LAB ASSIGNMENT NO – 04

Aim: Write a program in Javascript to study conditional Statements, Loops and Functions. Write a Javascript code to change background color of web page automatically after every 5 seconds.

Theory: JavaScript (Js) is a light-weight object-oriented programming language which is used by several websites for scripting the webpages. It is an interpreted, full-fledged programming language that enables dynamic interactivity on websites when applied to an HTML document.

- Conditional Statements - Conditional statements are used to perform different actions based on different conditions.
  1. If - The if statement is to specify a block of JavaScript code to be executed if a condition is true.
     ```
     if (condition) {
       // block of code to be executed if the condition is true
     }
     ```
  2. Else - The else statement is to specify a block of code to be executed if the condition is false.
     ```
     if (condition) {
       // block of code to be executed if the condition is true
     } else {
       // block of code to be executed if the condition is false
     }
     ```
  3. Else if - The else if statement is to specify a new condition if the first condition is false.
     ```
     if (condition1) {
       // block of code to be executed if condition1 is true
     } else if (condition2) {
       // block of code to be executed if the condition1 is false and condition2 is true
     } else {
       // block of code to be executed if the condition1 is false and condition2 is false
     }
     ```

- Loops - Loops can execute a block of code a number of times. Loops are handy, if you want to run the same code over and over again, each time with a different value.

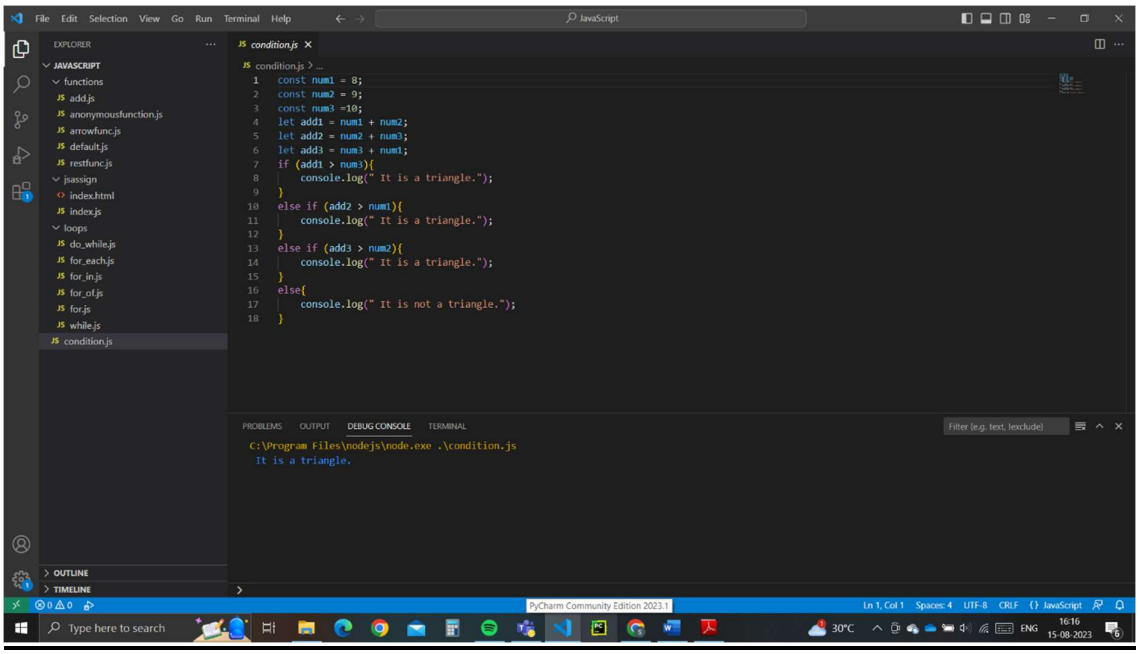
1. for - Executes the loop block for a specified number of times under a termination condition.
   Syntax - for(Initialization; Terminate Condition; Increment/Decrement)
2. for…in - Executes the loop block through an object's properties.
   Syntax - for(variable_name in object) {
   . . .
   }
3. for…of - Executes the loop block to iterates the iterable instead of object literals.
   Syntax - for(variable_name of object) {
   . . .
   }
4. for…Each – It is a method that calls a function for each element in an array.
5. while - Executes the loop block for a specified number of times under a termination condition.
   Syntax - while (terminator condition) {
   . . .
   }
6. do…while - Similar to the while loop but executes the loop first and evaluates.
   Syntax - do {
   . . .
   }
   while (terminator condition);

