**This is the report of the Quiz Web project.**

First section is the task declaration. First of all, we divide all task in to two groups of learning and practice.

Practical task table shows the details.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Task name** | **Expected hours** | **Difficulty level** | **Real time to finish** |  |
| 1 | Install and connect GitHub to the project and do the first commit | 30 minutes | easy | 1:30 |  |
| 2 | Hello world with local storage | 1 hour | Medium | 1 hour |  |
| 3 | Store localStorage value in Array | 1 hour | Medium | 6 hours |  |
| 4 | Passing localStorage key-value between multiple pages | 3 hours | Hard | 5 hours |  |
| 5 | Using DOM to change elements in html File | 2 | Very Hrad | Failed |  |
| 6 | Progress Bar | 3 | Medium | 6 hours |  |
| 7 | Questions | 2 | Easy | 2 |  |
| 8 | Action Listener of DOM | 3 | Medium | Failed |  |
| 9 | Show Question one by one by using getElementByClassName | 4 | Hard | Failed |  |
|  |  | **19** |  | **28** | **total** |

Task number 3 has too much struggle in order to become finish. The main problem was because the writer has limited information about Object and Array in JavaScript. The main problem occurred when we define the initialization of array inside a function. Therefore, each time the trigger of function started a new instance of array create and replace the old one in localStorage. By cut out the array initialization outside the array, the problem solved.

**Task 5**) in this task we need to assure our access to html tags by getElementById, after trying more than 6 hours I found out that I have critical issue in understanding the concept of DOM. As the result, I put DOM in the learning task table.

**Task 8 and 9**) Changing CSS classes by JavaScript is possible by using getElemetByClassName, this method can replace questions one after another. However, after spending 10 hours of time. This task was impossible to perform.

**Learning task** are about the topics that we suppose to learn before or during the project.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Task name | Expected hours | Difficulty level | Real time to finish |  |
| Learn about “localStorage” in JavaScript | 30 minutes | easy | 1:30 |  |
| Learn about the behavior of Object in JavaScript | 2 hours | hard | 4 hours |  |
| DOM | 6 hours | hard | 8 hours |  |
| GetElementByClassName | 6 hours | Hard | 8 hours |  |
|  | **14:30** |  | **21:30** | **total** |

**Learning**

In this section, we are going to declare we have learned during this project.

localStorage

1. localStorage is a set of value that saved inside the user’s browser. And its differences with session is, local storage never get expired. It can be removed by the user inside the browser 🡪 application tab. And programmer can delete it inside the code.
2. localStorage can only keep the String type.
3. To retrieve value from an object inside localStorage you have to use JSON. JSON is JavaScript native language.

**Algorithm and Function Mapping**

First step is to create question as object in JavaScript file. Question object have attributes of, question, possible answers, correct answer, presentation type (radio button, dropdown, and checkbox).

Second step is to create localStorage and create item by giving the key of user name and the value is the user input.

Third step is to create an array of username. This array is very important in final page when we want to show all result of all users. Since the key and value in localStorage are string so we use JSON, stringfy() method to store key value pairs in array.

Fourth step is to recall this array in another page or in the first page of questions, which is html page.

Fifth step is to create progress bar. We code the progress bar by using CSS, HTML, and JavaScript.

Sixth step is to play with CSS class to show and hide questions one after each other. For each question answered by user, we check the answer with correct answer store in question object. If the answer is correct, we add one value in localStorage key called userMark (the initial value of this key is set 0 by default). This user Mark will be use at final stage to show the result of user. If the user answer 12 out of 20 question, his mark would be 12.

Seventh and final step is to show the result. userMark will be shown in front of each user’s name. As it mentioned above, there are two array in local storage. The first index of userMark array will print in document and the first index of user will place in front. In order to prevent reordering this list. We set a function. This function will be trigger if the user do not finish the test and want to reload the html page. In this case, the function will delete the result and the name of this user from the list in both two arrays in localStorage.

**Total amount of time**

Refer to two table above; 33.5 hour is expected time for finishing the tasks. In addition, the real time spender for all tasks is equal to 49.5 hours. As you may understand the amount of time is exceed the deadline.

**What need to improve?**

The DOM is the main challenge of this project. The different function of document object should be deeply be reviewed.

Secondly, working with multiple js file is still foggy for the writer. It is required that user work with different situation of JavaScript file location (inline, head, end of body, external, and multiple external).