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Experiment No. 1

Aim : Conduction of a survey of several available literatures in the preferred field of study.

Summary of IEEE papers :

Paper 1 :

Luggage refers to bags that hold personal belongings of passengers while in transit.This signifies the portability and the ease of conveyance of these pieces of luggage. Incorporating an AC power supply into the bag will cause a lot of inconveniences for the passenger. For example, the system will not function unless it is plugged into an AC supply outlet. Also, it will be substantial, thereby causing additional weights that the passengers may not be welcome. Hence, during circuitry designing of the system, which was carried out using proteus software, a 36 V lithium-ion battery, which acts as a DC supply unit was used to power the system. However, an Arduino Nano Microcontroller only needs as little as 5 V to perform its intended function. Therefore, to regulate the voltage generated from the battery to 5 V, a 7805 5 V voltage regulator was added to the circuit. To power the Arduino Nano microcontroller, the input pin of the microcontroller is connected to the voltage output of the regulator, where an input voltage of 5 V is supplied to the system. The GSM module requires a SIM card that must be inserted to establish an active connection between the GSM communication system. The TXD pin of the SIM900D GSM module, which is used for transmitting, is connected to the Digital Pin 2 of the microcontroller. The pin for receiving RXD is connected to digital pin 3 of the microcontroller. The GPS module TX pin is connected to pin 4 of the microcontroller as shown above to complete the circuit.

Paper 2 :

In this project a luggage tracking system would be created in order to track the bags which are lost. In this, the luggage bag would contain the hardware of the tracking system or simply we can say the tracking device through which we would be able to track the bag. With this an alarm would also be connected to the device which would ring whenever the bags get away from the owner and gets out of a particular range and area. For this purpose a map is also created using google geolocation api, in which the area has been set and predefined through which we can track the bag once it gets away from the owner. On the map we can see the location of the bag where it is as the markers are being dropped which gives us the location of the bag as it moves away from the owner. Also certain range flags have been set which will notify the owner on the map timely what is the distance between the owner and his bag like "under 20m", "under 30m".

Paper 3 :

RFID have its place in a group of technologies referred to as Automatic Identification and Data Capture (AIDC). AIDC methods automatically identify objects, collect data about them, and write those data directly into computer systems with little or no human intrusion. RFID methods utilize radio waves to accomplish this. The reader consists of the RF module, control unit, and coupling element to interrogate tags via RF communication. It has a secondary interface to communicate with backend systems for the transmission of the information stored in tags. The backend applications not only aggregate, filter, and calculate the data gathered by readers but can process the dynamic product data (e.g. location, history and current analysis). The RFID virtually creates a remote database which travels with the item by making use of RF communication to exchange data between tags and backend applications. The designed prototype has to be used two locations having both check-in and check-out processes. A more secure algorithm is used for generating tags that are attached to printed luggage labels with the details of passenger and airline stored in it. RFID readers in the check-out areas facilitate step tracking of baggage which prevents baggage loss. The baggage's real time position is tracked and stored in a cloud using IoT and a unique ID can be retrieved by the passengers wherever and whenever necessary. The same ID can be used while collecting bags at check-out counters. The system provided ensures less consumption of time, security for baggage and is economical hence provides customer satisfaction.

Identified Problem Definition :
The baggage tracking system is designed to track the luggage and bags which get lost or stolen from public and other areas. As people travel, there is always a risk of theft of the luggage and bags which is where the proposed system comes into account. The luggage tracking system works on an alarm basis where an alarm is set up with the arduino uno board and a GPS module. Also the alarm is turned on as soon as the bag is stolen and goes outside a particular range.

Proposed Solution :
The proposed system uses the technique of Internet of Things in order to track the bags. In this a hardware would be created and installed which would be having the basic arduino board with a GPS module and an alarm being connected to it. A map has been created which would be synchronized in order to track the location of the bag. Furthermore, the map has the features that as soon as the bag gets lost or stolen and it moves away from the owner and goes out of a particular range, the alarm would start ringing so that the owner gets notified where exactly the bag is. Also it would help the owner to track down the location of the bag which could be seen on the map as the markers would be dropped which gives us the location of the bag as it moves away from the owner. Moreover, the owner would also be notified with the flag messages when the bag moves out of a particular range like 10m, 20m and 30m.

Arduino Kit   Map

Alarm   Computer with Front End

• Arduino GPS Shield : The Arduino GPS shield is the most necessary component as it would be useful to connect and synchronize the shield with the front end and the computer so that it gets synchronized with the map and helps in detecting the location.

 • Server : The server would be used in a way when we connect the Wifi module with the mobile which would be used as a GPS module and connected to the Wifi.

• Alarm : This would be useful as a notification when it rings in order to notify that the bag has bypassed a particular range from the owner.

 • Map : The map would be synchronized in a way that it gives us the location of the bag and would also notify the owner through message flags which would help the owner to identify what is the distance between the owner and the luggage bag. This can be achieved by dropping the markers as the bag moves away from the owner which would also give us a route of where the bag is moving.

Conclusion :

This article shows the implementation of tracking the bags which are either lost or stolen using IoT. Certain procedures and techniques have been made and proposed in order to achieve the same. Experimentation has been done and maps have been created in order to track the location of the bags which are misplaced and lost. Experiment results further conclude that the bags can be easily tracked based upon the hardware installed in them and then by tracking that hardware and tracking the route, directions and location of the bag with the help of a map.

References :

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