



## Jester Lock - A Windows Based File Locker Locker

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### Abstract

Windows based app locker have always been there in the app market, but only provide minimal security with the traditional security features like PIN, password. Moreover, the locked file / folder would be visible to everyone which only limits the access, which doesn't completely preserve the privacy of the user. Hence there is a need of a Windows application that preserves the privacy along with the modern-day security features. In this paper, we have proposed a Windows based file locker application that uses face and emotion recognition along with an interactive GIF interface and have discussed its features.

**Keywords:** Face recognition; Emotion recognition; Neural network

### 1.Introduction

Privacy and Security are the key features that are to be kept in mind while creating any application when targeted to reach a wide range of people [1-2]. When it comes to File Lockers, more importance must be given to these features. There are several windows-based file lockers available to public in the application market. In this research paper, with the help of Python packages like Tkinter, Deepfake (developed by the famous company 'Facebook' now known as 'Meta') and many more, we have proposed an idea to create a new age file locker application with a new interactive GIF based app interface [3-6].

We have also discussed its key features along with its merits and demerits of the application.

### Standard Definitions

#### Facial Recognition:

Facial recognition is a technology that utilizes algorithms to identify and verify individuals by analyzing and comparing their unique facial features against a database of known faces [7]. It is commonly used for security, surveillance, and identity verification purposes [8-11].

#### Emotion Recognition:

Emotion recognition refers to the ability of machines to detect, interpret, and respond to human emotions based on various physiological and behavioral cues, such as facial expressions, tone of voice, and body language [12-15]. It is a rapidly evolving technology that has the potential to revolutionize various fields, including healthcare, marketing, and human-computer interaction [16].

#### Neural Network:

A neural network is a type of machine learning algorithm modeled after the structure and function of the human brain. It consists of layers of interconnected nodes that process and transmit information to make predictions or decisions based on input data [17-18].

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## 2. Proposed System

The proposed system involves developing a file locker with face and emotion recognition. Also, our File locker makes the respective file to disappear from the location which was present, and remains to be until it is unlocked. Our emotion recognition system welcomes the authorized user with an interactive GIF which is based on the emotions.

### Output

Below shown images are the actual screenshots of the prototype application

#### Reistration Process:

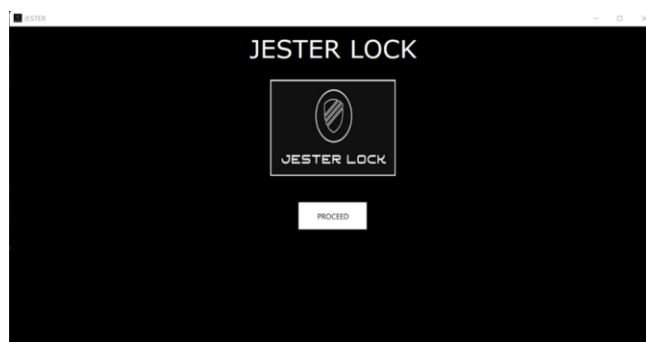


Figure 9.1.1 App Starting page

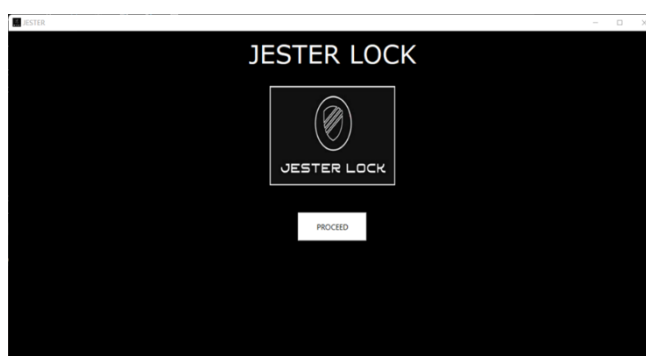


Figure 9.1.2 Registration page

The above images Figure 9.1.1 and 9.1.2, depict the starting page and the registration page of the application. The registration page is where the user gives the app password and registers his face which serves as an authentication for the application. This registration page appears only once to get the authentication data.

#### Login Illustration:

The below illustration shows the denial of access to the application both on typing wrong password and by verifying with the wrong face.

