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Development of SmartTrack with Authentication for Tracking Objects Business Promotion

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Abstract: ***One of the most important and difficult duties of a smart video surveillance system is object tracking. The major purpose of this is to pinpoint the precise location of a specific item and to highlight that location with a buzzer and light. We considered secrecy when designing. We must protect the private documents. Therefore, we need to offer users permission before granting access to the location, buzzer, and light. This system was specifically created with authorization and confidentiality in mind. The various object tracking techniques that the researchers used are thoroughly reviewed in this publication. The purpose of this essay is to review numerous ways to object tracking and to examine, study, and evaluate them.***
Keywords: Object Tracking, Smart Track, Smart Tag, Authorization, Confidentiality.

I. INTRODUCTION

Computer vision's field of object tracking has a variety of real- world uses, including video surveillance, sports analysis, human-computer interaction, and locating the misplaced.

Navigation by robots and objects [1]. It is a well-researched issue that can often be challenging to resolve. Tracking systems, which are created to keep an eye on objects or people, are a common problem in contemporary technology. The manual methods of equipment location are time- consuming and ineffective. Keys, pen drives, wallets, and handbags are among the items that people frequently lose. Additionally, misplacing is the main reason why the possessions are lost. Going in search of misplaced items requires too much effort and even wastes time, especially when they are desperately needed. People can solve problems in numerous ways. Interface between the user and the wireless sensors. The receiver sensor receives a signal from the transmitter end, in which if the object is within a short distance of the user after being located, a buzzer will begin to sound to alert the user that they have misplaced something.

II. LITERATURE SURVEY

Robert J.et al.[6] developed the frequently Lost Objects (FLO) system, which uses spatialized audio and indoor position sensing to locate regularly misplaced personal items like wallets, phones, and sunglasses. Small radio-frequency tags that are attached to each object are used in this system. To execute the tracking of these things, the user would wish to track an indoor positioning system. LCD touch panels strategically positioned throughout the home facilitate user interaction with the system. Utilizing a buzzer, the system directs the user to the misplaced object. If the lost object is outside of a certain range, the GPS-GSM system in [4] aids in navigation and helps find it. The user must choose an item from a list of items in the mobile application that are attached with sensors. Pseudo codes are transmitted FETCH is a mobile application that enables visually impaired people to track down and find things they commonly misplace. FETCH uses the customers' personal devices, like their laptop or cell phone, to find items. By measuring gaze points and mapping them to the objects of video content, Chiao-Wen Kao et almethod [8].'s suggests a way to investigate the user's navigation foci and visual tracks. Even when the target objects are missing, the system can still locate them effectively. The suggested system can track items with greater robustness while they are lost by continually implementing a mean scheme and a sequence scheme. Camshift approach was suggested by GalandaruSwalaganata et al. [9] for better and quicker tracking results. The primary tracking method is the camshift method, and the Kalman filter is utilised for forecasting and error correction. The adoption of this technology lowered the computational difficulty and substantial memory requirements for the implementation of tracking. S.M. Kolekar et al.'s [10] suggestion for a Tag droid called "Tile" to locate misplaced items. By affixing the tile to any item, we run the risk of losing things like keys, laptops, etc. The application can recall where it first saw the tile. The community can help you find misplaced items by sharing with them. [11] provides an explanation of how computer vision and computational perception can be used to locate objects in a home.

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The system can provide the current location of any object within its field of vision by using cameras to track when objects of interest are moved within an area. Ma and Paradiso

