SV Name	Course	Student Name	Matrik	ETAC	IOT	Co-SV	New Title	New synopsis	Second moderation / Final decision
MUHAMMAD FAREQ BIN IBRAHIM	BEEA	MOHAMAD IMRAN IMAN BIN MOHD MUZAFAR	B081910030	This project is to develop a system that only allowed driver to start their car engine after check their alcohol level. If the alcohol level is higher than allowed, driver are not allowed to start the car engine and SMS will be sent to the close contact declare with the GPS coordinate of the driver. Microcontroller will be used as the main processor for the systems.	["Internet of Things"]	Nurul Kausar binti Ab Majid	Development of a Microcontroller-based Driver Alcohol Detection for Starting Car Engine using GSM and GPS.	This project is to develop a system that only allowed driver to start their car engine after check their alcohol level. If the alcohol level is higher than allowed, driver are not allowed to start the car engine and SMS will be sent to the close contact declare with the GPS coordinate of the driver. Microcontroller will be used as the main processor for the systems.	Proceed the project to the student
MUHAMMAD FAREQ BIN IBRAHIM	BEEA	MUHAMMAD DANISH BIN ABDUL RAZAK	B081910222	Practice-oriented	["Internet of Things"]	Amalia Aida binti Abd Halim	Development of IoT-based 2-axis Solar Tracker with Apps Monitoring system	This project is to develop a solar tracker that will automatically find the most highest solar that can be converted into an electricity. The tracker will have 2-axis movement. The monitoring can be done by using apps at smartphone that can monitor the electricity produced.	Proceed the project to the student
NURUL KAUSAR BINTI AB MAJID	BEEA	SUGANNTHI A/P THANABALAN	B081910050	Industry-based	["Internet of Things"]	Amalia Aida Abdul halim	Development of Iot-based Smart Shopping cart using RFID	Our whole shopping experience is often marred by the long checkout lines. This project will develop a smart shopping cart with IOT where a shopping trolley is equip with a RFID reader and all the items is tagged with RFID. The key idea here is to provide assistance in everyday shopping in terms of reduction in time spent, eliminating the daily hassle of locating the right product and standing in long lines. Overall, this system will ensure that the customers will have the best shopping experience	Proceed the project to the student
NURUL KAUSAR BINTI AB MAJID	BEEA	NISHANTHI A/P M SUBRAMANIAM	B081910345	Industry-based	["System Integration"]	Amalia Aida abd Halim	Development of tools monitoring in factory based on image processing	Observing & identifying a tools in a factory such as screwdriver and plier is very importance as it will effect the safety of the workers. generally, during the maintenance process, the tools is scattered on a floor and after finish the tools is kept in a tools box, however sometime there is still a missing tools that is still on a floor that will cause a danger to other workers that pass by the area. Digital image processing will automate the monitoring process on a floor to prevent any tools misplaced. The floor image are acquired by camera, and the tools is recognise by an image pre-prosessing. With proper algorithm, it will detect a danger on floor cause by a missing tools and will warn the workers of the area.	Proceed the project to the student
ROZILAWATI BINTI MOHD NOR	BEEA	KEVIN NG WEN HONG	B081910153	Practice-oriented	["System Integration"]		Development of an autonomous receiving parcel robot using arduino	This project will focusing on designing a prototype for parcel receiving robot. This robot will be develop using Arduino and also have a features to do line following and obstacle avoidance. A Line Following Robot is an autonomous robot which is able to follow either a black or white line that is drawn on the surface consisting of a contrasting color. It is designed to move automatically and follow the made plot line. The robot uses several sensors to identify the line thus assisting the robot to stay on the track. The array of four sensor makes its movement precise and flexible. The robot is driven by DC gear motors to control the movement of the wheels. The Arduino Uno interface is used to perform and implement algorithms to control the speed of the motors, steering the robot to travel along the line smoothly. This project aims to implement the algorithm and control the movement of their robot by proper tuning of the control parameters and thus achieve better performance. After arrive the destination, this robot will received parcel and go back to the starting point. This prototype will be use for house	Proceed the project to the student
