**Test Plan: Team It’s an Algorithm!**

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**Program: FactFun Math Tutor**

This is the test plan for Team It’s an Algorithm! in which we will outline specific test cases to be executed by testers of our FactFun project. We are currently testing using Version 14.

**Student Testing Environment:**

Students from St. Gregory the Great’s Middle School Coding Club will be testing the program for Team It’s an Algorithm!. Ideally, there will be ten students and testing will be completed between 4/7/16 and 4/12/16.

**Test Case 1:**

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| **Test Scenario** | Student is ‘good’ at their math facts. |
| **Test Case** | Student accurately answers 5 consecutive questions, then exits the program. |
| **PreConditions** | * Student accesses code via an online compiler (cpp.sh) * Student knows their multiplication facts or is provided with a calculator for testing purposes. |
| **Test Step(s)** | 1. Student runs the program using cpp.sh 2. Student accurately answers the first prompted math fact problem 3. Student answers ‘y’ or ‘Y’ when prompted to complete another problem 4. Student repeats steps 2 and 3 a total of 5 times, choosing no after solving the 5th problem by entering ‘n’ or ‘N’ when prompted. 5. Student exits the program |
| **Test Data** | Since FactFun randomly outputs multiplication problems for practice, Team It’s an Algorithm cannot predict what the test data will be for the actual multiplication problem. However, when the student is prompted to choose whether or not to answer another question, on times 1-4 the student should enter y, Y, y, Y, and on time 5 they should answer n or N. |
| **Expected Results** | Student should be able to successfully run the program with no errors. |
| **Actual Results** |  |
| **Pass/Fail** |  |

**Test Case 2:**

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| **Test Scenario** | Student answers a few questions incorrectly while running the program. |
| **Test Case** | Student gets all problems correct but has to try 2 times on their second problem and 3 times on their third problem. |
| **PreConditions** | * Student accesses code via an online compiler (cpp.sh) * Student knows their multiplication facts or is provided with a calculator for testing purposes. |
| **Test Step(s)** | 1. Student runs the program using cpp.sh 2. Student accurately answers the first prompted math fact problem 3. Student answers ‘y’ or ‘Y’ when prompted to complete another problem 4. Student incorrectly answers the second problem. 5. Upon trying again, student correctly answers the second problem. 6. Repeat step 3 7. Students incorrectly answers the third problem. 8. Student tries a second time, unsuccessfully. 9. Upon trying a third time, student correctly answers the third problem. 10. Repeat step 3. 11. Student repeats steps 2 and 3. 12. Student repeats step 2, choosing no after solving the problem by entering ‘n’ or ‘N’ when prompted. 13. Student exits the program |
| **Test Data** | Since FactFun randomly outputs multiplication problems for practice, Team It’s an Algorithm cannot predict what the test data will be for the actual multiplication problem. However, when the student is prompted to choose whether or not to answer another question, on times 1-4 the student should enter y, Y, y, Y, and on time 5 they should answer n or N. |
| **Expected Results** | Student should be able to successfully run the program with no errors. |
| **Actual Results** |  |
| **Pass/Fail** |  |

**Test Case 3:**

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| --- | --- |
| **Test Scenario** | Student enters letters instead of numbers (ie. seven instead of 7). |
| **Test Case** | Student tries to enter the word form of the number instead of the standard form of the number. |
| **PreConditions** | * Student accesses code via an online compiler (cpp.sh) * Student knows their multiplication facts or is provided with a calculator for testing purposes. |
| **Test Step(s)** | 1. Student runs the program using cpp.sh 2. Student types the word form of the answer to their first prompted math fact. 3. Student follows the prompt to enter a number. 4. Student chooses not to solve any more problems by entering ‘N’. 5. Student exits the program. |
| **Test Data** | Since FactFun randomly outputs multiplication problems for practice, Team It’s an Algorithm cannot predict what the test data will be for the actual multiplication problem. However, when the student is prompted to choose whether or not to answer another question, they should answer N. |
| **Expected Results** | Student should be able to successfully run the program with no errors. |
| **Actual Results** |  |
| **Pass/Fail** |  |

**Test Case 4:**

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| **Test Scenario** | Student does not follow prompts. |
| **Test Case** | Student has no interest in playing and randomly presses letters and numbers on the keyboard. |
| **PreConditions** | * Student accesses code via an online compiler (cpp.sh) * Student knows their multiplication facts or is provided with a calculator for testing purposes. |
| **Test Step(s)** | 1. Student runs the program using cpp.sh 2. Student types randomly on the keyboard and presses enter. 3. Student repeats step 2 three more times. 4. Student accurately answers the math fact 5. Student randomly types again, ignoring the prompt. 6. Student reads the prompt and chooses not to answer any more questions by entering ‘n’. 7. Student exits the program. |
| **Test Data** | Since FactFun randomly outputs multiplication problems for practice, Team It’s an Algorithm cannot predict what the test data will be for the actual multiplication problem. However, when the student is prompted to choose whether or not to answer another question in step 6, they should answer N. |
| **Expected Results** | Student should be able to successfully run the program with no errors. |
| **Actual Results** |  |
| **Pass/Fail** |  |