The Design of Key Tracker Using IOT Gecko Technology

Ravindra Singh[1], Subhadip Nandy[2], J.Tharun[3], Mrs. J. Sivapriya[4]

[1, 2, 3] Dept of Computer Science and Engineering
[4] Assistant Professor, Dept of Computer Science and Engineering
[1, 2, 3, 4] SRMIST Ramapuram, Chennai, Tamil Nadu, India.

Abstract- The gear following framework is structured to follow the gear and packs which gets lost or burglary from open and different territories. As individuals travel, there is dependably a danger of robbery of the key and packs which is the place the proposed framework comes into account. The gear following framework chips away at an alert premise where a caution is set up with the arduinouno board and a GPS module. Likewise the caution is turned on when the sack is robbery and heads outside a specific range. Besides, a guide is made through which we can follow the area of the sack as it moves, as the markers are dropped which in away gives us the area of the sack as it moves far from the proprietor. In this, the IoT parts are being utilized like Arduino Board and a GPS Module so as to follow the pack and a frontend or versatile application is made so as to screen.

Keywords- Arduino Board, Key tracking, map, IoT.

I. INTRODUCTION

Loss of key can occur with anybody regardless of the conditions and conditions. key and sacks with critical records or valuable things also, can be lost or burglary with which individuals can lose their imperative material. By and large it is seen that individuals get victimized in open zones like railroad stations, transport stands and other open and private regions. Likewise individuals can even overlook their keygage and sacks which can have imperative and fundamental things. So it is important to find the packs in the event that of misfortune and robbery. A great deal of other following frameworks and gadgets are as of now present like vehicle following frameworks what's more, shoe following frameworks.The Internet of Things (IoT) is a system of objects like structures, vehicles, and so forth which are implanted with sensors, hardware and other arrange related things which causes these items to gather and trade data.

IOT permits the articles to be detected and controlled from a remote passage, which does the incorporation of PCs with the physical world which improves monetary advantage, exactness and proficiency. Whenever IoT is associated with sensors, it includes innovations, for example, keen homes, vehicle following, checking and controlling home apparatuses and at last keen urban communities. Everything is extraordinary and recognizable and in addition turns out to be simple available when it is increased with the Internet and PC infrastructure. The Uno is a microcontroller board which is in light of ATmega328P and it has 6 simple data sources, 14 advanced information/yield sticks out of whom 6 can be utilized as PWM yields, a USB association, 16 MHz quartz flag, an ICSP header, control jack and reset catch. It has everything which is required to help a microcontroller and we can connectit with a USB link or interface it with AC to DC connector.

1.1 Technical Specifications

Microcontroller	ATmega328P
Input Voltage (recommended)	7-12V
Input Voltage (limit)	6-20V
Digital I/O Pins	14 (6 for PWM output)
PWM Digital I/O Pins	6
Analog Input Pins	6
DC Current per I/O Pin	20mA
DC Current for 3.3V Pin	50mA
Flash Memory	32kb (ATmega328P)of which 0.5kb used by bootloader
SRAM	2kb (ATmega328P)
EEPROM	1kb (ATmega328P)
Clock Speed	16MHz
Length	68.6 mm
Width	53.4 mm
Height	25 g

In this task a gear following framework would be made so as to follow the packs which are lost. In this, he gear sack would contain the equipment of the following framework or just we can say the following gadget through which we would probably follow the sack. With this a caution would likewise be associated with the gadget which would ring at whatever point the sacks escape from the proprietor and

escapes a specific range and region. For this reason a guide is additionally made utilizing google geolocation programming interface, in which the region has been set also, predefined through which we can follow the sack when it makes tracks in an opposite direction from the proprietor. On the guide we can see the area of the pack where it is as the markers are being dropped which gives us the area of the pack as it moves from the proprietor. Additionally certain range banners has been set which will inform the proprietor on the guide convenient that what is the separation between the proprietor and his sack like "under 20m", "under 30m".

II. RELATED WORKS

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Konas keys

Konas sacks offers gear and pack packs that we can track from the cell phone. With the assistance of the GPS beacon present taken care of, we can follow the gadget through the application introduced in the cell phone.

Disadvantage

- In this we can only track the keys once they have been lost and not when they are theft, so this doesn't provide the feature of providing the surety that whether the key would ever be recovered or not.
- Also, we won't be knowing when the key was lost or theft so if we get to know about it few hours later, then it can be a possibility that may have transported or travelled far away and a lot of distance.

Trackable key Tags

- A lot of trackable tags are available which can be tied with the key in order to track the keys when they are lost.
- These tags have inbuilt GPS chip through which the company would track the lost key. There are a lot of companies in the market who are providing these tags with different features like dynotag, LugLoc and Robot Check.