ROZILAWATI BINTI MOHD NOR	BEEA	NARESH A/L MARAN	B081910013	Practice-oriented	["System Integration"]		Development of glass wall cleaning robot using Arduino	Stunning and modern houses nowadays have been constructed with increasing number of curtain window glass walls and corresponds to the requirement of its maintenance, repair and care from dust and pollution. This window produces a lot of difficulties such as the window height and the exposure to the risk of hurt or injury during the cleaning process. A window cleaning robot by using Arduino Mega as microcontroller is developed with neodymium magnet, ultrasonic sensors, DC motor, servo motor, motor driver and buzzer. Neodymium magnet is used to attach the window robot vertically on the surface of glass wall whereas servomotor will move the robot accordingly. To detect an obstacle or the robot reached at the edge of panel at about 3 cm, an ultrasonic sensors are used to notify and enable the DC motor to change its current path. When all four sides of the edge of panel window is detected, the robot will turn on a buzzer continuously to notify user that glass window cleaning process is completed successfully.	Proceed the project to the student
SHAHRUDIN BIN ZAKARIA	BEEA	KIRAN ANANDRAJ A/L RAVINDRA KUMAR	B081910213	Practice-oriented	["Simulation","System Integration"]		Development of a Visual Information System Based on a Industrial Automation System A using VB.NET	Sub-Stations in various industries come in many forms and process different works. Among the objectives of this project is to enrich the world of learning to approach the real situation of manufacturing in the form of more detailed sub-stations (more information can be observed more meaningfully), where this will further strengthen the world of technical-based manufacturing of automation system. A Visual material is a form of data that is more interesting and full of detailed information compared to other types of sensing such as sound, touch and so on. It is especially useful, for higher degree of automation work or as a more effective manual verification (human assessment). In this project, this visual system information will be useful to convey more complex forms of the station system so that the situation will be more understandable, especially when dealing with relatively odd and rare processes (or need to monitor unforeseen or dangerous problems at these stations). Therefore, the development of such station models is planned to have a visual system to assist in providing a more effective comprehension. The method will use one of the languages in Microsoft Visual Studio, where it has been proven to be able to build Windows based software very effective.	Proceed the project to the student. Automation System A to be renamed after the specific system is decided by the studdent
SHAHRUDIN BIN ZAKARIA	BEEA	MOHAMAD AIMAN ZAFIR BIN ABDULLAH	B081910225	Practice-oriented	["NOT RELATED to IR4.0","Simulation"]		Development of a Visual Information System Based on a Industrial Automation System B Using VB.NET	Sub-Stations in various industries come in many forms and process different works. Among the objectives of this project is to enrich the world of learning to approach the real situation of manufacturing in the form of more detailed sub-stations (more information can be observed more meaningfully), where this will further strengthen the world of technical-based manufacturing of automation system. A Visual material is a form of data that is more interesting and full of detailed information compared to other types of sensing such as sound, touch and so on. It is especially useful, for higher degree of automation work or as a more effective manual verification (human assessment). In this project, this visual system information will be useful to convey more complex forms of the station system so that the situation will be more understandable, especially when dealing with relatively odd and rare processes (or need to monitor unforeseen or dangerous problems at these stations). Therefore, the development of such station models is planned to have a visual system to assist in providing a more effective comprehension. The method will use one of the languages in Microsoft Visual Studio, where it has been proven to be able to build Windows based software very effective.	Proceed the project to the student. Automation System B to be renamed after the specific system is decided by the studdent
SHAHRUDIN BIN ZAKARIA	BEEA	SHARMMARAGAN A/L MURALI	B081910045	Practice-oriented	["Simulation","System Integration"]		Development of a Visual Information System Based on a Industrial Automation System C Using VB.NET	Sub-Stations in various industries come in many forms and process different works. Among the objectives of this project is to enrich the world of learning to approach the real situation of manufacturing in the form of more detailed sub-stations (more information can be observed more meaningfully), where this will further strengthen the world of technical-based manufacturing of automation system. A Visual material is a form of data that is more interesting and full of detailed information compared to other types of sensing such as sound, touch and so on. It is especially useful, for higher degree of automation work or as a more effective manual verification (human assessment). In this project, this visual system information will be useful to convey more complex forms of the station system so that the situation will be more understandable, especially when dealing with relatively odd and rare processes (or need to monitor unforeseen or dangerous problems at these stations). Therefore, the development of such station models is planned to have a visual system to assist in providing a more effective comprehension. The method will use one of the languages in Microsoft Visual Studio, where it has been proven to be able to build Windows based software very effective.	Proceed the project to the student. Automation System C to be renamed after the specific system is decided by the studdent
