Lab 3. Math Game Version 3

Here are the user stories for version 3:

- Allow users to enter multiple digits numbers such as 15.
- Give out higher range of random math questions instead of single digits.
- Give a responsive display when user taps the number buttons.

3.1. Demo Video

At the end of this lab, you need to achieve an outcome as shown by the screenshot in the demo video (available at QMPlus). This time there is an Enter button and the math question can be up to two digits, as shown in Figure 1. When the user tap a number button, it is displayed instantly.

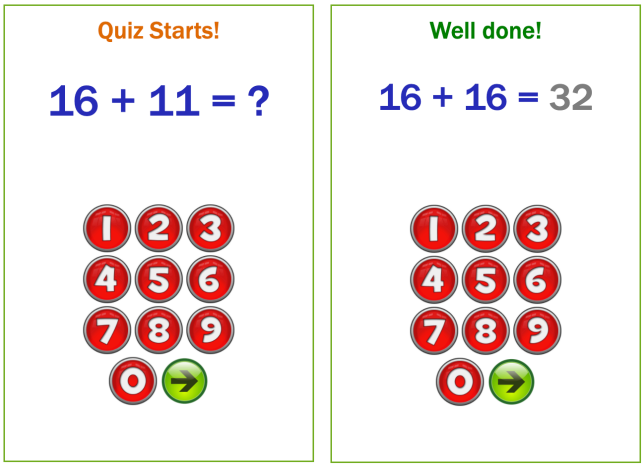

Figure 1. Three Possible Messages During Game Play

3.2. Design Thinking

Apart from the new Enter button which is done in the HTML and CSS areas. Most changes are made in the JS code.

3.3. Implementation

Follow these steps to make changes from the last version:

1. Add an Enter button, and choose a background image.
2. In the beginning of the JS code, declare a global variable: `userInput = "";`
3. Split `checkAnswer()` into two functions: `buttonPressed()` and `checkAnswer()`. The number buttons are associated with the `buttonPressed()` function where the button ID is retrieved and display the number on the `<div id="quiz">` box.
4. The Enter button should be associated with the `checkAnswer()` function. In this function, the code will check the answer against the number user entered and display the right or wrong message.

5. Do not forget to reset `userinput` variable after the answer is checked.

6. Test your web application to see if everything works so far.

7. Modify the random number generation code to extend the range to 1 – 20.

3.5. Troubleshooting

If you have done something tragic and cannot revert to the last working order, you can always count on GitHub and download a historical version.

3.6. Submission

Please submit your work on QMPlus/EBU6305/Assessment/**Lab 3**.

Please note – if you are not attending the lab in person, your work will NOT be assessed, and you will receive zero mark for your submission.

Make sure all related files (including images) are within one project folder. Zip the project folder as one file to submit on QMPlus.

The following marking criteria will be used. QMPlus marking rubrics can only use integer points system. The equivalence of points and marks are as shown below.

Attempt in the lab	0.5 mark	1 point
Two digits math	1 mark	2 points
Additional Enter Key	1 mark	2 points
Total	2.5 marks	5 points

3.7. Future Improvement (Optional)

Think of all the possibilities for user experience, e.g. what if user presses Enter directly without pressing any numbers? You may wish to consider this possibility and give an indicative message to user to prompt entry.