CODE	TITLE	APPLICATION / DESCRIPTION
VTES01	A Robust Internet of Things-Based Aquarium Control System	**Description**: The development of this system was to overcome the problem of aquarium control by remote users. An accurate and real-time system is needed to monitor the aquarium so that it does not reach dangerous and critical points, such as in the case of an increase in water temperature. We did tests by developing an aquarium system connected to a server and an application that acts as a controller
VTES02	An Optical-Based Sensor for Automotive Exhaust Gas Temperature Measurement	**Description:** The aim of this study is to apply and examine an exhaust gas temperature (EGT) measurement method which is critical to optimal vehicle operation and effective emissions reduction
VTES03	Design, Development and Evaluation of an Intelligent Animal Repelling System for Crop Protection Based on Embedded Edge-AI	**Description:** We focus on a Smart Agriculture application that aims to protect crops from ungulate attacks, and therefore to significantly reduce production losses, through the creation of virtual fences that take advantage of computer vision and ultrasound emission.
VTES04	Differential Private Motion Sensor and Wasted Energy in Building Energy Management System	**Description:** This paper proposes a modified truncated Laplacian noise addition and random motion state processes to hide the actual electrical use and movement patterns
VTES05	Fall Detection System on Smart Walker Based on Multisensor Data Fusion	**Description :** We propose in this paper an improved fall detection method, namely Precondition and Limit Threshold SPRT (PLT-SPRT), and a novel fall detection system on the smart walker based on PLT-SPRT
VTES06	Field Evaluation of Path-Planning Algorithms for Autonomous Mobile Robot in Smart Farms	**Description:** Enabling automated path-planning methods in smart farms is essential to the future development of agricultural technology. Path planning is divided into global and local planners. In this paper, we propose an algorithm suitable for smart farms in combination with simultaneous localization and mapping (SLAM) technology
VTES07	Home Energy Management System for Price-Responsive Operation of Consumer Technologies Under an Export Rate	**Description :** This paper presents a home energy management system (HEMS) capable of optimally scheduling BTM resources under a tariff with export rates. The proposed HEMS is formulated as a multi-objective model predictive control problem.
VTES08	IESR: Instant Energy Scheduling Recommendations for Cost Saving in Smart Homes	**Description:** We propose a novel off-peak scheduling technique that provides instant energy scheduling recommendations by monitoring appliances in real-time following user-devised criteria.
VTES09	IoT-Based Route Recommendation for an Intelligent Waste Management System	**Description:** This work proposes an intelligent approach to route recommendation in an IoT-enabled waste management system given spatial constraints

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CODE	TITLE	APPLICATION / DESCRIPTION
VTES10	LMAS-SHS: A Lightweight Mutual Authentication Scheme for Smart Home Surveillance	**Description**: The proposed scheme is lightweight, efficient, and effective in performance while offering secure transmission sessions among all the participants.
VTES11	Low Emission Road Transport Scenarios: An Integrated Assessment of Energy Demand, Air Quality, GHG Emissions, and Costs	**Description:** The Multidimensional Air Quality (MAQ) system is used to define and solve a decision problem that selects a set of energy production scenarios minimizing costs, impacts on air quality, and greenhouse gases (GHGs) emissions.
VTES12	Posture Risk Assessment in an Automotive Assembly Line Using Inertial Sensors	**Description:** This study focused on developing an inertial sensor-based approach to evaluate posture in industrial contexts, particularly in automotive assembly lines.
VTES13	Ranking Security of IoT-Based Smart Home Consumer Devices	**Description:** This paper proposes a novel methodology to systematically build such security rankings for home consumer devices. The proposed methodology can be applied by utilizing data from any security assessment study.
VTES14	Realistic Deployment of Hybrid Wireless Sensor Networks Based on ZigBee for Search and Rescue Applications	**Description :** This work presents two Hybrid Wireless Sensor Networks, based on ZigBee, developed to address some of the challenges that Search and Rescue operations pose to the use of Wireless Sensor Networks, and tested in realistic scenarios in cooperation with first responders.
VTES15	Towards Soft Wearable Strain Sensors for Muscle Activity Monitoring	**Description:** In this paper, we propose a method of estimating static and dynamic changes in muscle force using soft strain sensors that can non-invasively measure muscle deformation. The soft strain sensor is low-profile, robust, and hypersensitive to underlying motion, thus being a candidate technology to address the aforementioned challenges.
VTES16	Bluetooth Low Energy based Indoor Positioning System using Arduino	**Description :** Proposed model prefers to use Bluetooth Low Energy-based positioning system. It focuses on implementing BLE based indoor positioning using ES P32-Node MCU
VTES17	Monitoring System for Quarantined Persons	**Description:** To streamline the measure of isolation at home or quarantine centers. Persons affected by this measure must not leave the quarantine area in any form within the time limit set by the authorities
VTES18	Smart Monitoring System using Smart Glove	**Description:** Automating home devices and converting the gestures into speech using a smart wearable known as the smart glove, which is capable of monitoring the health parameters such as heart beat, body temperature, ECG monitoring, providing home automation, converting gestures into speech and also capable of sending location in case of emergency

