



# ANTIQUE KEY GPS TRACKING SYSTEM

Shanskiruthi P V, Madhumitha P, Dr. Pachhaimmal @ Priya,

**Computer and Communication Engineering  
Sri Sairam Institute of Technology, Chennai**

**ABSTRACT** -- The project aims to design a framework for providing a house owner/member with the immediate notification of an ongoing theft or unauthorized access to their premises. Wireless Sensors Networks (WSNs) combined with the use of Internet of Things (IoT) are expanding smart home concepts and solutions, and their applications. This project proposes a novel IOT based smart home antic Key system that can be detected by the GPS. The gist of our model says that the GPS tracker is set within the key. Hence, if the key is lost or robbed it can be easily tracked and identified by connecting it to the GPS placed inside the key, through Bluetooth.

**Index terms** — IOT,GPS,BUSSER SYSTEM,ANTIQU KEY

## I. INTRODUCTION

In an era where antique keys hold both historical and sentimental value, the risk of losing them can be a major concern for collectors, antique shop owners, and history enthusiasts. The **Antique Key GPS Tracking System** is designed to provide an innovative solution for tracking and locating valuable keys in real time. This system integrates **advanced GPS technology** with a **compact and discreet tracking device** that can be attached to antique keys without altering their appearance or integrity. Through a user-friendly mobile application, owners can monitor the location of their keys, set up alerts for unauthorized movement, and ensure the safety of their prized possessions. Whether you are a **collector protecting a rare key**, a **museum curator managing historical artifacts**, or an **individual safeguarding a cherished heirloom**, the **Antique Key GPS Tracking System** offers **peace of mind and security** like never before.

## II. EXISTING SYSTEM

Yes, there are existing IoT-based antique key GPS systems that use Bluetooth or WIFI to connect with a mobile device. These systems typically consist of a small GPS tracking device that attaches to the key or keychain and can be located using a companion mobile app. The app allows the user to track the location of the keys in real-time and receive notifications if the keys are misplaced or moved outside of a designated area. Some systems also include additional features such as remote keyless entry, proximity alerts, and historical location tracking.

Existing IoT-based antique key GPS tracking systems use **Bluetooth, Wi-Fi, or GPS** to connect with a mobile device, allowing users to track their keys in real time through a companion app. These systems typically feature **geofencing alerts, proximity notifications, and historical location tracking** to prevent loss or theft. Some models also offer **remote keyless entry**, integrating with smart locks for added convenience. By attaching a compact tracking device to the antique key or keychain, users can ensure security and easy retrieval of their valuable keys.

## III. LITERATURE SURVEY

**Misra and Enge**, proposed a comprehensive understanding of the theoretical aspects and signal processing techniques that underpin GPS-based systems. They explore the basics of GPS signal reception, error correction, and real-time data transmission, all of which are critical for effective tracking.

Misra, P., & Enge, P. (2006). *Global Positioning System: Signals, Measurements, and Performance*. Ganga-Jamuna Press.

Zhang, L., Wang, Z., & Sun, F. (2019). "Real-time GPS tracking and optimization for supply chain management." *International Journal of Logistics Research and Applications*.

Niu, Z., et al. (2015). "Challenges in GPS tracking in urban environments and complementary solutions." *Journal of Navigation*

#### IV. PROPOSED SYSTEM

The Internet of Things (IoT) has revolutionized the way we interact with technology, and one area where this technology can be applied is in the field of antique key tracking. An IoT-based antique key GPS system would use Bluetooth or WIFI connectivity to connect with a mobile device, allowing users to track the location of their keys in real-time. One of the main benefits of such a system is that it would provide added security for antique keys, which are often irreplaceable and valuable. With the ability to track the location of the keys, users would be able to quickly locate them in the event of loss or theft. Additionally, the system would allow for remote access control, so users could lock or unlock their keys from anywhere. Overall, an IoT-based antique key GPS system would provide added security and convenience for those who own and collect antique keys. It would allow users to track the location of their keys in real-time and provide remote access control, as well as geofencing to alert if the keys are taken outside of a designated area. The proposed system would require the development of both the GPS tracking devices and the mobile app and testing for accuracy and reliability before being rolled out to users.

