Defuse the Bomb

A CSC 102 Project

Team: JLZ

Github: [swisherrr/jlz: CSC 102 Bomb Project (github.com)](https://github.com/swisherrr/jlz)

# Team individualization

What did you tweak to the design provided by your instructor that makes it different from the other teams? In other words, what did you do to make your version of the “bomb” unique?

The biggest tweak that made our bomb unique was the dependent phases. Our Toggles phase was dependent on the button phase. These two phases were defused concurrently. Another unique aspect of our bomb was the flashing screen. Once a phase is defused, the screen blinks green. Additionally, the screen blinks red when the player gets a strike. Lastly, our keypad phase is unique because it relies on the physical aspect of the keypad rather than a cipher, riddle, etc.

# Future development plans

If you were to continue working on this project, what would you do? Where could you go from here to make it better, more interesting, more fun? What could be done to increase the project’s broader impact (e.g., to make it marketable)?

To further improve our bomb, we would add animations and graphics to the GUI to create a more immersive and exciting experience. Moreover, we would create new buttons with various functions such as a gambling system. When the player pushes the “gamble” button, they would lose one strike and a random amount of time (which could be negative) would be added to the clock. This would be useful if they have several strikes left but not enough time to defuse the bomb. We would also make the phases more complex with multiple puzzles for each phase. Lastly, we would implement a score component that allows players to keep track of their high score and show them off on a leaderboard.

# Lessons learned

What did you learn by working on the project throughout the course? In your opinion, did it relate to *The Science of Computing* curriculum (and, if so, how)? How was the experience beneficial to problem solving in general? What did you learn that will benefit you in future courses in the Computer Science curriculum?

In our opinion, the project did fit well with *The Science of Computing* curriculum. The main thing we learned from this project was problem solving. We had to come up with a variety of creative solutions to fix problems that arose throughout the project. The biggest example of this is threading. We knew how to code the phases of the bomb but this often led to issues with threading. Another example of the problems we encountered was the keypad phase. We had issues with coding an algorithm that correctly converted the keys to their “jump the 5” counterpart. To solve this, we decided to hard code a dictionary for the keypad instead of an algorithm. We also learned how to work in a team efficiently. Overall, we met several times outside of class to work on the bomb as a team. During these meetings, most of our time was spent brainstorming ideas and testing the bomb. We also took this time to plan our development by dividing the project into smaller tasks and working on them when we could not meet. The skills of problem solving and teamwork will be greatly beneficial in future courses in the Computer Science curriculum.