SITI NUR SUHAILA BINTI MIRIN	BEEA	FAISAL HAKIM BIN MOHD SUHAIDI	B081910070	Practice-oriented	["System Integration"]		Development of monkey repellent using liquid spray for outdoor space	The purpose of this research is to design and build a wild monkey pest repellent device with combination of motion sensor based on microcontroller as system controller. The motion sensor is used to detect the presence of wild monkey objects and trigger motor to spray liquid repellent to chase wild monkey away	Proceed the project to the student
SITI NUR SUHAILA BINTI MIRIN	BEEA	LEE YI KENT	B081910312	Practice-oriented	["Internet of Things"]		Development of IoT-based Kids' Smart Activity Tracker with Seizure Detection Capability	Seizure, or called as Epilepsy, is a disorder of the nervous system in brain that will causes change of behavior, movement, or feelings. From research in these recent years, there are about 3.4 million people with seizures and 470,000 are children. This means that there will be 6 students with seizures from 1000 of them and evidence shows that it is linked to some virus when a child's developing brain reacts to high fever. The common type of seizure in children is from fever, or called as febrile seizure, might happen to kids from 6 months to 5 years old with fever above 38°C (100.4°F). Because human brain is not fully development at that age, it will extend the period of growth and maturation of a kid. The aim of this development is to parents monitor the body temperature of their kids in anytime and anywhere. When the body temperature of the kid almost trigger or suddenly triggered the temperature that will cause seizure, the system will send out emergency notification via parents smart	Proceed the project to the student

SITI NUR SUHAILA BINTI MIRIN	BEEA	IRFAAN NAZMI BIN ROSLEY	B081910427	Practice-oriented	["Simulation"]		Development of Ultrasonic Distance Measuring Robot for Industrial Use	An ultrasonic distance measuring robot is an automated robot which can perform multiple actions such as it gives the actual position of an object or an obstacle which comes in front of it while measuring its distance. Using the ultrasonic waves for distance measurement where the ultrasonic transducer measures the amount of time taken by a pulse of sound to travel a particular surface and return back as the reflected echo. It will calculate the distance measured by the speed of sound. It can be used in car collision avoidance system that detects the proximity of the surrounding. Or also in the interior design business, before the designer can move things around and decorate a certain room, they have to know the exact area of the room but they have to measure it manually. That certainly will take up time and energy. So, would not it be easier if they have a certain tool or device that can measure distances automatically. A previous research states that the application of this when done correctly, can be very wide like rescue operations, spy robot, mining, toy industry, agriculture and many more.	Proceed the project to the student
TS. AMINURRASHID BIN NOORDIN	BEEA	ABDUL HADI BIN FADZIL	B081910269	Industry-based	["NOT RELATED to IR4.0"]		Development of gripper mechanism 1 for Cone Collect and Laying Machine using PLC system.	This project is part of R&D between IETS Sdn Bhd collaborated with PLUS Sdn Bhd. Currently, semi-auto Cone Collect and Laying (C2L) Machine has successfully developed and being tested by PLUS sub-contractor at Mambau Highway, Port Dickson, Negeri Sembilan. Therefore, for the next phase development is about fully automatic for Cone Collect and Laying Machine. Hence, the primary objective of this PSM is to develop the cone gripper mechanism using motor dc and PLC based system. This gripper is mounted to a pole, and the mechanism slides up once the cone being grabbed without slipped during manoeuvre. The gripper will be put through a reliability test to assess how long it can last during the procedure.	Proceed the project to the student. Gripper mechanism 1 is suggested to be renamed after the project is sucessfully developed by the student