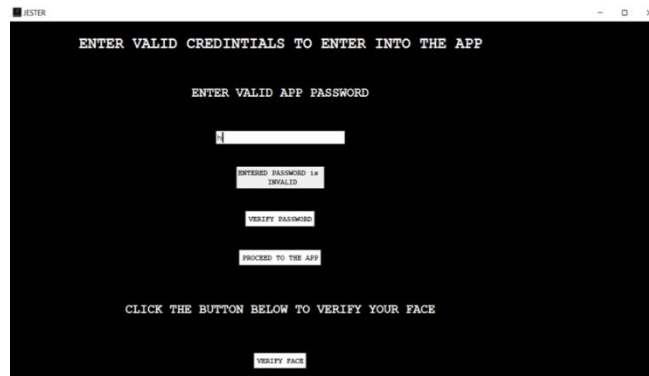


Figure 9.2.1 Starting page of the app

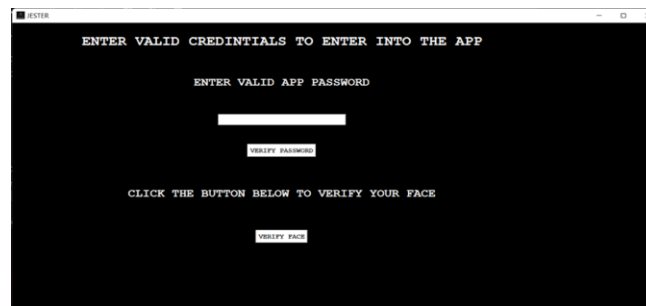


Figure 9.2.2 User Authentication page

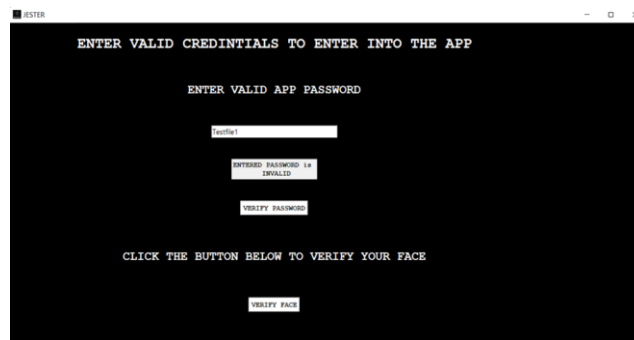


Figure 9.2.3 Invalid password entered

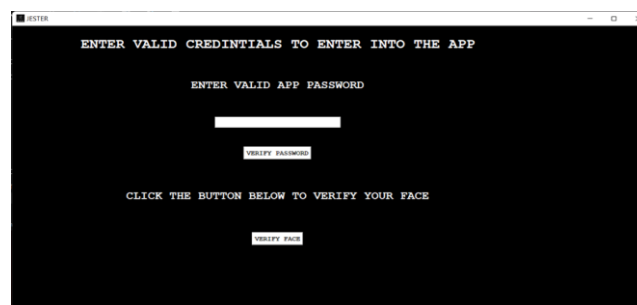


Figure 9.2.4 Proceed to app button shown after re-entering the password

The figures 9.2.3 and 9.2.4 represent denial and grant of access to the application after entering the incorrect and the right passwords respectively.