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VTES19	Automation Tool for Home Fire Safety Check	**Description**: Sensors are adopted to automatically build an environmental model and reduce the labor burden of exploiting fire simulation tools for a fire safety check
VTES20	Performability Assessment and Sensitivity Analysis of a Home Automation System	**Description:** A modeling approach based on stochastic Petri nets (SPN) for the performability quantification of domotics architectures. SPN performability models are developed following the architecture of a home automation system consisting of several IoT sensors/devices to evaluate the trade-offs between performance and availability of home automation services.
VTES21	Smart Trash Can System with Ultrasonic Sensor and Flame Detector using Arduino	**Description:** Garbage monitoring system is developed to prevent mismanagement of waste and to increase cleanliness in society. The production of the Smart Trash Can System using the Arduino ultrasonic sensor and lire detector
VTES22	Surveillance and Obstacle Avoiding Autonomous Robot	**Description:** To propose a design for intelligent work automation that's able to avoid obstacles. These types of robots are used in the applications like patrolling robot where it is used in industries both for surveillance and obstacle avoidance
VTES23	Internet of Things Smart Farming Architecture for Agricultural Automation	**Description :** We propose an Internet of Things (IoT) farming control system based on the concept of Wireless Sensor and Actuator Networks (WSAN) that provides ideal growing conditions for user-defined crops. This is achieved by utilizing the information provided by a series of sensors monitoring the environmental and soil conditions to control the deployed actuators.
VTES24	Person Presence Detection and Control the Water Faucet Line in the Bathtub	**Description:** In this smart bathtub system, sensors have been installed with a variety of appliances, the presence sensors monitor human occupations in the bathtub that would automatically initiate the automatic process
VTES25	Implementation of communication aid using ZigBee technology	**Description :** The robot is operated by human commands, which are sensed by a speech recognizer, processed by the microcontroller, and sensing loads are organized according to the programmer's instructions to the microcontroller
VTES26	Security in Building Automation Systems	**Description:** This paper starts with a security threat analysis and identifies the challenges of providing security in the building automation domain. Afterward, the security mechanisms of available standards are thoroughly analyzed
VTES27	Design and Implementation of Temperature and pH Monitoring Tools in Fish Pond Based on Arduino	**Description:** A monitoring system to know the water quality in ponds at low cost because the system will be implemented in SME with small capital