TS. AMINURRASHID BIN NOORDIN	BEEA	MUHAMMAD HARITH BIN NAWI	B081910200	Industry-based	["NOT RELATED to IR4.0"]		Development of gripper mechanism 2 for Cone Collect and Laying Machine using PLC system.	This project is part of R&D between IETS Sdn Bhd collaborated with PLUS Sdn Bhd. Currently, semi-auto Cone Collect and Laying (C2L) Machine has successfully developed and being tested by PLUS sub-contractor at Mambau Highway, Port Dickson, Negeri Sembilan. Therefore, for the next phase development is about fully automatic for Cone Collect and Laying Machine. Hence, the primary objective of this PSM is to develop the cone gripper mechanism using motor dc and PLC based system. This gripper is mounted to a pole, and the mechanism slides up once the cone being grabbed without slipped during manoeuvre. The gripper will be put through a reliability test to assess how long it can last during the procedure.	Proceed the project to the student. Gripper mechanism 2 is siggested to be renamed after the project is sucessfully developed by the student
TS. DR. SAHAZATI BINTI MD. ROZALI	BEEA	HAZMAN HAKIM BIN HASAN	B081910243	Practice-oriented	["Cloud Computing"]		Development of Controller for Temperature Kit System Using Virtual Monitoring Principle	Due to movement control order for these two years, it is difficult for lecturer to organize the experiment which involve the equipment in laboratory since all teaching and learning process is required to be in online mode. Most of the lecturer convert the experiment in laboratory session with simulation experiment only. This project is proposed to ensure all experiment in laboratory still can be handled by involving equipment by having virtual controller and monitoring system which can be connected to the computer outside of the laboratory. Suitable software will be used and GUI will be developed in this project. At the end of this project, module and teaching and learning kit that can be used by all students is expected to be produced.	Proceed the project to the student
TS. DR. SAHAZATI BINTI MD. ROZALI	BEEA	NICK CARTER ANAK WILLIAM	B081910174	Practice-oriented	["System Integration"]		Design of Drunk Detector System in a Car Using Microcontroller	Drunk driver contribute as one of the main causes for car accident in our country. In this project, drunk detector system is proposed to be attached in a car system such that the drunk driver fail to drive that car.	Proceed the project to the student
TS. DR. SYED NAJIB BIN SYED SALIM	BEEA	NURUL ATIKAH BINTI DAUD	B081910025	Practice-oriented	["Internet of Things","System Integration"]		Development of Flood Monitoring System with Alerting System based on data collection via IoT application	1. To develop flood Monitoring system complete with alerting system using Arduino, 2)To integrate the system with IoT for data collection that can be saved for future use, 3) Analyze the performance of the system based on consistency and the ability of the system to provide the information.	Proceed the project to the student
TS. MASLAN BIN ZAINON	BEEA	MOHAMAD AIMAN HAKIM BIN MOHAMMAD HASSAN	B081910058	Practice-oriented	["Internet of Things","System Integration"]		Development of an IoT-based Smart Home Security System using Face Recognition	This project is about home security automation. Traditional methods of securing home are lacking security features and quite easily breakable. To overcome these deficiencies, an IoT-based security system with face recognition is proposed to secure access of a home main entrance with more efficient and solid security system. Raspberry Pi and Arduino microcontrollers, which are programmable of small computer boards will be used for face recognition and locking system. A camera will capture a face image of a person for image processing that will then send to the homeowner via IoT technology to his/her smartphone for control and monitoring of the main entrance.	Proceed the project to the student
TS. MASLAN BIN ZAINON	BEEA	MUHAMMAD AFIQ BIN AHMAD FAUZI	B081910063	Practice-oriented	["Internet of Things","System Integration"]		Development of an IoT-based Smart Shoe via Bluetooth with GPS Tracking System	This project is about an IoT-based product. Our current market is still lacking affordable product of smart shoes for health monitoring and location finder. Shoe's functions can be improved by using technologies that enable a comprehensive view of an individual's movement and mobility, potentially supporting healthy living as well as complementing medical diagnostics and the monitoring of therapeutic outcomes. Besides that, it can measure athletic performance by tracking fitness and evaluating health metrics. In other words, it can provide personalized health feedback to users. This smart shoe consists of steps counting	Proceed the project to the student
TS. MASLAN BIN ZAINON	BEEA	DANISH A/L MOHANA DAS	B081910149	Practice-oriented	["Internet of Things","System Integration"]		Development of an IoT-based Smart Agriculture using Arduino and Green Technology	This project is about an IoT-based system. We foresee agriculture industries are still lacking IoT-based technologies globally. This so called IoT technology is one of important technologies to be used a tool to improve the current manual farming to the next level. IoT technology in agriculture enables farmers to monitor vital information such as humidity, air temperature, light intensity, and soil quality using remote sensors whereby its whole operation is controlled by a microcontroller (Arduino board/module) that is powered by a solar photovoltaics system (green technology). Watering and fertilizing systems can be controlled and implemented automatically with ease. All the information that are received from the remote sensors can also be easily monitored via smartphones. In this case, users will have better control and monitoring of their crop's qualities and	Proceed the project to the student
