Defuse the Bomb

A CSC 102 Project

Team: Deadly Denotators

Github: https://github.com/Zachk11/Deadly-Dentinators

# 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?

To make our bomb unique, we made a few changes. The first change we made was changing the number of strikes required before the defusal failed. We changed this number from 5 strikes to 3 strikes. Another change we had to make was to our toggles. Our right most toggle, which was our least significant bit, stopped working halfway through the project. In order to make our bomb diffusible we had to make it so this toggle would never be involved in the solution. To achieve this we made it so the target value for the toggles could only be an even number, since the toggle that was unresponsive was the “1” toggle, so any target value that was odd was would not be possible to diffuse. To make the target value even only, we put an if statement into the setup phase that specified if the serial number total sum was odd, it would create another serial number until the sum was even. We also changed the keywords to make our shifts and passphrases more unique. Some of the final changes we made were adding new defusal, failed defusal, and success sounds.

# 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)?

If we were going to continue on with this project, the first change we would make would be to change our right most toggle, as it stopped working halfway through the project. This would allow us to have more possible combinations and get rid of the part of our serial number that only allows for even numbers. Another change we would do is to make the time go faster after each strike and cut time off for every strike you get when defusing the bomb. We would also make sound play throughout whole bomb countdown instead of just when the bomb is planted, explodes, or is defused. Finally and probably the biggest change we would make to our bomb would be to make it so each phase has to be defused in a certain order before you can go onto the next phase. This would make it so the toggles have to be defused first, then the keypad, then the button, and finally the wires, or a similar order. This would make the game more unique and difficult and add something to our bomb that no other groups really tried.

# 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?

While working on this project we learned a few things. One of the main things we learned was how to adapt to issues with our project in order to make it work as best as possible, which we had to do with our right toggle. We also learned how to edit and change a code that is given to us instead of writing it from scratch, which is useful when trying to change a program to work for a specific reason other than why it was made, and to learn how to debug. It related to the Science of Computing curriculum because it taught us important lessons on how to combine multiple parts of a program into one major project, and like mentioned above, learn to alter code to our specific wants and needs. These skills will be beneficial in our future as no matter what path we take with computer science, we will always have to change and adapt the materials we are given in order to work more efficiently and effectively.