**Senior Project Proposal**

Jenny Min

Charleston Southern University

CSCI 497.05 Senior Project Design

Professor O’Neill

March 31, 2022

Student Name: Ji Sun Min (ID 205032)

Degree and Major: Bachelor of Cyber Security (BS) and Cyber Security

Project Advisor Name: Michael O’Neill

Expected Graduation Date: May 2023

Problem Statement:

Not securing the data is considered one of the biggest vulnerabilities, which will cause an exposure data. It does not have to be the sensitive information, but there might be unwanted files the device owner does not wants to share with other people. And smartphones, which are commonly found, are one of the smallest computers that people are handling on daily basis. The smartphone holds the device owner’s name, phone number, email address, images, credit or debit card information, and so on. Each year, more than seventy million smartphones get lost in the United States and obviously smartphone sales are increasing every second. We can imply that this can be interpreted that there will be increasing numbers of lost smartphones in the future. Surprisingly, twenty-eight percent of smartphone owner do not secure their smartphone while they are in risk of losing their device that may contain sensitive data such as personnel information. Among these smartphone users, twenty-two percent of owners have installed software that can help them find the phone when it gets lost or stolen. Additionally, there are several methods to secure the smartphone, and thirty-six percent of smartphone owners set four-digit PIN to secure their phone, which is the weakest lock method.

Then why is it necessary to secure our phones? Simply because according to Anderson, cyber security experts recommend that smartphone owners take a number of steps to keep their mobile devices safe and secure. (Anderson, 2017) A smartphone is basically a little computer device that is super portable. It contains various information including perhaps. payment methods. It is essentially important to lock the device these days to prevent and avoid the leak or the exposure of personnel data during the time when the device is physically not with its owner.   
 The target audience is whoever that uses mobile device that is operated in Android platform. A device user who desires to strengthen his or her device security should absolutely use it. It is going to offer in English, Spanish, and Korean. So, any user who can comprehend English, Spanish, or Korean can use it. Most importantly, a device user who wants to protect sensitive information exposure should definitely consider using the app.

Unfortunately, risk always comes with the plan. By using the security app, user may lock himself or herself out of the device. Even though the app is activated, user may lose the device, or the device may get stolen by someone else. Also, a user may not answer the incoming call before the unlock the phone while the app is in currently activated. A user may in emergency situation which they might not want to use the app. The worst risk is when a user forgets their recovery method. The recovery method will be a few security questions and the user will have to know the answers accurately.

Computer can hold a lot of data or information. The information may be very confidential and sensitive which it may have to be locked so that only authorized people can have an access. So, my senior project is focusing on securing the physical device, and I am going to create a security app.

Project Description:

There are going to be mainly three different methods of unlocking. Pattern draw method, a number PIN, and a word PIN. For draw method, a user may set a complex pattern within nine dots (3 x 3). For a number PIN that, a user may user the same number multiple times and the length will have to be over four digits. For a word PIN, user may user same letter multiple times and the length will have to be more than four characters. User may user lower case, upper case, number, and symbols. There is no maximum length limit. After they set up their locking method, a user will have to choose three different security questions among the list and answer the following questions. It will be the recovery plan if she or he ever forgets it. Besides that, a user can make an emergency call to 911 without unlocking the phone.

Proposed Implementation Language(s): The app will be written in the Java language.

Development Tool: Platform is Android OS. I will use Android Studio for a developer tool which means android devices includes smartphone and tablet are the only compatible devices for this app.

Additional Software/Equipment Needed: Extra smartphone for testing

Personal Motivation: When my semester project team successfully created the minigame, Hangman, for CSCI 325, I wanted to build another app for a smartphone or a tablet. CSCI 325 is Object-Oriented Programming class that teaches the Java language. I want to feel accomplishment using my own app by the time I graduate the school.

Outline of Future Research Efforts: I have to research more libraries as I write a code for a certain function I want to develop, learn how to properly submit to Google Market to release the app officially.

**References**

Anderson, M. (2020, August 25). *Many smartphone owners don't take steps to secure their devices*. Pew Research Center. Retrieved March 31, 2022, from https://www.pewresearch.org/fact-tank/2017/03/15/many-smartphone-owners-dont-take-steps-to-secure-their-devices/

Chandler, S. (2020, July 14). *Brits Boost Mobile Industry by losing 98 million smartphones to date*. Forbes. Retrieved March 31, 2022, from https://www.forbes.com/sites/simonchandler/2020/07/14/brits-boost-mobile-industry-by-losing-98-million-smartphones-to-date/?sh=1c12f97755c9

TheConsumerman. (2014, April 26). *Most Americans don't secure their smartphones*. CNBC. Retrieved March 31, 2022, from https://www.cnbc.com/2014/04/26/most-americans-dont-secure-their-smartphones.html