Tracking and Theft Prevention System for Vehicle in Android

Apoorva Narendra[1], Namratha Padiyar[2], Yashwanth Balan[3]
[1,23] *Assistant professor, Department of Computer Application, T John College, Bangalore*

***Abstract*- An anti-theft system is an application used to prevent the unauthorized appropriation of items considered valuable. Theft is one among the foremost common and oldest criminal behaviors. From the invention of the primary lock and key top the introduction of biometric authentication , anti-theft system have evolved to match the introduction of latest invention to society and the resulting theft by others. The application deploys and enterprise security solutions that meets user immediate and future requirement by providing the message and site of auto via an application installed on owner's mobile. On theft detection the appliance will send the notification SMS to the owner alerting him with the knowledge about the theft and therefore the location information where the theft was detected. Also, it is possible for the owner to stop the engine of the vehicle and lock it again through the application. This application is implemented on android and can be enhanced to enable the application on other platforms.**

***Index terms*- Anti-theft, Android, SMS, LOCK, Alert.**

I.INTRODUCTION

An anti-theft system is any device or method wont to prevent or deter the unauthorized access of things considered valuable. Theft is one among the foremost common and oldest criminal behaviours. From the invention of the primary lock and key to the introduction of RFID tags and biometric authentication, anti-theft systems have evolved to match the introduction of latest inventions to society and the resulting theft by others. Under normal circumstances, theft is prevented simply through the appliance and social acceptance of property law. The best anti-theft device ownership is usually indicated by means of visual marking (license plates, name tags). When clear owner identification isn't possible and when there's a scarcity of social observance, people could also be inclined to require possession of things to their own benefit at the expense of the original owner. Motive and opportunity are two enabling factors for theft. Given that motives for theft are varied and sophisticated and are generally speaking not within the control of the victim, most methods of theft prevention believe reducing opportunities for theft.

In addition to the initial obtainable cost of an item, the value of replacement or recovery from theft of the item is typically considered when considering the value of putting in an anti-theft system. This cost estimation usually determines the utmost cost of the anti-theft system and therefore the got to secure it. Expensive items will generally be secured with a better cost anti-theft system, while low-cost items will generally be secured at a lower cost. Insurance companies will often mandate a minimum sort of anti-theft system as a part of the conditions for insurance. Anti-theft systems are designed to boost the problem of theft to an infeasible (but not necessarily impossible) level. The kind of system implemented often depends on the suitable threshold for theft. For example, keeping money in an indoor shirt pocket increases the problem of theft above that necessary if the pocket was on a backpack, since unauthorized access is formed sufficiently more difficult. Methods of theft evolve to decrease the problem of theft, increased by newer anti-theft systems. Because of evolution on each side and therefore the social aspect of theft, the edge for theft is extremely dynamic and heavily hooked in to the environment. Doors in quiet suburban neighborhoods are often left unlocked, as the perceived thresholds for theft are very high. Security is usually compromised through the lax application of theft-prevention practices and attribute generally . The average anti-theft device does not require any additional effort while using the secured item, without reducing the level of security. In practice, users of security systems may intentionally reduce

the effectiveness of an anti-theft system to extend its usability (see passwords). For example, a home security system will usually be enabled and disabled with an easy-to-remember code like " I 1 11" or "123", rather than a safer combination. A very common method of preventing theft is that the placement of valuables during a safe location. The definition of safe depends on the minimum threshold for theft as determined by the owner. Desk stationery is usually considered to be secured if placed in an unlocked drawer faraway from view, while expensive jewellery could be placed during a safe behind an image in a home. Another common method is that the alerting of other individuals to the act of theft. This is commonly seen in department shops, where security systems at exits alert store employees of the removal of unpaid items. Older car alarms also fall under this category; newer systems also prevent the car from starting. The revolution of the technology has made it possible to get notified by your phone, when your properties are stolen.

II. ANTI-THEFT SYSTEM

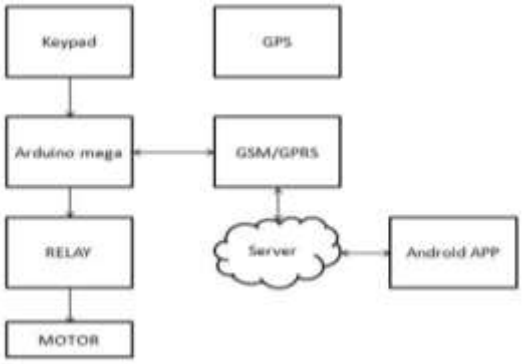
An anti-theft system is an application used to prevent the unauthorized appropriation of items considered valuable. Theft is one among the foremost common and oldest criminal behaviours. From the invention of the primary lock and key to the introduction of biometric authentication, anti - theft systems have evolved to match the introduction of latest inventions to society and the resulting theft by others. The objective of this application are turning ON/OFF the vehicle using the android application, getting the current location of the vehicle and getting the previous locations of the vehicle.

.

