Lab 4 – Bootstrap and JavaScript

Purpose

- Implement a Web Design Template (Header, Footer, and Menu) using **Bootstrap 4**
- Implement a web page using **JavaScript**
- Upload your website to a Web server

Due Date

- This lab must be handed in:
  Friday Sept 29, 2023 – before midnight

Assessment

- This Lab is worth 2% of your total course mark.

Assigned Readings

- **Lecture Slides** posted on Brightspace:
  - Module 1 -> Part 4
  - Module 2

- The following chapters of **Fundamentals of Web Development** will be useful in completing this exercise:
  - Chapter 5
  - Chapter 6

Lab Supplies

To complete this lab you will require the following lab supplies:

- Textbook: **Fundamentals of Web Development**
- Code Samples (**BootstrapSamplePage.zip**)
- Notepad++ (or other text editor, or IDE)

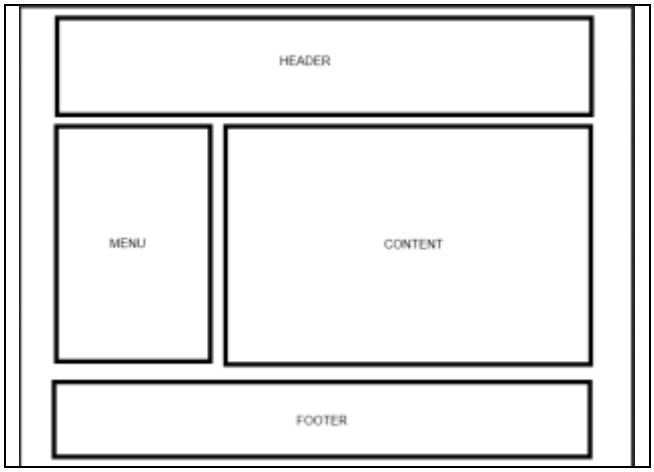
Summary of Tasks

1. Implement a Web Design Template using **Bootstrap 4.**
2. Create a web page named '***Prime.html***' using JavaScript.
3. Upload your website to a webserver
4. View your webpage using a web browser
5. Submit Lab Link on Brightspace

Task 1

Before getting started with the following tasks review the 'Common Look and Feel' examples provided on Brightspace (under: Course Content → Extra Materials). Using the knowledge gained in these examples, create a 'Common Look and Feel' to be used on every page of your website.

You must implement the following Design Template using **Bootstrap 4**:



The web design template must have the following elements: Header, Footer, and Menu.

- Header
  - Program Name and Course Name
- Menu
  - Links to Lab 2, Lab 3 and Lab 4.
- Footer
  - Student Number, First Name, Last Name, Email Address

Task 2

Create a web page named '***Prime.html***' that implements the 'Design Template' specified in Task 1. The title of the web page will be '***Prime Generator***'.

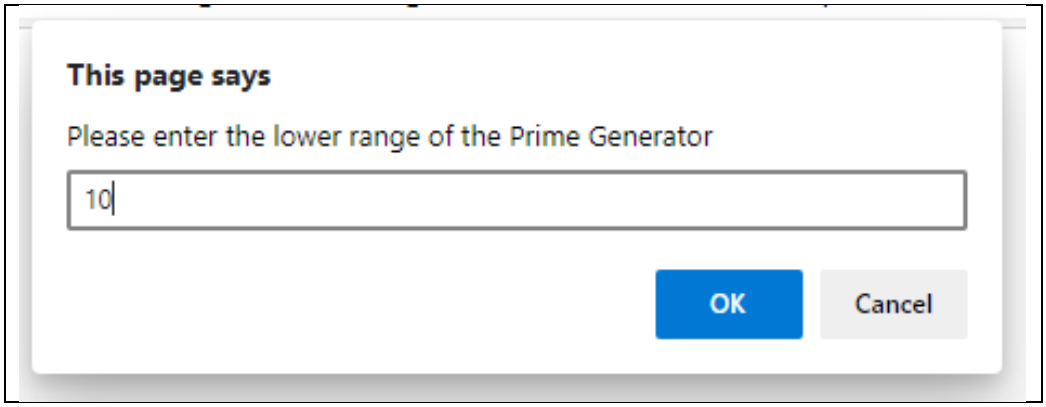
In Prime.html, you need to write a JavaScript function that will generate all prime numbers in between a range (lower and upper) accepted from the user prompt.

