

Boolean Logic: “Boolean Bomb Squad”

Emma Fischer and Chris Johnson
Computer Science
University of Wisconsin – Eau Claire
Eau Claire, Wisconsin 54701
FISCHEEL6063@uwec.edu, JOHNCH@uwec.edu

Abstract

Recently, I’ve been working towards creating a game that introduces the basic concepts of Java Boolean logic to coding beginners. Using an interactive game, the user is given instant feedback and a benchmark of how well they are understanding the material. This is important as it gives the user the ability to reinforce proper coding practice. As this game is still in the design phase, the testing of users has not been implemented yet.

Emma Fischer and Chris Johnson
Computer Science
University of Wisconsin – Eau Claire
Eau Claire, Wisconsin 54701
FISCHEEL6063@uwec.edu, JOHNCH@uwec.edu

1 Game Description

“Boolean Bomb Squad” is an interactive game I created to teach coding beginners the basics of Java Boolean logic. The game is targeted towards a beginner level in the hopes that teaching them the basics of Java Boolean logic in a fun and rewarding way will help them progress at a faster pace in the future. This basic knowledge of Boolean logic will give the targeted audience a head start and slight exposure before participating in a higher level of programming.

The specifics of my game will include introduction of the basics of Boolean logic such as the operators of ‘and’, ‘or’, and ‘not’. I will introduce these concepts through a series of levels that gradually progress in difficulty. The first level will introduce the ‘and’, ‘or’, and ‘not’ operators on their own using ‘true’ and ‘false’ values in the problem presented. The user will be presented with problems instantiating these operators and must input a correct solution within the allotted amount of time. The user will then input the solution they believe to be correct for each problem and press a button labeled “diffuse” to check the correctness of their answers. If any one of the answers the user inputs is incorrect, a dialog box will pop up warning them that they are running out of time to diffuse the bomb. The user will get three tries to get all the problems presented correct. If the user cannot correctly answer the problems presented after three tries and within the allotted amount of time, the bomb will explode. If the bomb explodes, the user will not be able to move onto the next level. The levels after the initial introduction of those first three operators will gradually add more concepts such as the ‘not’ operator, parentheses to force precedence, and possibly numerical values to be used for mathematical operations between variables.

All the above concepts that will be taught using my game should result in the promotion of the ultimate learning goal: a better understanding of Java Boolean logic so that the users of my game can have a better understanding for class or for future programming. The game that I am creating will hopefully be used as a sort of interactive textbook across all academic institutions wishing to introduce basic Java Boolean logic.