Two-Factor Safe

Project Team Members
Group #6
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Project Summary
The project will consist of several main parts: the raspberry pi, breadboard, a RFID scanner, a servo, and a box or simulated lock. Using these components and code the box will open after a two-factor authentication system is passed.

Goals and Objectives
The main goals of this project are to generate a random four digit number code that will be automatically emailed to any and all logged emails, using a RFID scanner to act as another security level, and finally after passing both steps the box will then open and will lock after user action is taken.

How will it be used?
The general use case for this project is for the user to go to the box and scan their phone or a compatible card. After the card is scanned (assuming the user is permitted) they will be prompted to type in a four-digit code. This code will be emailed to the user based on a logged email database within the code. After they type in the correct code the box will open allowing for the user to do as they wish. After the user is done, they will click the lock button on the screen and be asked if the box is closed if they answer yes the lock will engage and be ready for the next time it is to be used.

GPIO
GPIO will be used in this project to get input from the RFID scanner after scanning has taken place and to control the servo to both open and close the lock

How do you think it will work?
We anticipate the sensors to correspond in the following manner: RFID –> pi –> servo. The functions will occur as follows, RFID will send to the pi if correct the touchscreen GUI will prompt the user for the code and then if correct the servo will engage opening the lock, then after the lock button is clicked the servo will engage closing the lock

GUI
For this project, The GUI will have a numpad with the 10 basic digits from 0 to 9, there will be a few popups requiring input from the user to proceed, one such popup will occur before the box is locked, another will occur if user input at any stage is incorrect, and possibly another popup telling the user what to do before each step before action is taken.

Github Repository
This project's Github repository is located at: https://github.com/Will-Coker513/132ProjectWWD

Gantt Chart

Tasks	Start Date	End Date
Research	3/27/20	4/10
Classes	4/10	4/17
Coding	4/17	4/30
GUI	4/30	5/7
Testing	5/7	5/12
Demo	5/12	5/14

Tasks	Start on Day	Duration
Research	0	14
Classes	14	7
Coding	21	13
GUI	34	7
Testing	41	5
Demo	46	2