Name: Michael Randazzo

Class: Intro to Computer Science

Unit: Algorithm Writing/Conditional Applications

Lesson Topic: Day 4-5 Alarm System Setup/Algorithm Writing/Code

Lesson Objective:

- Create a project with multiple event procedures

SWBAT:

- Write an algorithm and then working code for the typical alarm system

Standards:

- 9-12.CT.8 Develop a program that effectively uses control structures in order to create a computer program for practical intent, personal expression, or to address a societal issue.
- 9-12.CT.9 Systematically test and refine programs using a range of test cases, based on anticipating common errors and user behavior.

Teaching Tools:

- Visual Studio 2019, Smart Notebook, Google Docs

Procedures:

- **Do Now:** Create a new project called Alarm System and create a design window matching the one given on the board. This design contains a lot of elements so this will take some time.
- Teacher will demo how entering the buttons edits the textbox and students will discuss how this is happening. The conclusion of this discussion will be that each button is a click event that concatenates the corresponding value to the end of the string in the text box
    - The key values that the discussion should generate are that the button clicks are separate event-procedures and that they are editing the text box
    - If necessary, the teacher should review the “&” and how it can be used for string concatenation.
- Students will complete part one of the Alarm System project which makes the 1-9 buttons work
    - This is potentially tedious but students should work through it in steps. Students who finish this step early will be able to start working on part 2 early.
    - If a student is struggling, teacher should model how to create 1 working and students can copy that solution for 2-9
- Teacher will demo the enter button and how it should function and the teacher will display the prompt for part 2 of the project. Students should then write and submit an algorithm for how the enter button will work.
    - The demo should highlight what should happen if a correct and incorrect password are entered
    - Note: the algorithm is assuming a password has already been entered.
- Students should spend the remainder of the two days continuing to make a working version of the alarm system. Once working teacher will check the project for credit and then students will be prompted to work on the bonus

- Students when stuck should refer back to their algorithm and ensure that it is working as intended. Bonuses are to end the program after 3 incorrect tries and to not allow an entry that is larger or shorter than 5 digits.
- Teachers should not provide hints on bonus assignments.