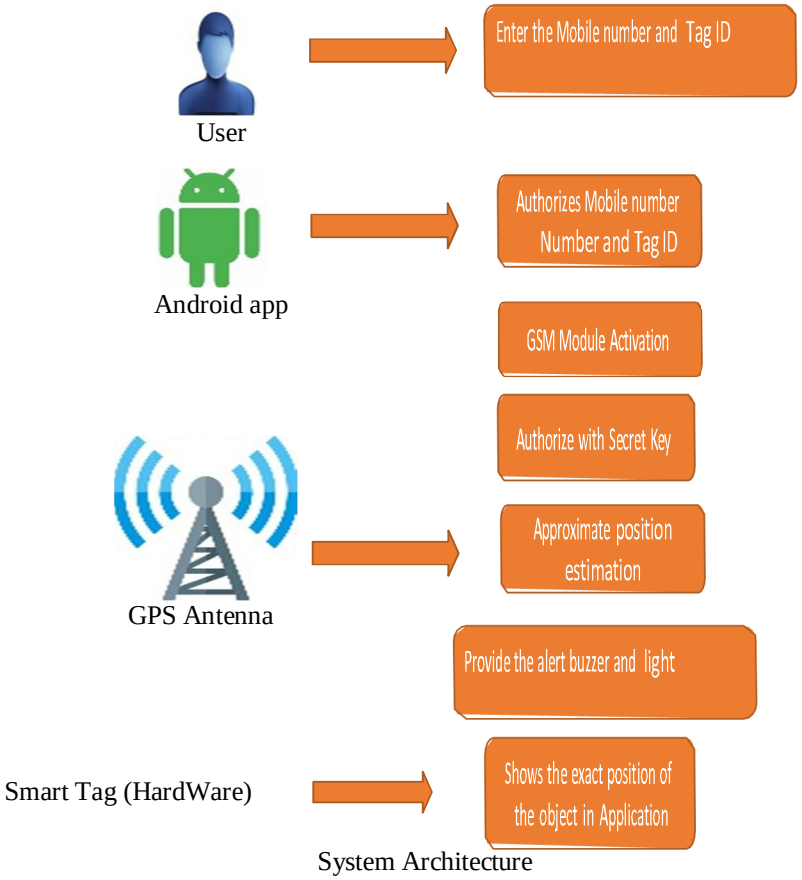
[12] offer a system that activates tags on nearby items with a flashlight, making an LED on the tag illuminate. The present edition, however technologically cutting-edge, is not suitable for those who have visual problems. A portable battery- operated object tracking device was created by Arghya P. SaikiaThengal et al. [13]. Using components that are readily available, it is a real-time object tracking system that is affordable and easy to use. Through the satellite tracking method, the GPS receiver will periodically acquire its location. The GSM modem will periodically send pertinent data to a centralised server.

If it notices an irregularity, it may issue a warning message or keep track of time. Singh et al. in [14] noted that different object sensing technologies suffer from errors depending on environmental factors and suggested an enhanced Kalman filter that can filter out the noise and increase tracking accuracy. GPS was utilised by Denaxas et al. [15] to estimate the average speed of traffic in real time on every segment of urban roads in a municipality. The method makes use of a fast solver to produce the model solution along with a big and sparse model of the road infrastructure, bus routes, and fleet dynamics. A system for tracking mobile phone users using GPS and GPRS on mobile phone devices was introduced by Moloo et al. [16] and raises notifications if the user enters any restricted zones. The prohibited areas may include dynamically configured according to the requirements.

III. PROPOSED SYSTEM

Many people in today's hectic environment have the bothersome tendency of misplacing or losing stuff. Keys, pen drives, wallets, and handbags are some of the items that people frequently lose. Searching for missing items is time-consuming and requires a lot of effort, especially when there is a pressing need. Therefore, employing the GPS and GSM systems for object tracking is best for that need. With GSM, we are able to quickly and precisely discover assets without having to look for them all over. It helps to cut down on unnecessary tool purchases and rental fees.

By utilizing GSM tags, the suggested application will assist in solving this problem with less effort with authentication.



System Architecture

If an object is misplaced or can't able to find the particular object in a group by making a buzzer sound, this programme estimates the device's proximity to the mobile by tracking GSM tags.

The object must have a Smart Tag added by the user. If an object is misplaced or can't able to find the particular object in a group of objects, the user must use a smartphone to activate the Smart Tag frequency. The programme begins to follow the Smart Tag, Asks for the secret key, if it is in the point of confidentiality, calculate how close it is to the mobile, and send alerts from the Smart Tag by highlighting with the light and playing a buzzer.

IV. TANGIBLE BENEFITS

1) It is easy to access and uses little energy.
2) It is applied in indoor settings.
3) Internet access is not required.
4) Batteries in gadgets last a long time.