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CODE	TITLE	APPLICATION / DESCRIPTION
VTES28	Securing Smart Meters Through Physical Properties of Their Components	**Description**: Our strategy uses physical properties from these components (smart meters) to create secure identities for the meter
VTES30	Design of intelligent irrigation and soil loosening system for Agricultural Internet of things	**Description:** The microcontroller analyzes and processes the humidity value detected by the soil humidity sensor, and displays the data on the LCD screen.
VTES31	A Fire Prevention/Monitoring Smart System	**Description:** Two main tasks will be addressed; the first one is to detect fires, smokes, and/or gas leaks, to notify the authorities, while the second one is to provide real-time monitoring and control of the entire hazardous buildings or areas that are under fire.
VTES32	Low-Cost Sensor Based Hand Washing Solution for COVID-19 Prevention	**Description:** We employed an Arduino based microcontroller as processor and ultrasonic based distance sensors to implement a touch-free hand washing mechanism
VTES33	Covid-19 Patient Health Monitoring System Using IoT	**Description :** This paper presents a health monitoring system based on IoT that helps the medical staff to monitor blood saturation, heart rate, pulse rate and body temperature remotely
VTES34	Development of IoT Based Fish Monitoring System for Aquaculture	**Description:** This paper presents the way of using Internet of Things (IoT) based devices to monitor aquaculture's basic needs and help provide things needed for the fisheries. Using these devices, various parameters of water will be monitored for a better living environment for fish
VTES36	Electric Wheelchair Control Using Wrist Rotation Based on Analysis of Muscle Fatigue	**Description :** A novel control method to operate an electric wheelchair, using hand gestures (wrist rotation) is developed. Hand gestures were considered and studied for forward, backward, right, left, and stop maneuvers while considering the human ergonomics factor
VTES37	Intelligent Agriculture Technology Based on Internet of Things	**Description:** This paper studies and compares several emerging technologies of the things Internet, then it analyzes the functional diversity and practicability of the Modern Agricultural IoT. It builds the experimental environment based on the agricultural product traceability technology, so as to realize the monitoring of crop growth environment and traceability
VTES38	IoT-Based Reusable Medical Suit for Daily Life Use in the Era of COVID-19	**Description:** This work, mainly, aims to design and develop a novel auto-sterilized suit embedded with some medical sensors and other Internet of Things (IoT) devices to provide the required level of isolation, safety, tracking and monitoring of COVID-19 and other pandemic diseases.

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CODE	TITLE	APPLICATION / DESCRIPTION
VTES39	Lightweight and Privacy-Preserving Remote User Authentication for Smart Homes	**Description**: We propose a novel lightweight and privacy-preserving remote user authentication protocol for securing smart home applications
VTES40	Real-Time Landslide Monitoring on IOT Platform Based on Xbee	**Description:** We designed a customized sensor node and gateway node to monitor the changes periodically with low energy power consumption
VTES41	ODS-BOT: Mobile Robot Navigation for Outdoor Delivery Services	**Description:** The proposed localization strategy efficiently combines information from multiple sensors. The second challenge is safe navigation based on the detection of the traversable region. The presented terrain traversability analysis provides clear, real-time positive and negative obstacle information. The third challenge is the requirement of an effective path planning strategy to reduce the risk of collisions or deadlocks
VTES42	Wireless Sensor Network Dependable Monitoring for Urban Air Quality	**Description:** The proposed dependable monitoring network is shown to achieve high availability with regards to energy consumption and data assurance with the survival probability of over 80% during a minimum period of 72-hour operation for monitoring air quality in a suburb
VTES43	Designation of a Home Automation System using Arduino with Home Wireless Control Appliances in Traditional Malay House	**Description :** This paper presents a design of home automation system using IoT that is capable of controlling and monitoring most of house appliances using an easily manageable application. The proposed system is highly flexible as it uses Wi-Fi technology to interconnect between the controlled board & Wi-Fi module
VTES44	Environmental Parameter Monitoring System Based on Arduino, MQTT and Node-RED	**Description:** The proliferation of Internet of things (IoT) in smart environmental monitoring has become more popular. It comprises of communication protocols like MQTT and end sensor nodes to be able to connect to the internet.
VTES45	Smart Saline Level Monitoring System using Liquid Level Switch Contactless Sensor, Arduino and MQTT-S	**Description :** It is proposed that the cost-effective smart saline level monitor which may be a reliable, user friendly and price effective system for saline level monitoring. This technique is built by employing a liquid level switch contactless sensor which is an ultra-low power and low-cost sensor and microcontroller
VTES46	Automatic Pollution Detection and Monitoring of Coal Mining and Quarrying Industry using Arduino	**Description:** In this system, the execution parameters such as temperature, humidity, fire, pH, gas and harmful acids are monitored. In this project the pollution causing agents are monitored and their levels sensors are continuously monitored through mobile phones.
VTES47	Moisture based Irrigation System using Arduino and REES52 Sensor	**Description:** This system responses in a way to measure the moisture which is present in particular soil with comparison in values/desired values provided by the user. It generates a notification if the water level of the soil goes below/above the values