For example, if lower range = 10 and upper range = 50, you have to display all prime numbers in between 10 and 50.

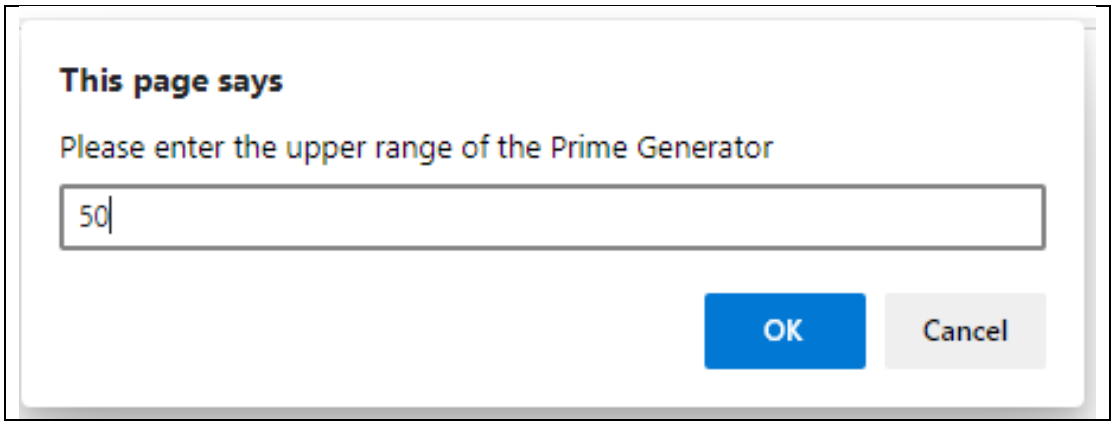
You must implement it using the **Logical and Conditional statements** of JavaScript.

Here is an example of the sample output for Prime.html:

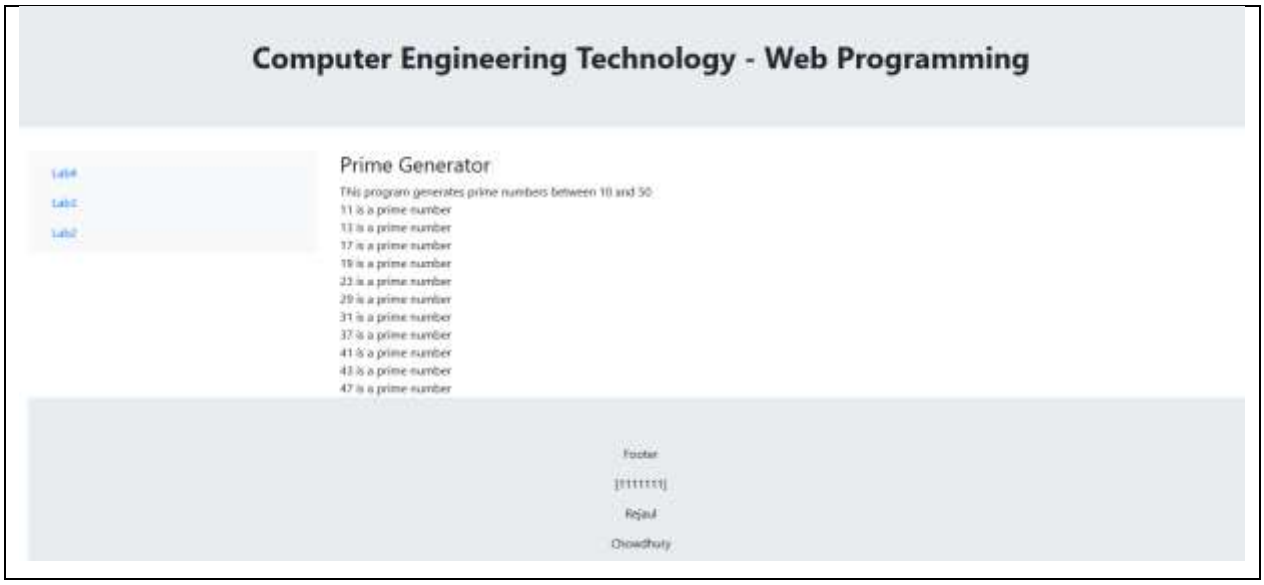
Step 1- Accept Input (lower range) from the user using 'Prompt'