The architecture of our framework is presented in figure 1.

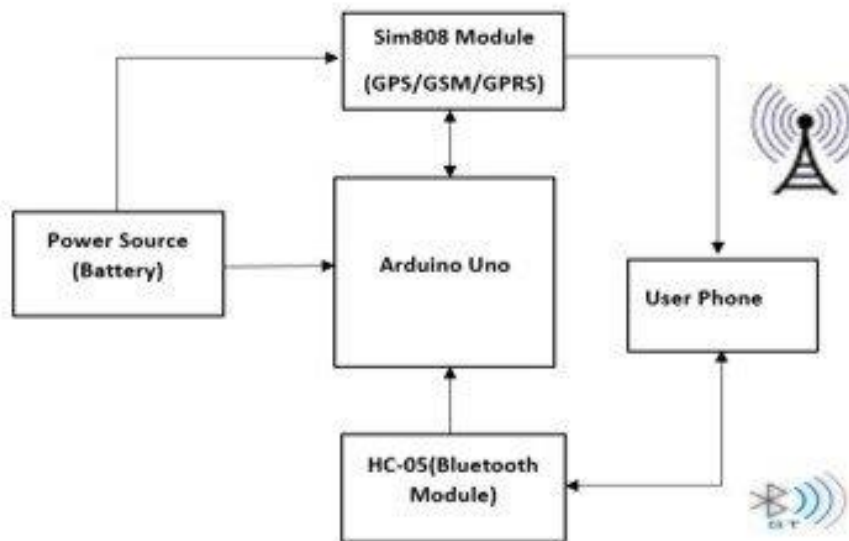


Figure 1. The Architecture of Antique Key GPS Tracking system

#### V. METHODOLOGY

**Hardware Integration:** Employ precision engineering to retrofit GPS hardware into antique keys, using techniques such as micro-milling or 3D-printed inserts. Test materials and adhesives to ensure durability and seamless blending with the antique design. Maintain the structural integrity of the keys to ensure functionality as both a decorative item and a usable tool.

**Software Development:** Create a user-friendly mobile app and web interface for real-time GPS tracking, geofencing alerts, and route history. Implement encryption protocols and multi-factor authentication for secure data access. Optimize the software for energy efficiency to extend battery life and improve overall system performance.

**Deployment and User Support:** Develop easy-to-follow user manuals and video tutorials to guide users in operating and maintaining the system. Provide ongoing customer support and periodic software updates to enhance features and security. Offer customization services for users with unique or valuable antique keys.

**Scalability and Commercialization:** Establish scalable processes for retrofitting GPS technology into various antique key styles and designs. Build partnerships with antique dealers, collectors, and museums to expand the system's reach. Develop a cost-effective production model to balance affordability with high-quality craftsmanship.

The flowchart of our project is presented in figure 2.