Fig.1: Android App looks like

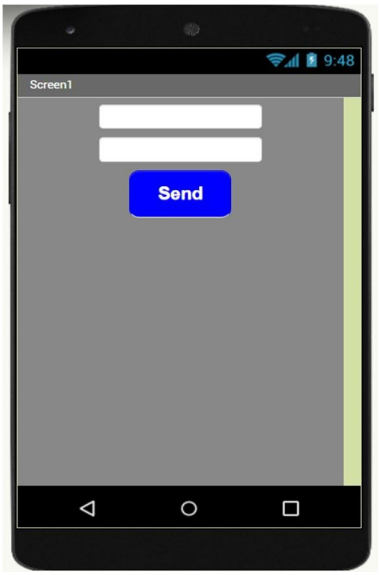


Fig.2: Entering Secret Key

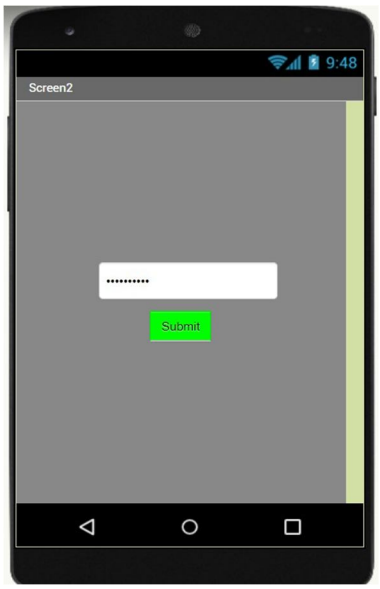
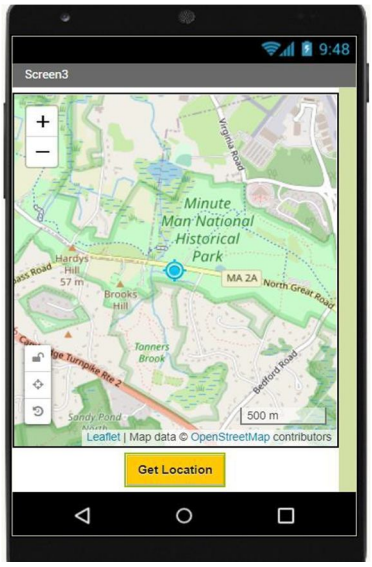


Fig.3:Fetching for the Location



V.CONCLUSION

In interior locations, it's necessary to be able to monitor crucial assets. Because losing personal items like keys, flash drives, wallets, and handbags has become a widespread problem. Again, misplacement is the main cause of lost property. Therefore, a system or application that can quickly and cheaply find lost property is required. This paper provides an overview of several object tracking approaches as well as an abstract representation of the system that will be utilised to address problems with the current system. We are putting into practise a system that consists of a microprocessor and GSM module and is best defined as a set of tiny devices that broadcast their identities over GSM.

VI. FUTURE WORK

1) The algorithm that is suggested in this study is for indoor positioning. Then, a calculation of the separation between mobile devices and Smart Tag is performed.

2) The system serves as a foundation for developing a tracking system and authorisation that has the following features in order to improve its efficiency and functionality. Line-of-sight is not necessary for the system to operate.

3) The implementations of the tracker system and the Access Point system use less memory and computational overhead.

4) The limit for the separation between a smartphone (a tracking device) and a smart tag may be increased in the future.

REFERENCES

[1] "Online Multi-Object Tracking based on Hierarchical Association Framework," by Jaeyong Ju, Daehun Kim, Bonhwa Ku, Hanseok Ko, and David K. Han was published in the IEEE.

[2] Lun-Chi Chen, Ruey-Kai Sheu, Hui-Chieh Lu, and Winston Lo, "Object Finding System Based on RFID Technology," Advanced Web and Network Technologies, and Applications: APWeb 2006 International Workshops: XRA, IWSN, MEGA, and ICSE, Harbin, China, January 16–18, 2006. Proceedings (pp.383-396) (pp.383-396).

[3] "GPS and Bluetooth Based Object Tracking System" by Rupen Paul V1, Adithi Reddy 2, Sujith PS 3, and Aneesh M was published in the International Journal of Advanced Research in Computer and Communication Engineering's Volume 5, Issue 1 in January 2016. Chiao-Wen Kao, Bor-Jiunn Hwang, Chaur-Heh Hsieh, Yun-Ting Huang, Hui-Hui Chen, and Shyi-Huey Wu, "The integrated gaze and object tracking strategies to study the user's navigation," 2014 International Conference on Machine Learning and Cybernetics.

[4] Moving object tracking using a hybrid technique, GalandaruSwalaganata, Muniri, and Yessi Affriyenni, 2018 International Conference on Information and Communications Technology (ICOIACT).

[5] S.M. Kolekar, Saurabh N. Funne, Niranjan M. Tade, Omkar A. Rajgire, and Ganesh R. Ghorpade, "Tracking System Using Bluetooth Tags and Android app-Tagdroid," International Journal of Recent Engineering Research and Development (IJRERD)Volume No. 02 -Issue No. 05, ISSN: 2455-8761, www.ijrerd.

[6] Randall Nelson and Isaac Green, "Tracking Objects Using Recognition," International Conference on Pattern Recognition (ICPR02), Quebec City, Quebec, August 2002, Volume 2, 1025–1039.

[7] Arghya P. Saikia Thengal, Naman Rastogi, Abhilash Medi, Rituranjan Srivastava, and Kamalika Datta, "Parameter sensing and object tracking utilising global positioning system," 2016 Sixth International Symposium on Embedded Computing and System Design (ISED).