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CODE	TITLE	APPLICATION / DESCRIPTION
VTES48	Smart Wheelchair with Remote Patient Health Monitoring System	**Description**: This paper presents a smart wheelchair system, which focuses on the health monitoring as well as the accident detection aspect and provides robust and quick alerts in case of any health-related anomaly or if a fall is detected
VTES49	Intelligent Drowsiness and Illness Detection Assist System for Drivers	**Description:** To assess whether a driver is awake or asleep, as well as whether the driver has any health issues, the system employs an eye blink sensor and a photoplethysmography sensor accordingly. The sensors' output is connected to the driver's phone via GSM module and any other human monitor via WiFi in that order
VTES50	Smart bin and intelligent waste segregator using IoT	**Description:** This paper explains the design of a system to properly collect and separate waste from the public trash can, using the Internet of Things (IoT). The trash level is measured and monitored with an ultrasonic sensor and the Blynk app
VTES51	Smart Assistive System for Visually Impaired People Obstruction Avoidance Through Object Detection	**Description:** The plan is to make an effective system which will assist visually impaired people through obstacle detection and scenes classification. The proposed methodology utilizes Controller, Camera, Ultrasonic Sensor and Arduino, mounted on the stick of the individual.
VTES52	Energy Efficient Street Light Controlling System on Detecting Vehicle Movement using Arduino	**Description :** The major aim of the research is an energy efficient street light controlling system on detecting vehicle movement using an Arduino Microcontroller
VTES53	Development and Implementation of Automatic Trolley System for Disabled, Aged and Nursing	**Description:** We plan on automating the current trolley system by controlling the robotic trolley with hand gestures. The transmission device interfaces with an Arduino ATMEGA microcontroller, which receives signals and propels the robot based on its user's hand gesture.
VTES54	Design of Web Based Energy Monitoring System for Residential Electricity Consumption	**Description :** This paper presents the design of electrical energy monitoring using the energy sensor and Controller as a web server. The system designed for measuring current, voltage, power, and energy and send it to a database as the purpose for display on info-graphics web pages in real-time
VTES55	IOT Based Approach for Rapid Screening for Infection Spread Control	**Description:** We propose a low-cost enabled COVID-19 standard operating procedure (SOP) compliance system that ensures physical distancing managers of violations.
VTES56	Smart Borewell Child Rescue System Through Wireless Monitoring	**Description:** The Borewells rescue system is capable of moving inside the same Borewells where the child has been trapped and performs various actions to save the child. This system has a high-power LED which acts as a light source since light intensity inside the hole will be less.

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CODE	TITLE	APPLICATION / DESCRIPTION
VTES57	IOT based air pollution notification and monitoring system	**Description**: In this paper we are going to make an IOT Based Air Pollution Monitoring System in which we will monitor the Air Quality over a web server using internet and will trigger an alarm when the air quality goes down beyond a certain level, means when there are sufficient number of harmful gases are present in the air like CO_2, smoke, alcohol, benzene and NH_3
VTES58	Manhole Monitoring System	**Description:** The proposed system is low cost, low maintenance, IoT based real time which alerts the managing station through message when any manhole crosses its threshold values
VTES59	Secure Home Entry with Notification	**Description:** Due to popularity and flexibility of using current social network for all type of generation, we are proposing home security system using Telegram notification. The advantage of using App for this project is to send notification to the user as it provides an instant secure communication between the user and the home automation system.
VTES60	Vision Based Parking Occupation Detecting	**Description:** The essential thought of this undertaking is to make a shrewd stopping framework which is genuinely necessary framework to save time here web of things targets fostering a savvy stopping framework inside a brilliant city which naturally observes the closest accessible stopping opening

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