TS. MOHAMED AZMI BIN SAID	BEEA	sa	B081910210	Practice-oriented	["System Integration"]		Development of ALSA-003A Lynxmotion Robot Arm Controller Using C#	Derive robot arm forward and inverse kinematics . Write C# program to control robot motion. Run and test robot ALSA-003A robot controller.	Proceed the project to the student
TS. MOHAMED AZMI BIN SAID	BEEA	DANIAL IKHWAN CHUNG JOON LAM	B081910304	Practice-oriented	["System Integration"]		Design and Development of Pineapple Tart Machine Production Process Utilizing Control Area Network (CAN)	Design input sensor and output actuator required for pineapple tart machine. Assemble controller and I/O using CAN network. Run and test the pineapple tart machine.	Proceed the project to the student
TS. MOHAMED AZMI BIN SAID	BEEA	DANIEL SYAFIQ BIN MOHD RODZMAN	B081910214	Practice-oriented	["System Integration"]		The development of IoT-based Smart Lawn Mower With Solar Panel	a) Design and Development of Automatic and Controlled Lawn Mower with Solar Panel (power source by Battery and Solar Power) b) Write C# or C++ program to each motor driver for Servo Motor for Lawn Mower Blade and DC Motor for Wheel Controller System. c) Run and Test the Lawn Mower Machine This system will make easier for cutting grass and also with the help of the automatic or can be controller with an Apps or	Proceed the project to the student
TS. MOHD HANIF BIN CHE HASAN	BEEA	NIK NABIL ILMAN BIN NIK ROSELI	B081910339	Practice-oriented	["System Integration","Internet of Things"]		Development of Electric Vehicle Information Panel Dashboard using Raspberry Pi	This project is using raspberry pi to develop a custom electric vehicle meter panel. Via digital touch screen installed, a graphic meter display from raspberry pi is displayed in real-time on the vehicle dashboard. The panel is capable to show the vehicle speed, motor speed (RPM), percentage of battery, and milage recorder (odometer). Besides, the system is equipped with intelligent features to prompt the driver for any critical situation such as over speed, battery weak, motor hot, and overload. The mini electric go-kart developed by Autotronic Research Team, FKM-UTeM will be used for testing.	Proceed the project to the student
TS. MOHD HANIF BIN CHE HASAN	BEEA	AMIR ASHRAFF BIN ISMAIL	B081910122	Practice-oriented	["System Integration"]		Implementation of Vector Control on Electric Vehicle Traction System by using Arduino	The main aim of the research is to apply the vector control method to the traction control system of an electric vehicle. The vehicle uses two PMSM motors on the rear wheels while the two front wheels are used for steering. By using Arduino as an ECU, the control algorithm will be proposed and implemented. The mini electric go-kart developed by Autotronic Research Team, FKM-UTeM will be used for testing.	Proceed the project to the student
TS. MOHD HANIF BIN CHE HASAN	BEEA	MUHAMAD NURFADZLI BIN AHMAD	B081910211	Practice-oriented	["Internet of Things","System Integration"]		Development of Vehicle Data Logger using Raspberry Pi	A Vehicle data logger is an instrument used to capture all important information related to the vehicle. The data obtained will be used to improve the performance, stability, and comfort of a vehicle. Therefore, this project focuses on the data capturing method via sensors and observers to obtain steering, braking, acceleration, as well as vehicle body roll, pitch, and yaw information. The recorded data can be downloaded easily by users and analysed by simple data processors such as Microsoft excel. The mini electric go-kart developed by Autotronic Research Team, FKM-UTeM will be used for testing.	Proceed the project to the student
TS. MOHD RAZALI BIN MOHAMAD SAPIEE	BEEA	MUHAMMAD HAZIQ HAZWAN BIN HISHAMUDIN	B081910129	Practice-oriented	["Internet of Things"]		Development of IoT Based Saving Box Using Arduino	The saving box is used to keep money in form of coins or paper money numerations. The box should be able to detect and sense the money once inserted into the box through slot, count the money and determine the values inserted. The total money value in the box will be display outside of the box. At the same time, the same total value can be displayed using app in different coin and paper money values by using IoT.	Proceed the project to the student