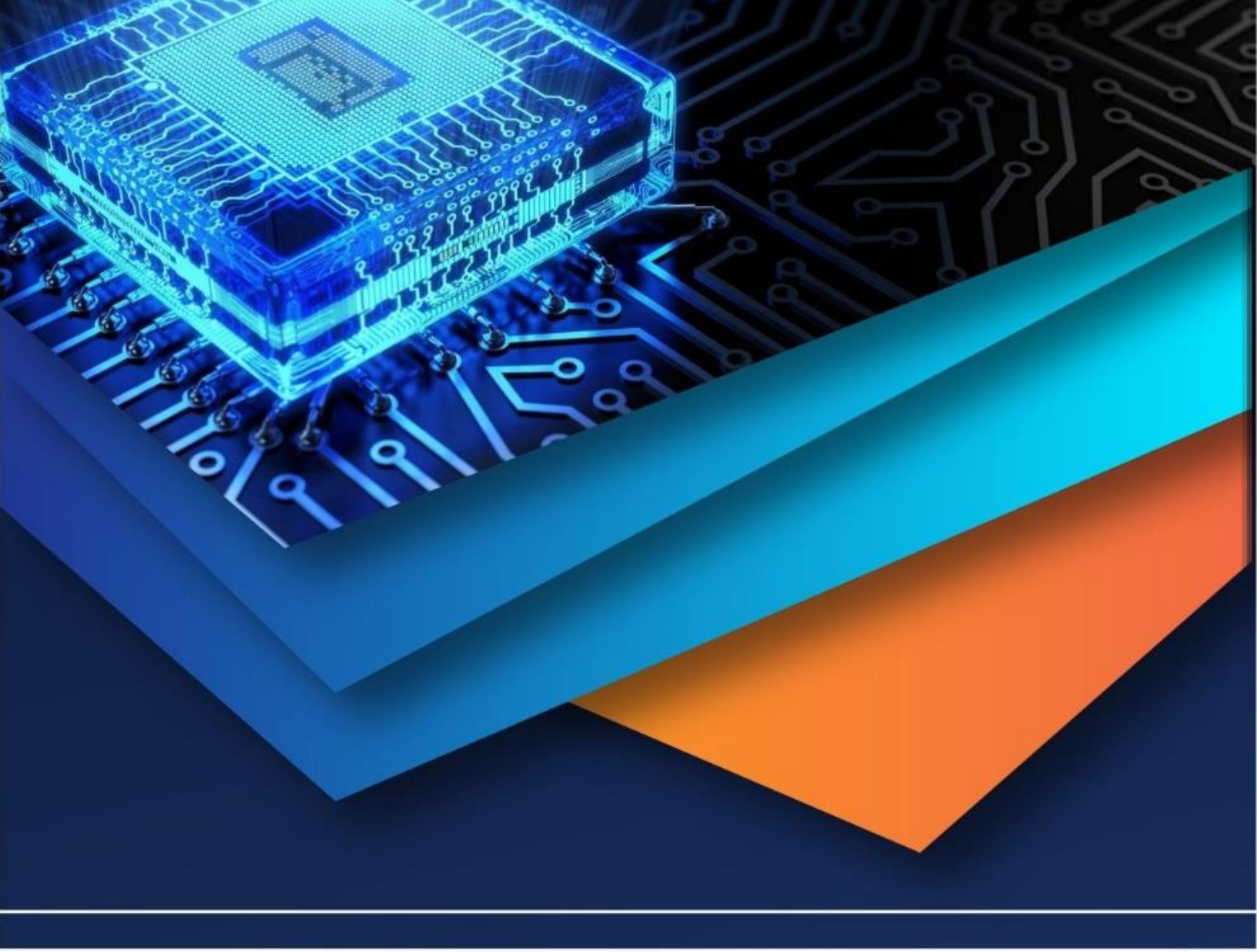
[8] Sonal and A. Singh. a GPS tracking improvement over the Kalman filter. Pages 923–927, 2016 International Conference on Computing for Sustainable Global Development.

[9] S. Mpollas, D. Vitsios, C. Zolotas, E. Denaxas. Extraction of real-time urban traffic data from bus fleet GPS tracking. Pages 58– 63 of the 2013 IEEE Symp.on Computational Intelligence in Vehicles and Transportation Systems. K. Moloo and V. K. Digumber.
[10] Mobile GPS tracking solution with a low cost. International Conference on Business Computing and Global Informatics, 2011; pages 516–519
[11] Simbolon, A, I., Amri, M. F., Suhendra, M. A., & Turnip, A., 2019. A New Technique of Room Access Security based Brain Computer Interface. Internetworking Indonesia Journal, 11(1). Afriansyah, A., Oktarino, A & Turnip, A., 2019. Expert System for Diagnosing Children Allergic Diseases through Web Forward Chaining. Internetworking Indonesia Journal, 11(2).



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