Assignment 3 Guidlines

1) Objectives of this Assignment
    a) Learn ES6+ import and modules
    b) Learn Arrow function implementation
    c) DOM implementation and validation
    d) JQuery implementation\

2) Learn and Type this HTML script
    a) Notice the comments in the code and try experimenting the line of code with comments

```html
<body>
    <header>
        <h1>Simple Arithmetic Application</h1>
    </header>

    <section>
        <div class="row1">
            <input type="number" id="num1" class="num_disp">
            <input type="text" id="symbol" class="num_disp" disabled> <!--user can't input-->
            <input type="number" id="num2" class="num_disp">
        </div>
        <div class="row2">
            <button id="btn_add" class="btn">Add</button>
            <button id="btn_sub" class="btn">Subtract</button>
            <button id="btn_mul" class="btn">Multiply</button>
            <button id="btn_div" class="btn">Divide</button>
        </div>
        <div class="row3">
            <button id="btn_res" class="btn">Show Result</button>
            <input type="text" id="result" class="num_disp" disabled> <!--user can't input-->
        </div>
    </section>

    <script src="scripts.js" type="module"></script>
    <!--Note the script here, type="module" must be included if ES6+ modules are implemented in
        scripts.js-->
</body>
```

3) Learn and type this CSS

```css
/*  In this assignment flexbox must be used
    Please study and implement this CSS in detail
    This CSS is prepared for exam point of view i.e short and effective
*/
section{
    display: flex;
    flex-direction: column;
    gap: 2rem;
    width: 50%;
}

.btn{
    padding: 1rem 2rem;
    font-size: 1.5rem;
    flex-grow: 1.0; /*remove this and notice the difference*/
}

.num_disp{
    display: flex;
    padding: 1rem;  /*Refer CSS box model*/
    text-align: center; /*remove this and notice the difference*/
    font-size: 1.5rem;
    min-width: 0;  /*remove this and notice the difference*/
}

.row1, .row2, .row3{
    display: flex;
    gap: 1rem;
}
```

4) JavaScript Implementation
   a. Basic DOM selection by ID

```
const num1 = document.getElementById('num1')
const num2 = document.getElementById('num2')
const operator = document.getElementById('symbol')

const add = document.getElementById('btn_add')
```

   b. Basic DOM UI update

```
add.addEventListener('click',function(){
    operator.value = '+'
})
```

   c. Do the same for sub, mul, div
   d. Basic DOM validation

```
result.addEventListener('click',function(){
    let x = parseInt(num1.value) //converted to Integer, because by default stored as string
    let y = parseInt(num2.value) //Try removing parseInt and see the difference

    if(!x && x!==0)
    {
        alert("Plz enter num1")
        return
    }
    if(!y && y!==0)  //if(!y) won't work alone because if user enters 0 which is a valid number,
    {                // is also read as empty,
        alert("Plz enter num2")
        return
    }
    if(!operator.value)
    {
        alert("Please select operation")
        return
    }
```

   e. ES6+ Import and Modules

```
import {add as funcAdd,sub as funcSub,mul as funcMul,div as funcDiv} from './calculator.js'
/*implementation of modules, here named export is used
  add, sub ,mul, div is used for DOM selection as well and used for named export as well
  This causes conflict so to reolve this For eg: "add as funcAdd" is used
*/
```

   f. Create a separate file named calculator.js and implement this code

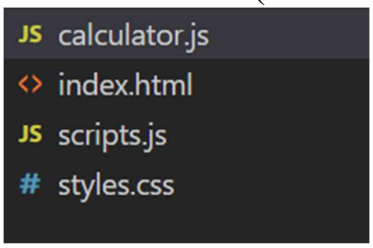
```
//implementation of arrow function is compulsory in this assignment

export let add = (x,y) => x+y   //no curly braces required because just one statement included

export let sub = (x,y) => x-y   //with no curly braces the statement itself is returned
                                //by default
export let mul = (x,y) => x*y

export let div = (x,y) => { //curly braces required because more than one statements is included
    if(y === 0)
        return "Can't divide by 0"
    else
        return x/y
}
```

g. Folder structure (Here calculator.js is the module)



h. Algorithm
   - Notice carefully, funcAdd was imported in step {e.} above

```
switch(operator.value)
{
    case '+': display_res.value = funcAdd(x,y)
        break;
```

Note: scripts.js must be strictly implemented in JQuery. Traditional DOM won't be accepted

Note : Use of ChatGPT or other LLM models is only permitted to debug and check for errors in this assignment, if use of ChatGPT or other LLM model to vibe code and do the entire assignment is found then, assignment of that particular student will be cancelled.

Note: Students are required to add some minor custom CSS of their own choice in this assignment compulsorily. For eg: Background color, font-family etc