TS. MOHD RAZALI BIN MOHAMAD SAPIEE	BEEA	AINUL BALQIS BINTI HAIRUDDIN	B081910226	Practice-oriented	["Internet of Things"]		Development of IOT-based Weather Monitoring and Reporting System Using Arduino	This project is to develop a kind of weather station that can allow user to access local weather data where the wheather station is located from anywhere in real-time. The real-time weather station is used to collect data related to the weather and environment using related sensors. It can be used for measuring atmospheric conditions like temperature, humidity and air pressure to provide information for weather forecasts and to study the weather and climate. Due to the fact that without weather station, user can't be alerted of the strong winds, heat waves or any other weather-related emergency. This means that we need weather station to make forecasts and collects data related to the weather. This project will use Internet of Things with sensors to build weather station. The weather station can help provide data for forecasts. Once a weather station is connected, user can view the current data and its history through app.	Proceed the project to the student

TS. MOHD RAZALI BIN MOHAMAD SAPIEE	BEEA	MUHAMMAD HAIDIR BIN AZMAN	B081910349	Practice-oriented	["Internet of Things"]		Development of IoT Based Home System Automation Using Arduino	The home automation system has been implemented for many years but due cost and budget for a complete home automation, it remains a niche product for high-end consumers. In the Intelligent Home Automation System, security is one of the major factors that does not implement the home automation system. The hectic daily life routine sometimes makes ourselves such in a hurry situation that sometimes makes us forgot to switch off the lamps and other electrical appliances. It will be a waste in electricity consumption and increase electricy bill. Besides, it is one of the electricity wastage that will lead the earth became an unhealthy one. The strength of this project is it can control many devices such as lamp and door at home using a smartphone and report the swith and security status using app through the application of IoT.	Proceed the project to the student
TS. RAMLAN BIN LATIP	BEEA	KHUZAIRI AIMAN BIN MADSAN	B081910125	Industry-based	["NOT RELATED to IR4.0"]	TS. MUHAMAD FALIHAN BIN BAHARI	Development of Motor Starter Control System for Three Phase Motor using Variable Frequency Drive Integrated with PLC	In electrical motor application in industry, one of the issue faced is the motor starting current or inrush current. Inrush current during motor starting can be more than 3 times of normal running current. In industry which has a large numbers of motor, this may affect the total operation of the industry and may require further co-ordination to start the motors to avoid a large of power flow if it is switch on simultaneously. The exaggerated current may also effect the lifespan of the three phase motor. The objective of this project is to design and develop the hardware in order to produce the lowest and smooth starting current. PLC will be used to program input to the variable frequency drive to control motor starting system. Power Quality Analyzer will be used to monitor the inrush current during motor starting. Based on the result and analysis, a better motor control system will be developed which will improve the operation and life span of the three phase motor.	Proceed the project to the student
TS. RAMLAN BIN LATIP	BEEA	ARWIND RAJ A/L BALACHANTHAR	B081910113	Practice-oriented	["Simulation"]	CHE WAN MOHD FAIZAL BIN CHE WAN MOHD ZALANI	Analysis of Lighting System Efficiency using Dialux Software for Industrial Automation Labs	Certain lab in FTKEE facing insufficient lux reading as required by the Malaysia Standard MS1525. The objective of the project is to do the simulation in order to achieve the best lighting layout, type of lighting and minimum annual power consumption. AutoCAD software will be use to draft the layout and size of the labs. Based on the draft layout, Dialux software will be used the create the simulation to produce the lux reading and power consumption result and analysis. The result and analysis will be used to determine the best lighting layout, type of lighting and minimum annual power consumption. The project will be focussed on industrial automation lab, such as Robotic Labs, FMS lab, and Pneumatic & Hydraulic lab	Proceed the project to the student
TS. ROSNAINI BINTI RAMLI	BEEA	KOSYALAN A/L SIVASUNDRAM	B081910334	Practice-oriented	["Internet of Things"]		Development of An IoT-based Automated Irrigation System Using Weather-based Controller	Malaysia , being a tropical country with hot weather and heavy rainfall can be an advantage for a successfull agriculture activity. However, since water is a vital and importance resouces in agriculture, it is crucial to optimize the water usage to reduce cost and wastage. In this project, it is aimed to develop an automated irrigation system based on weather conditions by using weather data from the Internet and then connected to the microcontroller whereby it will set the appropriate watering schedule for the plants. This information will then be transmitted to the user's mobile phone via Internet.	Proceed the project to the student
