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# THE ADVANCED SECURITY MEASUREMENT FOR WINDOWS OPERATING SYSTEM

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***Abstract -*** *This software is windows based application. It is unique type of application which helps to secure the application's in the computers. With the help of this software, user can restrict other illegal user for accessing applications from their windows system. This software allows authorized user to lock/unlock the installed application in their computer. This software will use Windows Registry for invoking security in Windows Operating System. Our main objective is here to locking/ unlocking the USB, control panel and registry also. By changing the registry value's, authorized user can deny unauthorized user to access particular applications. This software provides effective GUI to easily manage USB devices access using Registry of Windows OS. It provides high level security by applying dual level authentication methods :Image based password and Text based password The basis of these mechanism we will going to implement software which provides powerful security mechanism for Lock/Unlock system as well as user's application and USB also and Enabling/Disabling control panel and provide system information.*

***Key Words:*** *Two Layer Authentication, Windows registry, USB Lock, Application Lock.*

## 1. INTRODUCTION

In windows operating systems, if unauthorized user get system password, they can use or modify the software easily. There is some way in operating system to deny unauthorized user from accessing the application's, but it's not sufficient to provide powerful security level. The proposed software will provide powerful security mechanism to user's system. Because of its two-layer authentication security feature it can be used in various Government sectors for Lock/Unlock software's (e.g. ISM).

Windows Registry provides an efficient way to denied applications in the system. The registry is a central database which store all settings on the computer system[7]. It's like the similar file as configuration files for Linux and also Unix system[6], but instead of being stored in folders, it stored a folder like data structure[3]. The proposed software consists dual level authentication process: Text and Image password to increase security level. Using this software user can perform following operations:

1. To Locking / Unlocking system applications.
2. To Locking / Unlocking user applications.
3. Making Enable / Disable control panel.
4. Enable / Disable components in Control panel
5. To Locking / Unlocking USB drives.
6. Getting all the related information about the operating system, motherboard, processor, user, etc.

The definitive aim of this proposed software is to improve the security level of user confidential application and restrict illegal access to the user's confidential data. The important feature of this software is having the dual level of authentication mechanism for user to verify as the authorized user.

## 2. PROPOSED SYSTEM

There are various security issues in existing application lockers and USB locker software which are not sufficient to provide both system as well as user application locking facilities and also, they are fail to provide strong access control mechanism. To disentangle from these issues, this software helps to provide powerful Application and USB lock feature. It mainly provides services for locking and unlocking system as well as user applications. It also provides effective GUI to control the system by focusing on Windows Registry. This software provides services to access control for USB Lock/Unlock, Enabling/Disabling

Control Panel, and Windows Registry. For implementing powerful security mechanism, it provides dual level security: one is Text password and another is Image Password. If user complete first level of security i.e. Image password, then only they can go for next level of authentication process i.e. Text-password, user can access system only after completion of authentication process.