III. SCOPE OF THE APPLICATION

The application deploys an enterprise security solution that meets user's immediate and long-term requirements by providing the message and location of the vehicle via an application installed on owner's mobile. On theft detection the appliance will send a notification SMS to the owner alerting him with the knowledge about the theft and therefore the location information where the theft was detected. Also, it is possible for the owner to stop the engine of the vehicle and lock it again through the application. The Anti-theft application is implemented on Android. It is often enhanced to enable the appliance to figure on other platforms.

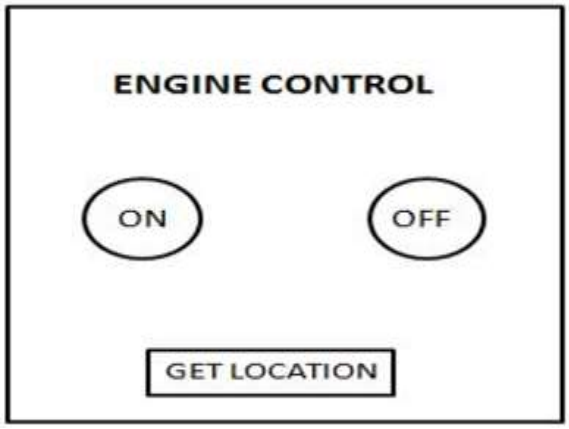
IV. ARCHITECTURE



The above design shows architectural design of Tracking and Theft prevention system for vehicle using android. The keypad is used to enter the password and the Arduino mega checks for validity. The GPS module tracks the location and displays it in the mobile application. Here the motor acts as the engine of the vehicle for the demonstration purposes. The user can start/stop the vehicle using 2 ways. One is by using the mobile application where the user gets 2 options ON/OFF using which he can start and stop the engine respectively. The other way is using the keypad which is attached to the system itself. This will require a password that the user should enter correctly in order to get access to the system. There is also a GET LOCATION button which is used to get the current of the vehicle.

V. USER INTERFACE

The login page looks like the above figure. It asks for the username and the password. If the user enters the correct password, then he can get access to the main page where he can control the vehicle. This gives proper authentication by allowing only that user to access the application who is the owner of the vehicle.



This diagram refers to the main page. Here the user can control the vehicle. The user can start/stop the vehicle by using the mobile application. The user gets 2 options ON/OFF using which he can start and stop the engine respectively. There is also a GET LOCATION button which is used to get the current location of the vehicle.

VI. CONCLUSION

Theft is one among the foremost common and oldest criminal behaviours. From the invention of the primary lock and key to the introduction of biometric authentication, anti - theft systems have evolved to match the introduction of latest inventions to society and the resulting theft by others. The application deploys an enterprise security solution that meets user's immediate and long-term requirements by providing the message and location of the vehicle via an application installed on owner's mobile. Thu, it provides security to the user in case of theft.

VII. FUTURE ENHANCEMENT

In future if this hardware is installed on every vehicle then the rate of theft in the society can be reduced and thus providing security. Also the application discussed is limited to the android platform and can be further developed for other platforms as well.

REFERENCES

[1] M. S. Joshi and D. V. Mahajan, "Arm 7 based theft control, accident detection and vehicle positioning system," International Journal of Innovative Technology and Exploring Engineering, vol. 4, no. 2, pp. 29-31, July 2014.

[2] M. A. A. Khedher, "Hybrid GPS-GSM localization of automobile tracking system,- International Journal of Computer Science and Information Technology, vol. 3. no. 6. pp. 75-85. Dec 2011.

[3] S. S. Pethakar, N. Srivastava, and S. D. Suryawanshi, `RFID, GPS and GSM based vehicle tracing and employee security system," International Journal of Advanced Research in Computer Science and Electronics Engineering, vol. 1, no. 10, pp. 91-96, Dec. 2012.

[4] P. P. Wankhade and S. 0. Dahad, "Real time vehicle locking and tracking system using GSM and GPS technology-an anti-theft system," International Journal of Technology and Engineering System, vol. 2, no. 3, pp. 272-275, March 2011.

[5] J. R. Shaikh and S. M. Kate, "Ann7 based smart car security system," International Journal of Engineering Trends and Technology, vol. 3. no. 2, pp. 210-212, March 2012.

[6] J. M. Hu, J. Li, and G. H. Li, "Automobile anti-theft system based on GSM and GPS module," presented at the Fifth International Conference on Intelligent Networks and Intelligent Systems, Tianjin, China, November 1-3. 2012.

[7] N. Kaushik, M. Veralkar, P. Parab, and K. Nadkarny, "Anti-Theft vehicle security system," International Journal for Scientific Research and Development. vol. 1, no. 12, pp. 2845-2848, March 2014.

[8] V. M. Ibrahim and A. A. Victor, "Microcontroller based anti-theft security system using GSM networks with text message as feedback," International Journal of Engineering Research and Development, vol. 2, no. 10, pp. 18-22, Aug 2012.

[9] B. G. Nagaraja, R. Rayappa, M. Mahesh, C. M. Pala, and T. C. Manjunath, "Design and development of a GSM based vehicle theft control system,' presented at the International

Conference on Advanced Computer Control, Singapore, January 22-24, 2009.