TS. ROSNAINI BINTI RAMLI	BEEA	MOHAMMAD DANIEL HAKIMI BIN MOHAMMAD DENIS	B081910010	Practice-oriented	["Internet of Things"]		Development of IoT-based Smart Water Quality Monitoring System for Bore Water Source.	Due to on-going water supply crisis in Kelantan, many households there opt to get water from underground (bore water) as an alternative water supply. However, this water may not be suitable for household usages as the water quality is not being monitored to check the health status of the water. This project is aimed to provide a smart water quality monitoring system on the water's turbidity and pH level so that it is suitable to be used for household usages. The system consists of pH sensor and turbidity sensor and then the measured values from the sensors can be processed by Arduino model. Finally, the sensor data can be viewed on Internet using WI-FI system.	Proceed the project to the student
TS. SALEHA BINTI MOHAMAD SALEH	BEEA	RISHITHRAN A/L NYANASAGARAN	B081910423	Practice-oriented	["Internet of Things"]		Development of Water Leakage Pipeline Monitoring System with GSM Connectivity	Aim of this project is to develop an intelligent monitoring system for water leakage detection in the water distribution system. Leakage constitutes a major loss of water when supplied through pipeline systems. Introducing automated leakage detection systems would save huge amount of water. The first part is a real-time water leakage detection system using flow sensor. The second is the controlling part; it will use Arduino to control the solenoid valve and alarm based on Global System for Mobile technology (GSM) to send message through application to the owner. The result of using the proposed system is improving the efficiency of operation, reducing delay time and cost of maintenance pipelines after leakage detection.	Proceed the project to the student
TS. SALEHA BINTI MOHAMAD SALEH	BEEA	MUHAMMAD AMZAR BIN LOKMAN	B081910053	Practice-oriented	["Internet of Things"]		Development of IoT-based Elderly Condition Monitoring and Alert System using Wearable Sensors	Some elders do not have any person to watch over for them when unexpected outcome that may happen. This project proposes a system to alert others when the elder in dangerous situation. This system consists of several sensors to detect the pulse rate and the oxygen peripheral oxygen saturation in the patient body and also detect the fall condition. It will automatically send the message to their caregivers or call the ambulance based on the location provided by the GPS from the	Proceed the project to the student
TS. SALEHA BINTI MOHAMAD SALEH	BEEA	MOHAMED AIMAN BIN ISMAIL	B081910054	Practice-oriented	["Internet of Things"]		Development of IoT-based Smart Farming Monitoring System for Agriculture Application using Arduino	The aim of this project is to help farmers monitor plants that need extra care with the help of Arduino and IoT. Four important key parameters of a soil will be measured are air temperature, air humidity, soil moisture and soil pH. It is a portable and low-cost device that will have instantaneous transmission data between sensors and smartphone using wifi. Feedback system will be incorporated in the device to further aid farmers in improving the soil through an automated water system and warning notifications from the smartphone. The plant chosen for this project is a vegetable called tomato and it is hard to grow tomatoes in Malaysia because the climate is too hot. Tomatoes can grow between 20-31 C but it will not set fruit when the temperature hits 30 C. Tomatoes need to be 20% to 60% moisturised with an ideal humidity of 70-90% to keep it healthy. The pH for the soil also has to remain on the 4.3-4.9 pH level so the tomato can grow. The fulfillment of growing a healthy tomato tree will determine the successfulness of this project.	Proceed the project to the student
TS. SULAIMAN BIN SABIKAN	BEEA	MUHAMAD FARIDZUAN BIN JAINURI	B081910348	Industry-based	["Cloud Computing","Simulation"]		PCB Design Process and Fabrication Using Cloud Based Electronic Design Automation Software	Nowadays, many users have mainly been interested in online, open-source or free to use software because most are simple, more straightforward, friendly, and powerful enough without paying for software's licences. One of the areas that can be produced with free Cloud-Based software is PCB design with fabrication service included in a single platform. Electronic design automation (EDA) or electronic computer-aided design (ECAD) is a category of software tools for designing electronic systems such as integrated circuits and printed circuit boards available in offline or online modes. The main project objectives are to study the detailed process in the PCB design and development available in the market and identify the advantage and disadvantages of that PCB development process between Cloud Based Electronic Design Automation Software and paid PCB design software, for instance, Proteus and Orcad. At the same time, students need to design and fabricate the actual PCB using that Cloud-Based software. The expected outcome from this project is that a student will be an expert with any Cloud-Based PCB design software to produce a PCB board in an easy and faster way. To strengthen their skills and knowledge, students are encouraged to offer short course training and assist other students in developing the PCB board. Students with good experience	Proceed the project to the student