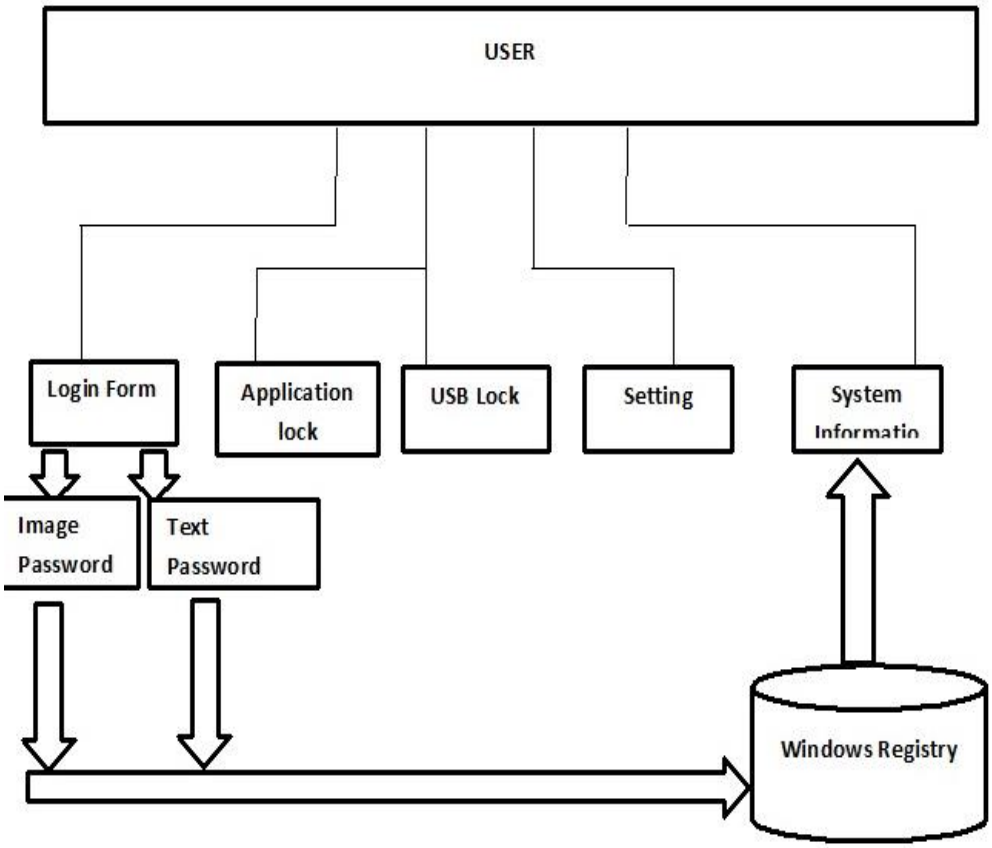


*Fig. 1: System Architecture*

In above figure (fig.1), it describes about System architecture. Firstly, it checks authentication if user, by comparing already saved password which is present in windows registry. After successful complication of authentication, next page will be displayed which contain different section like System information, Application lock, USB lock, changing settings.

**2.1 Registry of Windows OS: -**

Windows registry is a database or central point of information of the computers, it means this maintain information like its hardware, user, operating system, applications software and system software. All version of windows operating system (Windows 9x/ME, Windows NT/2000/XP/2003/2007/2008/2010) saves configuration information and data in Windows

registry. Windows registry is central database for configuration data which is stored in well-arranged manner. System software, users, user applications in Windows OS uses windows registry to store their configuration information. Registry value accessed for referencing during their operation process. The text-based register is used to exchange configuration files and used in Windows 3.x and MS-DOS, like autoexec.bat, .ini files and config.sys files. The registry can be the source for potential evidential data, because very large amount of information stored in Windows registry.

### 2.2 Image and Text password

The first authentication process in this system is Image password. A grid set of images will displayed on screen and user has select proper sequence of images. After completion of this process next level of text password authentication process will be there. In second level of authentication process, user has to enter text password. Image password and text password will be cross checked against the original passwords which is stored in windows registry, if they matched then only user will get access to the system. Else passwords don't match, three chances will be provided to user to enter password again, if user fails again to enter correct password then system will be simply shutdown automatically.

## 3. TECHNICAL FACET

This software deal with windows registry for controlling user to access system software. Generally, it contains five types of HKEY classes, which perform important role in proposed system.

### 3.1 HKEY_CLASSES_ROOT

This particular class will save all related and important data or information of user. Means information stored in the registry that can be used to face future issues like recover password, modify user personal information etc.

### 3.2 HKEY_CURRENT_USER

This particular class helps application vendor and provide on the system and also on user software.

"Computer\HKEY_CURRENT_USER\Software\Microsoft\Windows\Current_Version\policies\ DisallowRun" By this path in windows registry developer can create special key to perform particular task in windows system.