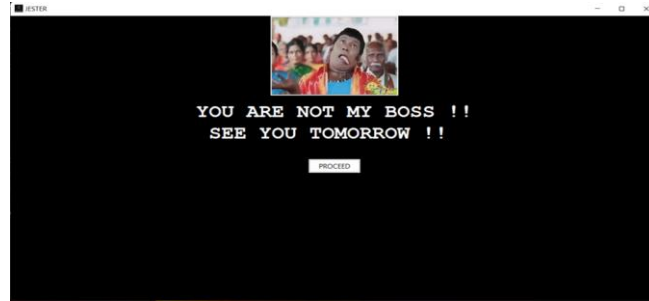


Figure 9.2.5 User Authentication page

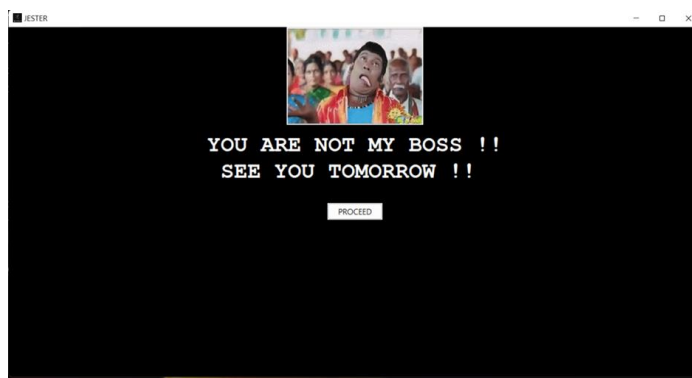


Figure 9.2.6 GIF displayed due to denial of access after face verification

The above figure 9.2.6 shows the denial of access to the application due to the verification of the unauthorized face and redirects the user to the user authentication page with the help of the proceed button.

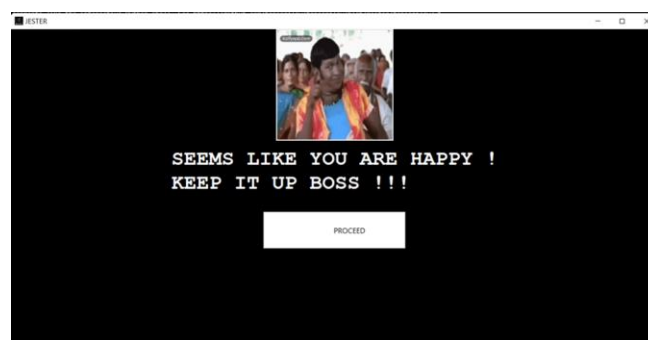


Figure 9.2.7 Welcoming GIF displayed based on the real time emotion captured

The above figure 9.2.7 depicts the GIF displayed based on the emotions captured by the webcam in real time. By clicking on the proceed button, you can further proceed into the app.

### Complete Illustration

The below illustration shows the working of the app right from the start to the end.