TS. SULAIMAN BIN SABIKAN	BEEA	MALCOLM LIMBING FRANKLIN	B081910164	Industry-based	["Internet of Things","System Integration"]		Development of Household Gas Detector Alarm with Internet Connection Capability	Household Gas Detector Alarm is a home-use device that can detect gas leaking, which usually stems from the cooking place. In this project, the Gas Detector Alarm will detect gas leaks and abnormal loud noise. This equipment will use own-design of microcontroller PCB board to obtain data from the gas and sound sensor, establish the connectivity to the internet and control the lamp indicator. It will be powered with 5V DC, and the data can be monitored from smartphone application software at any time. All alarms generated will be sent to the host via smartphone as well. Therefore, this project will involve many topics, such as PCB design and fabrication, microcontroller circuit design, internet connectivity circuit, sensors interfacing circuit, microcontroller programming, sensors calibration, prototype development, experimental and data analysis. The expected outcome from this project is a prototype of a Household Gas Detector Alarm equipment with internet connection capability, easy to install and practical for home users.	Proceed the project to the student
TS. SULAIMAN BIN SABIKAN	BEEA	MUHAMMAD SYAKIF IEMRAN BIN SABRI	B081910273	Industry-based	["Internet of Things","System Integration"]		Development of IoT Based Home Weather Station Equipment to Measure Wind Speed and Direction	Home Weather Station is a home-use device that collects data related to weather and environment using one or many different sensors in the outdoor environment. In this project, the meteorological parameters to observe are wind speed and direction. This equipment will use own-design of microcontroller PCB board to obtain data from wind sensors, establish the connectivity to the internet and control the lamp indicator. It will be powered with 5V DC, and all data obtained can be monitored from smartphone application software. Therefore, this project will involve many topics, such as PCB design and fabrication, microcontroller circuit design, internet connectivity circuit, sensors interfacing circuit, microcontroller programming, sensors calibration, prototype development, experimental and data analysis. The expected outcome from this project is a prototype of a Home Weather Station equipment with internet connection capability, easy to install and practical for home users.	Proceed the project to the student
AHMAD IDIL BIN ABDUL RAHMAN	BEEA	NORAZIRA UMAIRAH BINTI HISHAMUDDIN	B081910078	Industry-based	["System Integration"]	JOHAR AKBAR BIN MOHAMAT GANI	Development of Vision-Based System for Classification and Grading of Tomatoes Using Image Processing Techniques.	The aim of this project is to develop an automation system using machine vision technique. Student will develop hardware station for sorting process integrate with classification algorithm using Matlab and computer.	Proceed the project to the student
AHMAD IDIL BIN ABDUL RAHMAN	BEEA	AINI FATHIHAH BINTI MOHAMMAD ZAKRI	B081910365	Practice-oriented	["Internet of Things","System Integration"]	JOHAR AKBAR BIN MOHAMAT GANI	Development of Health Monitoring System Using Thermal Image Processing.	The aim of this project is to design and develop health monitoring system using thermal camera and image processing technique. The signal measure such as respiratory rate, heart rate and body temperature.	Proceed the project to the student
AHMAD IDIL BIN ABDUL RAHMAN	BEEA	MUHAMMAD ZULHILMI BIN FAZLI	B081910337	Practice-oriented	["Internet of Things","System Integration"]	JOHAR AKBAR BIN MOHAMAT GANI	Development of IOT-based Automated Hydroponic System using NodeMCU.	The aim of this project is to design and develop hydroponic system that control temperature, water level and moisture.	Proceed the project to the student
TS. DR. ALIZA BINTI CHE AMRAN	BEEA	NURUL HUSNA BINTI MOHD RUSHLI	B081910014						
TS. DR. ALIZA BINTI CHE AMRAN	BEEA	HAZWAN HISHAM BIN BADRUL HISHAM	B081910141						
TS. DR. SYED NAJIB BIN SYED SALIM	BEEA	MUHAMMAD HAZWAN FIRDAUS BIN MOHAMAD HAZLI	B081910159	Practice-oriented	["Internet of Things","System Integration"]		Development of IoT-based rain detection with smart notification system	Objective 1. To develop a system that can detect the presence of rain outside building 2. To develop a smart rain notification system for inhabitant living in a non-window office room using iot 3. To analyse sensor performance in detecting rain either light, moderate or heavy	Proceed the project to the student