## 4. FLOW GRAPHS

- **Authentication process:**

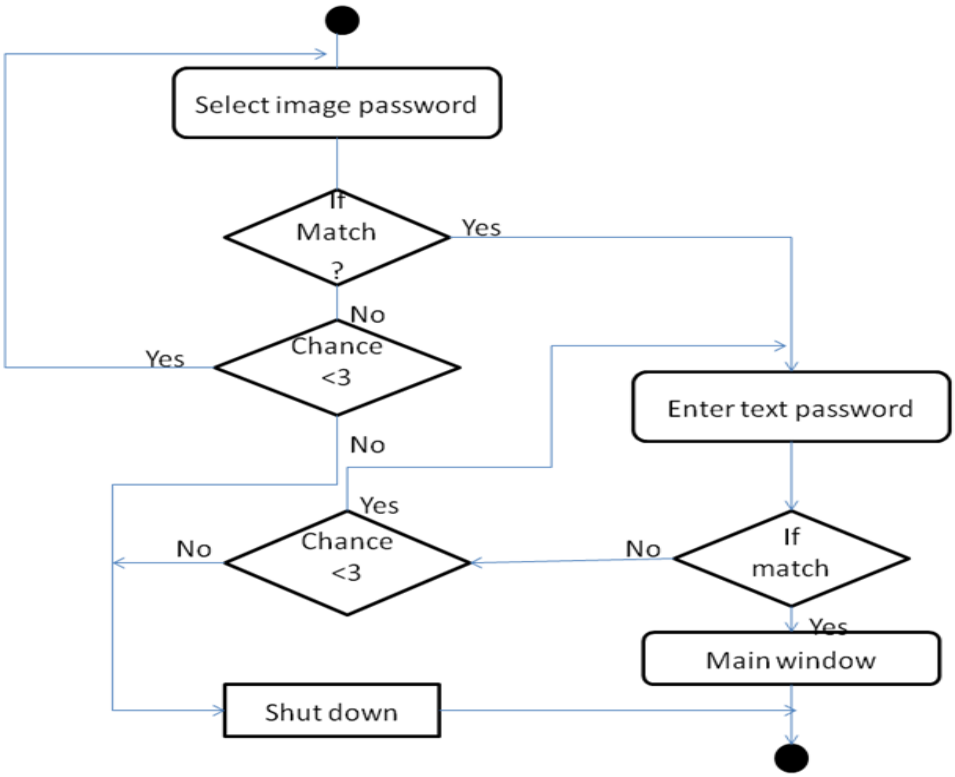


*Fig.2: Flow Diagram for authentication process*

In above fig (fig no.2), it describes about flow of authentication process checking technique. It includes following steps:

- Select image password in sequence, if they matched with password stored in database then go to next level of authentication process.
- If password doesn't match, it allow 2 more chances to enter correct password. Otherwise next time it will shut down your system.
- This step will be same for next level of authentication process, only change is instead of selecting image password you have to enter text password.
- If the 2 authentication process passed by user now they will get the access of our software..

- **Locking/Unlocking application:**

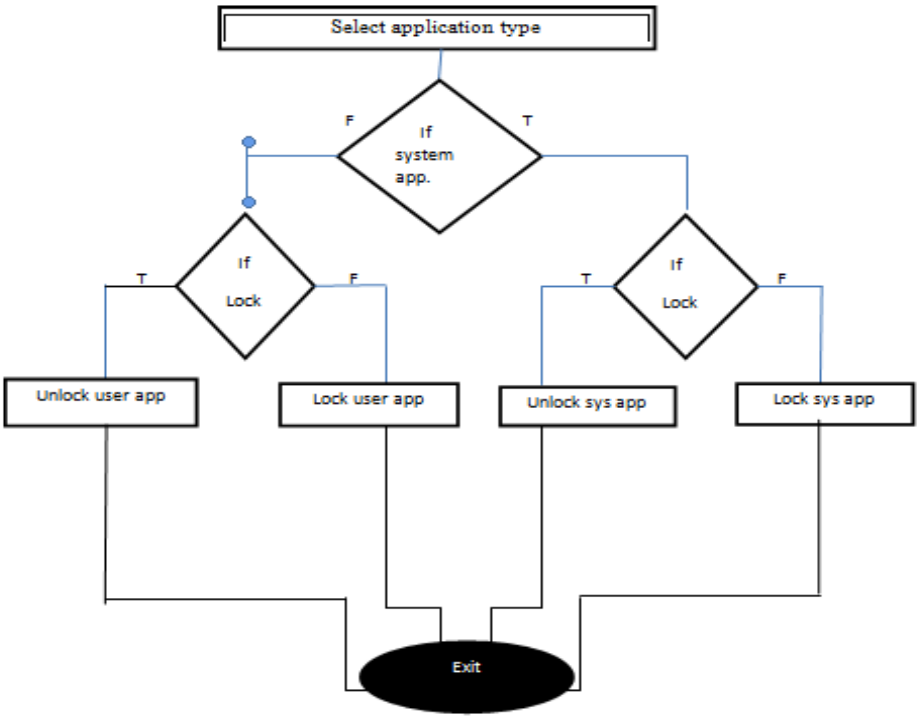


*Fig. 3: Flow Diagram for application lock*

In the above fig (fig.3) it describes about Locking/Unlocking application. It first checks type of application i.e. system app or user app. Then select appropriate application type.

Based on user wish, Locking and Unlocking application, option will be provided. After completion of this process it will be exit on user demand for other selecting/changing other available options.

## 5. CONCLUSION & FUTURE SCOPE

### 5.1 CONCLUSION

This paper mainly focuses on security problem of Microsoft windows operating system application's and other essential data in terms of access restriction to unauthorized person. As windows registry is one type of secure place that maintain user confidential data and information as well as all types of system software, application software and hardware information of system. Uses of two level security technique makes it will be more powerful software in point of view of authentication process. Restrict to accessing some hardware part and system inbuilt routine improves security of Microsoft Windows Operating System.

### 5.2 FUTURE SCOPE

More implementation can be done for locking applications, like it can be fully compatible with UNIX like OS but in that case windows registry must be replaced with UNIX file system. Also, to increase security level for identify particular user individually we will increase authentication process by using face recognition or speech recognition technique. Password recovery mechanism could be made more user-friendly.

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