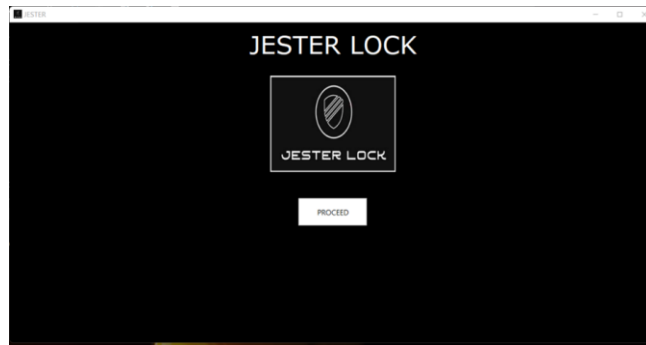


Figure 9.3.1 Starting page of the app

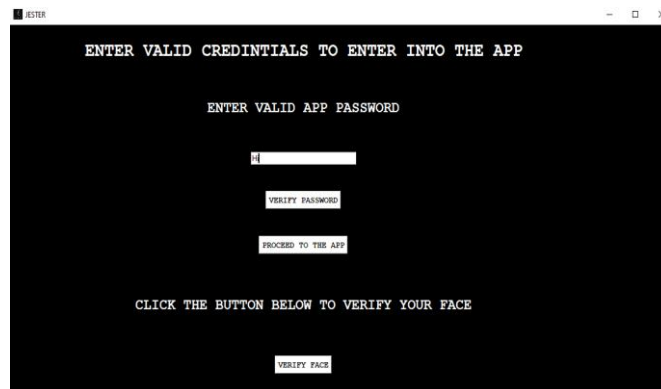


Figure 9.3.2 User Authentication page



Figure 9.3.3 User Authentication page with password entered

Figure 9.3.4 GIF displayed based on emotion observed



Figure 9.3.5 depicting the locking and unlocking sections of the app

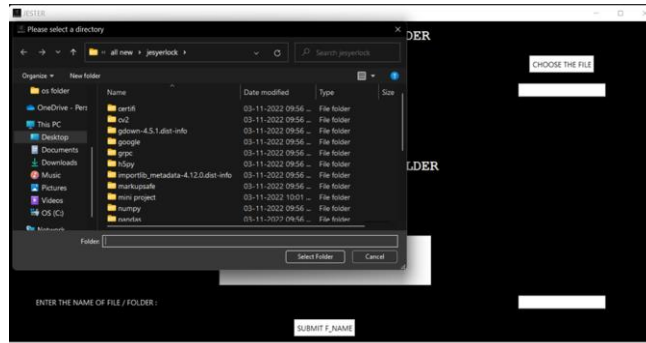


Figure 9.3.6 depicting the selection of the file to be locked using browsing directory

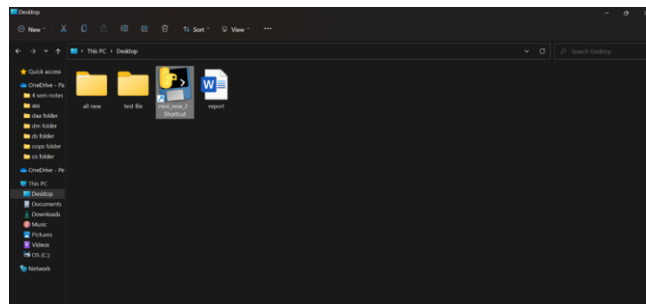


Figure 9.3.7 depicting the presence of the folder named 'test file' before locking

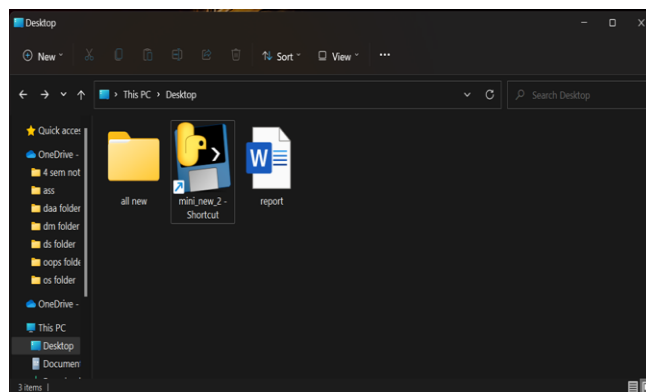


Figure 9.3.8 depicting the absence of the folder named 'test file' after locking



Figure 9.3.9 depicting the listing of the names of those files that are locked

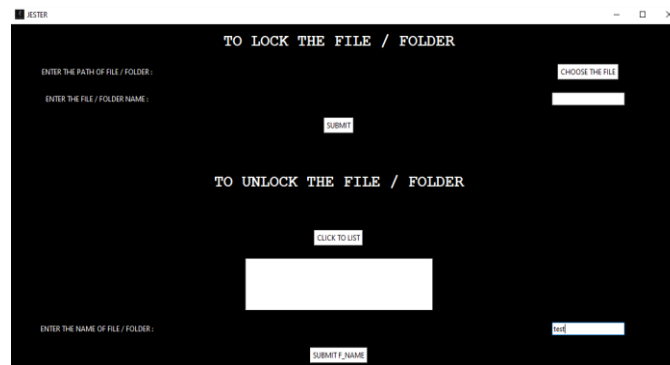


Figure 9.3.10 depicting the entering the code name of the file that you used while locking, to unlock now

### 3. Research Analysis

The main advantage of our application is the GIF interface that works based upon the real time emotions expressed by the user with the help of DeepFace emotion recognition framework along with the security enhancement provided by the DeepFace face recognition framework.

Though the enhancements to security and the user experience act as an advantage to the app, there are also some drawbacks in our prototype application.

### 4. Conclusion

Thus, the developed application prototype is quite unique in its features with some enhancements in the user experience with the help of GIFs. Windows based File Lockers with Facial Recognition are in a huge demand and our application aims to seal that spot in the market.

### 5. Future Works

In future, we are about to include a personal assistant that accompanies throughout the application for any kind of support. The overall size of the application would be minimized. The number of emotions that could be recognized would also be increased. With proper Financial and technical support, we could bring this application into a more competitive contender in the windows based application market.

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