Step 2- Accept Input (upper range) from the user using 'Prompt'

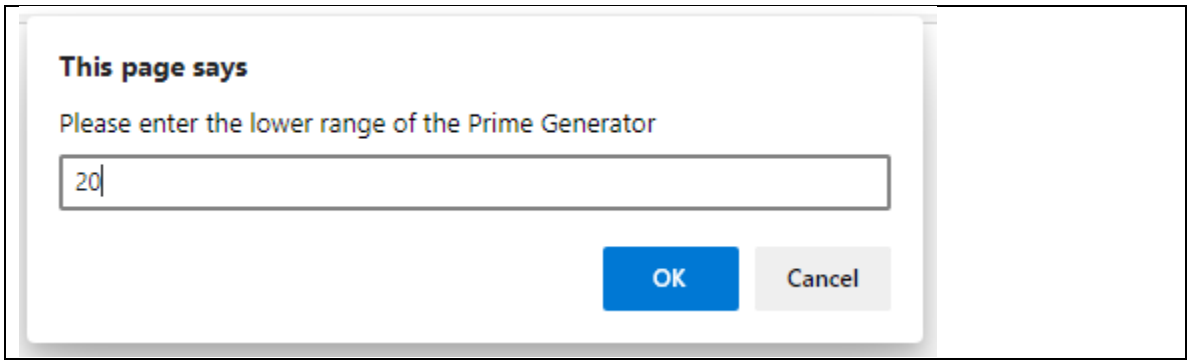


Step 3- Display all prime numbers in between 10 and 50

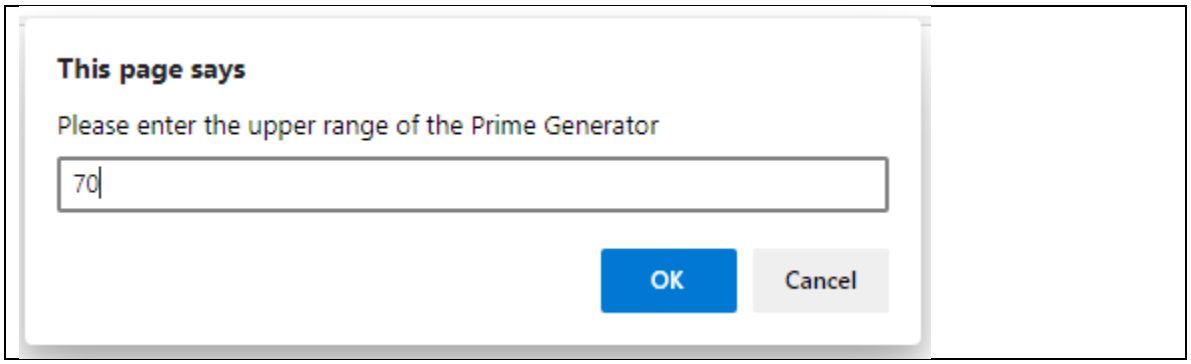


Here is another example of the sample output for Prime.html:

