

Course : Fundamentals of Programming with JavaScript(FSD102)	Assignment	
Instructor: Kadeem Best	Date Given: February 15th 2020	Date Due:March 28th 2020

Notes for the Student: This Individual Assignment is designed to give you practical experience in composing scripts using JavaScript while testing your understanding of the basic programming constructs (control constructs, expressions, operators, objects, functions, arrays). Thoroughly read the specification, ensure that you fully understand the business rules and what the requirements are. Then, proceed to develop the program, carefully documenting as you go.

Background: You will need to have access to a code editor and have a thorough understanding of programming.

Assignment Submission Requirements

- A written report should be emailed to me by midnight on the deadline date.
- The written report must be in pdf format and must contain the following :-
 - A cover page.
 - A table of contents.
 - A link to the GitHub Repository of the javascript file
 - Screenshots of your website, with relevant descriptions, detailing whether the functionality was met or not met, as specified below.

Assignment Regulations

- This assignment must be done individually.
- Must be submitted to Google Classroom at midnight on the deadline date.
- You must demo the working program to me on Saturday, March 21st 2020.

Detailed Specification

This assignment must be completed as an individual assignment.

You have been asked to develop a one player JavaScript multiple choice math game that tests children, between ages 8 to 11 years old, ability to add, subtract and divide.

At start up, the game should thoroughly display the rules of the game and then prompt the player to enter his or her name and age. **Note, only children between the ages of 8 to 11 years old are allowed to play this game.** Thus, if a player enters an age that does not meet the aforementioned criteria, then the game should abruptly end with a suitable error message.

The game consists of 10 levels, which are broken down into three (3) game rounds consisting of a series of questions .

See below for rules regarding the game rounds:

Round 1

This round consists of four (4) levels, level 1 through level 4 and is deemed the “**Add round**”. The intention of this round is to test the player’s ability to add. **For each question in this round, two random numbers must be generated.** The first random generated number must be between 1 to 25 and the second random generated number must be between 1 to 9.

The game is then required to generate two multiple choice options. Each multiple choice option would contain a character and a number, one of which must be the correct answer. The player would then be required to enter the character (A or B) that corresponds to their answer.

Note, the order in which the correct answer appears and the incorrect number option must be randomized(Leave out this part for now)

Example:

Latoya you are on Round 1, Level 1. Can you please enter the letter which represents the correct answer for $24+8$:

- A. 32
- B. 12

Round 2

This round consists of four (4) levels , level 5 through 8 and is deemed the “**Subtract round**”. The intention of this round is to test the player’s ability to subtract. **For each question in this round, two random numbers must be generated.** The first random generated number must be between 1 to 25 and the second random generated number must be between 1 to 9. **Note, the first number must be greater than the second number.**

The game is then required to generate two multiple choice options. Each multiple choice option would contain a character and a number, one of which must be the correct answer. The player would then be required to enter the character (A or B) that corresponds to their answer.

Note, the order in which the correct answer appears and the incorrect number option must be randomized(Leave out this part for now)

Example:

Latoya you are on Round 2, Level 5. Can you please enter the letter which represents the correct answer for 25 -5:

- A. 15
- B. 20

Round 3

This round consists of two (2) levels, level 9 through 10 and is deemed the “**Divide Round**”. The intention of this round is to test the player’s ability to divide. **For each question in this round, two random numbers must be generated.** The first random generated number must be between 1 to 25 and the second random generated number must be between 2 to 9. **Note, the first number must be divisible by the second number.**

The game is then required to generate two multiple choice options. Each multiple choice option would contain a character and a number, one of which must be the correct answer. The player would then be required to enter the character (A or B) that corresponds to their answer.

Note, the order in which the correct answer appears and the incorrect number option must be randomized(Leave out this part for now)

Example:

Latoya you are on Round 3, Level 9. Can you please enter the letter which represents the correct answer for 20 / 4:

- A. 5
- B. 3

Other Rules

Every time a player correctly answers a question they should be awarded a certain number of points and then the said player would progress to the next subsequent level. However, if a player incorrectly answers a question they must lose points and would not be able to progress to the subsequent level. However, in the event of answering incorrectly, the game must generate a new question for that level.

For example, consider the below scenario :

Latoya you are on Round 2, Level 5. Can you please enter the letter which represents the correct answer for 25 -5:

- A. 15*
- B. 20*

Assuming that Latoya answers the question incorrectly and enter's A for the above question, your game should prevent Latoya from moving onto Level 6 but still generate a brand new question. Example :

Sorry Latoya you answer the question incorrectly and thus you can't move onto Level 6, See new question

Latoya you are on Round 2, Level 5. Can you please enter the letter which represents the correct answer for 15 -10:

- A. 15*
- B. 5*

Note, the minimum points a player can have is zero.

End of Game Rules

A player will win the game if he or she successfully answers all 10 questions correctly, however, a player will lose the game if he or she runs out of chances. Every time a player incorrectly answers a question they lose a “chance”. A player has only 4 chances throughout the entire game.

When the game ends a report should be generated listing the player's name, age, total score, question number completed, and indicate if the player wins or loses the game.

Note, the game can only end if the player wins or loses the game or if the player enters an incorrect age.

THE END