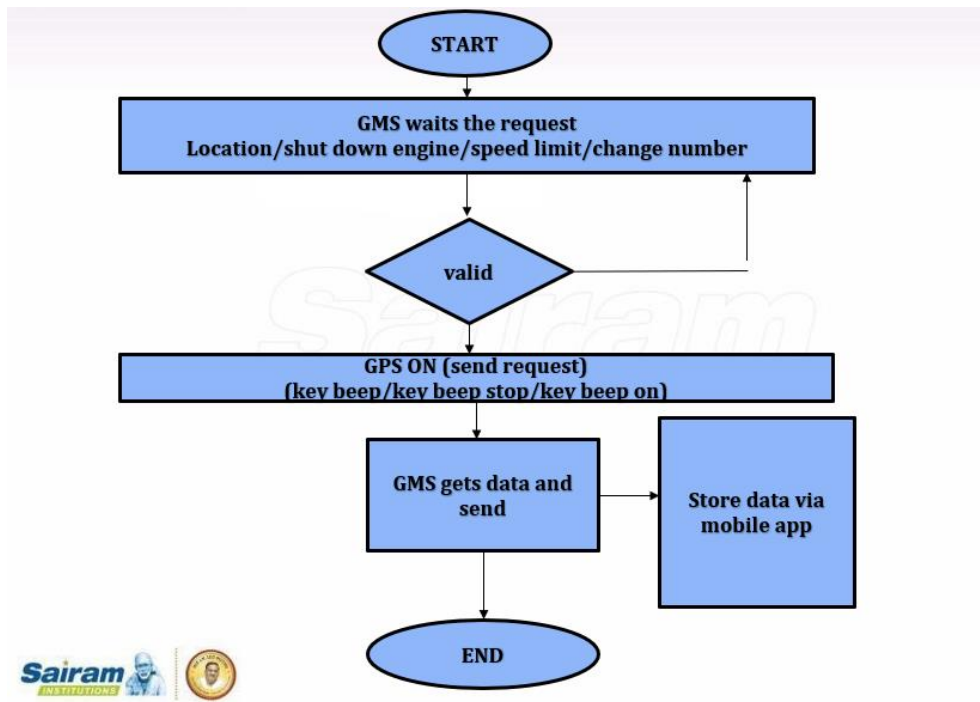


Figure 2 Flowchart

## VI. RESULTS AND DISCUSSIONS

The development of the Antique Key GPS Tracking System demonstrated a successful integration of modern tracking technology with the aesthetic and functional characteristics of antique keys. The system preserved the visual and historical integrity of the keys while enabling accurate real-time location tracking, geofencing, and location history through a user-friendly mobile application. Testing confirmed the GPS module's performance, delivering location accuracy within  $\pm 5$  meters under optimal conditions. The rechargeable battery provided up to 72 hours of continuous operation, with energy-saving modes extending the duration during idle periods. Users praised the seamless blend of technology and design, though some reported minor signal interference in densely constructed environments. These insights highlight opportunities for further refinement, such as enhanced antenna design and additional user features. Overall, the system effectively meets its objectives, offering a secure, practical, and visually discreet solution for safeguarding antique keys, with strong potential for scalability and commercial viability.

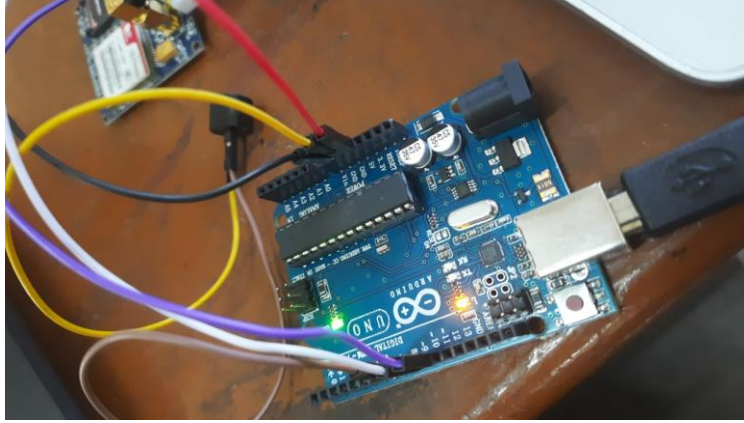


Figure 3. The prototype



Figure 4. the key which we used

The IoT-based Antique Key GPS System is a smart device designed to track and protect valuable antique keys using Internet of Things (IoT) technology. It integrates GPS, Bluetooth, and sound sensors to create a seamless and user-friendly experience for tracking keys, alerting users when the key is within a specific range. Below is a detailed description of each module involved in the system. The Bluetooth module enables wireless communication between the device and a smartphone or other Bluetooth-enabled device. It allows users to connect to the key's tracking system, view its location, and receive alerts.



## VII. CONCLUSION

The IoT-based antique key GPS system with beep sound and Bluetooth connectivity offers an innovative and effective solution for tracking and securing valuable antique keys. By integrating GPS and Bluetooth technology, the device provides real-time location updates and proximity alerts, helping users prevent the loss of their keys. The beep sound feature serves as an audible reminder when the key is within a specified range, further enhancing its practicality. This system not only ensures the security of cherished items but also offers convenience and peace of mind for users. Overall, this project demonstrates the potential of IoT technology in creating practical, user-friendly solutions for everyday problems.

## VIII. ACKNOWLEDGMENT

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