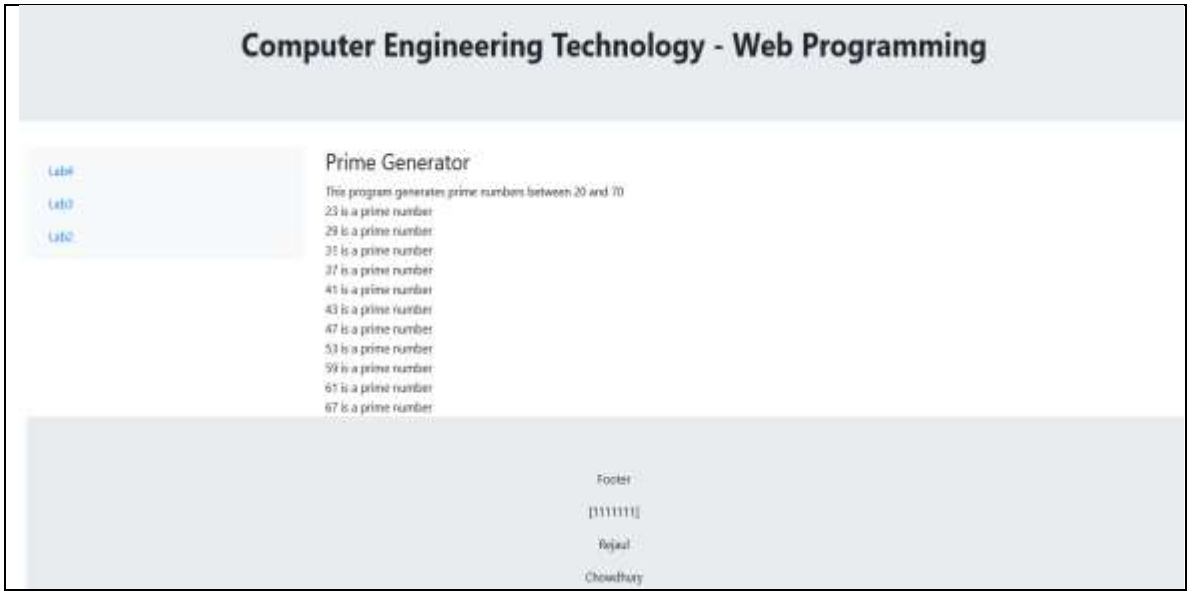
Step 1- Accept Input (lower range) from the user using 'Prompt'



Step 2- Accept Input (upper range) from the user using 'Prompt'



Step 3- Display all prime numbers in between 20 and 70



Hints for Prime.php:

Lower and upper range values MUST be accepted from the user prompt. You can use any standard algorithm for determining a prime number. An efficient algorithm is as follows:

```
START

prime = true

index  = 2

WHILE ((index * index) <= num) AND prime EQUAL true

    IF (num MOD index) = 0

        prime  = false

    ENDIF

    index  = index + 1

ENDWHILE

IF prime  = true

 then num is a prime number

ENDIF

END
```

Task 3

Create Lab 4 submission folder '**Lab4**' and copy **prime.html** into this folder**.**

Task 4

Upload your website for Lab 4 into a Web Hosting Server by uploading '**Lab4**' folder inside the 'public_html' directory of 'SiteGround' Web Hosting domain using DashBoard.

The 'File Upload' instruction is posted on Brightspace (**Course Contents -> Module 1 -> Part 2 -> SiteGround_FileUpload_Instruction.docx**).

Task 5

View your website for Lab 4 using a web browser. Open a web browser and navigate to the following web address:

http://your_web-hosting_domain_name/Lab4/<filename>

For example, the sample URL for Lab 4 on an arbitrary web hosting domain is:

rejaulc.sgedu.site/Lab4/prime.html

where '*rejaulc.sgedu.site*' is the name of an arbitrary web hosting domain, '*Lab4*' is the submission folder for Lab 4, '*prime.html*' contains the source code for Lab 4.

Task 6

Once you have confirmed that your webpage is available online, you are ready to hand in your lab.

Create a word document (Lab4.doc) in which write the following Information:

- Student Number
- First Name
- Last Name
- The URL, or hyperlink, for Lab 4

To hand in your lab go to Brightspace and navigate to Course Content → Labs and click on 'Lab 4 – Bootstrap and JavaScript' link.

Upload the word document (**Lab4.doc**) on Brightspace.

IMPORTANT NOTE:
If the URL, or hyperlink, does not direct the professor to the lab you will receive a ZERO for the lab assignment.