is growing our life is also becoming busy and busy with every single day and that we also know and observe. With all of this the security is also the one of the main parts of our life and with this fastest evolving world. We always need and feel to have a more advance and smart safety. Consider another scenario where there is no one at home accept your and you want some information about something or else consider that you are hungry and you want to make something. Our system give you information about relative items or the recipe on your demand. The motive behind this device is not to	
		Parmar Jigarkumar Vishnubhai	170283111027			

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		Nai Kishankumar Dineshbhai	170283111021		solve any big problem but just to add some more comfort in our daily life.	
45	Automatic toll tax collection	Thakor Nileshkumar Mahendrabhai	170283111046	Prof. U V Unagar	The conventional toll tax is time consuming hence we came up with an idea to collect it digitally using image processing which saves time and avoids traffic. We detect the number plate of the different vehicle then convert into the text format. Then compare with our database for payment.	
		Twinkle Mirani	170283111047			
		Chauhan Mehulkumar Ganpatbhai	170283111005			
46	Smart baby monitoring system	Pawar Ashish Ashokbhai	170283111034	Prof. K H Gavit	This project presents a baby monitoring system for busy parents so that they can ensure proper care and safety of their babies. This system can detect the baby's motion and sound, especially crying and video output of baby's present position can be displayed on a display monitors. So that the mother and other responsible person can watch the baby while away from him or her. This baby monitoring system is capable to detecting motion and cry conditions of the baby automatically.	
		Joshi Khanjan Deepakbhai	170283111013			
		Modi Dhruv Sanjaykumar	170283111020			
47	Smart Scheduler	Patel Kartik Prakashbhai	160280111063	Prof. K H Gavit	In the present era of the technological revolution, the lives of the people are increasingly becoming hectic and busy. So by creating this application, we have tried to help people to bridge the gap between professional life and personal life. This is our attempt to help people managing their schedules and get time for their hobbies. We have tried our best to make the application more effective by adding as many features we can add. We welcome any feedback for making this application more effective or improving the user experience.	
		Patel Umang Rakeshkumar	160280111067			
		Shah Aayush Hemantkumar	160280111085			
48	Hand Exoskeleton For Rehabilitation Of Stroke And Paralysis Patient	Sondagar Dhavalkumar Rajendrabhai	160280111097	Prof. S V Bhuriya	In India, a major cause of disability is the stroke and it is the second highest cause of death after coronary heart disease. In addition, after stroke 88 % of the patients suffer from disability and stay at home. In this project, a	

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		Thakkar Aniket Vasudev	160280111103		post stroke therapeutic device has been designed for hand motor function rehabilitation that a stroke survivor can use for bilateral movement practice. Out of twenty-one degrees of freedom of hand fingers, the prototype of the hand exoskeleton allowed fifteen degrees of freedom. The device is designed to be portable so that the user can engage in other activities while using the device. A prototype of the device is fabricated to provide complete flexion and extension motion of individual fingers of the left hand (impaired hand) based on the movements of the right hand (healthy hand) fingers. User can monitor his progress on python based GUI In addition.	
		Yadav Milankumar Shambhubhai	160280111116			
49	RHSDUDL	Tanmay Pandey	160280111101	Prof. S V Bhuriya	The continuous motorization of traffic has led to a sustained increase in the global number of road related fatalities and injuries. However, especially in developing countries where the motorcycle is the main form of transportation, there is a lack of comprehensive data on the safety-critical behavioral metric of motorcycle helmet use. Therefore, keeping public safety in mind, there needs to be a mechanism for automatic helmet detection which can extract the number plates of those who don't wear helmets on roads. This project aims to solve this problem by automating the process of detecting the riders who are riding without helmets. Furthermore, the system also extracts the license plate so that it could be used to issue traffic violation tickets. The system implements machine learning and image processing techniques to detect riders, riding two-wheelers, who are not wearing helmets. The system takes a video of traffic on public roads as the input and detects moving objects in the scene. A machine learning	
		Yakubkumar Gamit	160280111117			

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		Yadav Anil Jairam	160284111001		classifier is applied to the moving object to identify if the moving object is a two-wheeler. If it is a two-wheeler, then another classifier is used to detect whether the rider is wearing a helmet. The license plate is provided as the output in case the rider is not wearing a helmet. This sort of automation will help the administration to issue helmet violation tickets more efficiently and ultimately aims to inhibit the violation by two-wheeler riders.	
50	Performance Analysis of High Speed VLSI Multipliers	Jethmalani Manish Rameshbhai	160280111029	Prof. S V Bhuriya	Adders are one of the most widely digital components in the digital integrated circuit design and are the necessary part of Digital Signal Processing (DSP) applications. With the advances in technology, researchers have tried and are trying to design adders which offer either high speed, low power consumption, less area or the combination of them. In this paper, the design of various adders such as Ripple Carry Adder, Carry Skip Adder, Carry Look Ahead Adder, Carry Save Adder, Carry Select Adder and Kogge-Stone Adder are discussed and are compared on the basis of their performance parameters such as delay and LUTs using Intel DE-10 Nano FPGA board (Cyclone V) with Verilog HDL in Altera Quartus Prime Software.	
		Thakkar Miral Ramesh	160280111105			
		Vaniya Hardik Natvarlal	160280111112			
51	Thief Protector Device	Chotaliya Jayesh	160280111013	Prof. K H Gavit	In this project, distance is measured by ultrasonic sensor hs04. The data of ultrasonic sensor hs04 will be given to Arduino Uno. Arduino will process that data and convert this data into distance in cm. If measured distance more than reference distance than the GSM Module send a message or call to the owner of the store/mall which gives the alert notification to the owner's mobile. Thief Protector is a model can serve in factories, malls, shops.	
		Kanojia Prashant C.	160280111034			
		Siddhpuriya Harsh P.	160280111034			