Disadvantage

- Again the tags don't notify you as soon as the key is theft or lost, instead when we find out that the key has been lost then only we try to track them down.
- The tags don't provide you a mobile or computer frontend interface to track and view the location of the key, instead the company owning the tag would try to track down the location, so the owner is always in dark about what is exactly happening.

Trackdot Luggage Tracker

Trackdot is a luggage tracker device which is placed inside the key when a person is travelling. It works on ground-based cellular technology and microelectronics. When in an airplane during takeoff, it shuts down automatically and enters in an airplane mode and again activates during landing when the pilot applies brakes.

Disadvantage

- It is very costly approx. $56. • It is available in western countries.
- Does not provide instant notification if the key is theft or lost which is a major drawback. • Not available in India.

III. PROPOSED SYSTEM

The proposed system uses the technique of Internet of Things in order to track the keys. 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 key. Furthermore, the map has the features that as soon as the key gets lost or theft 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 key is. Also it would help the owner to track down the location of the key which could be seen on the map as the markers would be dropped which gives us the location of the key as it moves away from the owner. Moreover, the owner would also be notified with

the flag messages when the key moves out of a particular range like 10m, 20m and 30m.

Advantages

* The alarm would help the owner to identify from where the sound is coming and it would become easy for the owner to track down the key as the range which has been set is less.
* The map and the markers would help the owner to track down the exact location of the key.
* The flags in the map would help the owner to check how far the key is from the owner.
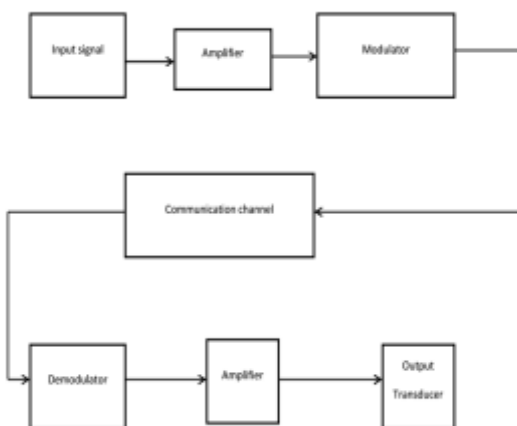
System Architectures

Figure 1: System Model

System Entities

* 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.
* gecko The gecko 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 key has by passed a particular range from the owner.
* Map The map would be synchronized in a way that it gives us the location of the key and would also notify the owner through message flags which would help theowner to identify what is the distance between the owner and the luggage key. This can be achieved my dropping the markers as the key moves away from the owner which would also give us a route of where the key is moving.

IV. EXPERIMENTAL EVALUATION

In this, a map has been developed using the google geolocation api, which would help us to identify the location of the luggage. An example of Bus Stand in Bangalore has been taken and assumed that a person is over there. The map shows the location of the person and also the message flags. Also, the markers dropped would let us know the exact location of the key, as the markers keep on increasing with the movement of the key which is tracked through the map. These would be connected to the Arduino GPS Shield which already has the alarm connected, so that the map can be synchronized with the GPS module and the location can be traced on the frontend (map) which is monitored on the computer.
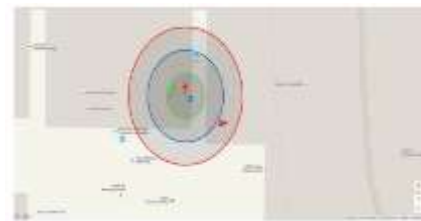

Figure 2: Map of Majestic Bus Stand, Bangalore

In Fig.2 we can see the location of a bus stand. It has the following information: • The red marker in the middle of the circle shows the location of the person. • The green circle is 10m away from the person. As soon as the key moves 10m away from the owner, the alarm would ring and the Green flag would display the message as "Theft" on the map. • The Blue circle is 20m away from the owner and the Blue flag would display the message on the map as "within 20m". • The Red circle is 30m away from the owner and the Red flag would display the message on the map as "within 30m".

Figure 3: Map of Majestic Bus Stand, Bangalore with markers
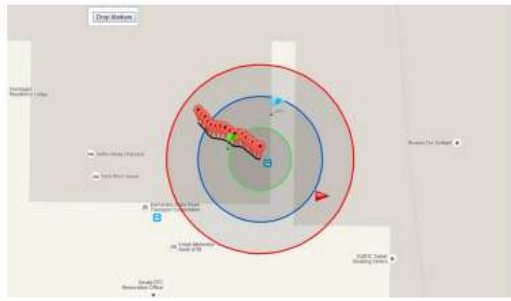
Figure4: Map of Majestic Bus Stand, Bangalore with markers

Fig.3 and Fig. 4 shows the map of bus stand in Bangalore with the markers dropped. These markers show the direction and route where the key is travelling away from the location of the owner of the key. These markers would help to locate the key by following the direction in which the key is moving. 5. Conclusion and Future work This article shows the implementation of tracking the keys 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 keys which are misplaced and lost. Experiment results further concludes that the keys 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 key with the help of a map.

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