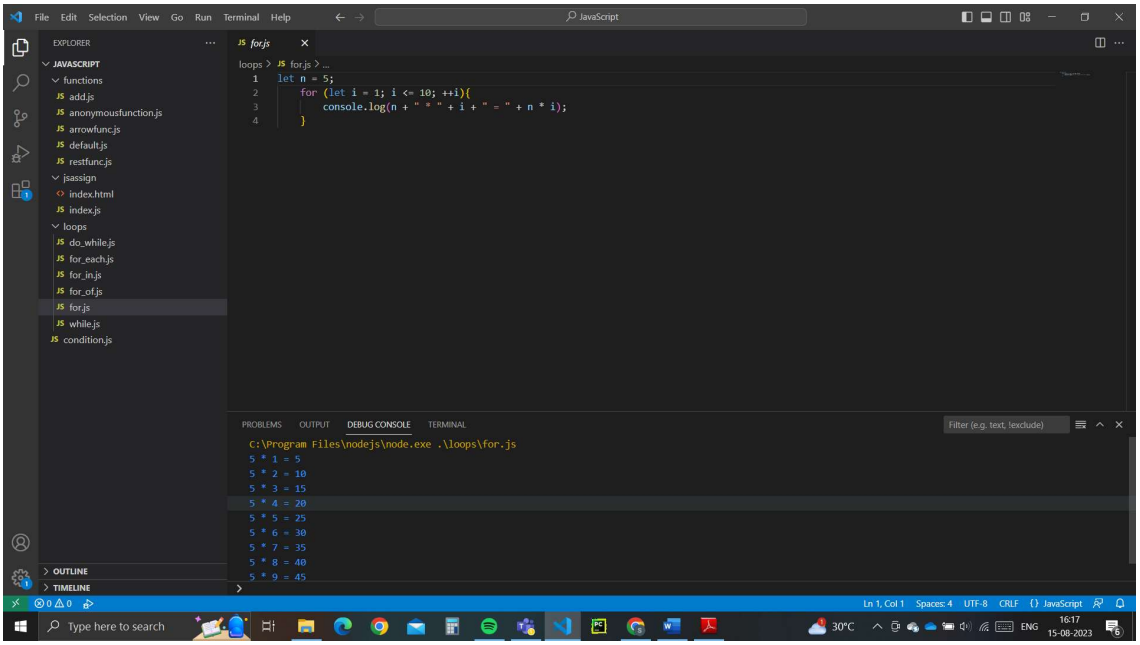
- Functions - A JavaScript function is a block of code designed to perform a particular task. A JavaScript function is executed when "something" invokes it (calls it).
  1. Returning - Functions may also return the value along with control, back to the caller. Such functions are called as returning functions. A returning function must end with a return statement.
  2. Parametrized - It is also possible to provide expressions as default values. Parameters are a mechanism to pass values to functions. Parameters form a part of the function's signature. The parameter values are passed to the function during its invocation.
     Syntax : function sum(x = y, y = 1) {
     console.log(x + y);
     }

3. Rest - Rest parameters are similar to variable arguments in Java. Rest parameters doesn't restrict the number of values that you can pass to a function. To declare a rest parameter, the parameter name is prefixed with three periods, known as the spread operator.
   Syntax : let func = function(...args) {
   console.log(args);
   }
4. Anonymous Function - Functions that are not bound to an identifier (function name) are called as anonymous functions. These functions are dynamically declared at runtime, functions can accept inputs and return outputs, just as standard functions do.
   Syntax : var res = function([arguments]) { ... }var f = function(){ return "hello"} console.log(f())
5. Lambda Function/ Arrow Function - Lambda functions are a concise mechanism to represent anonymous functions. These functions are also called as Arrow functions. There are 3 parts to a Lambda function −
   • Parameters− A function may optionally have parameters.
   • The fat arrow notation/lambda notation(=>): It is also called as the goes to operator.
   • Statements− Represents the function's instruction set.
   Syntax : ([param1, parma2,…param n])=>statement;

Conclusion : The experiment on JavaScript loops, conditions, and functions provided valuable insights into the fundamental building blocks of programming. Through systematic exploration and practical implementation, we gained a deeper understanding of how loops enable efficient repetitive tasks, how conditions facilitate decision-making processes, and how functions enhance code modularity and reusability.

Code and Output :





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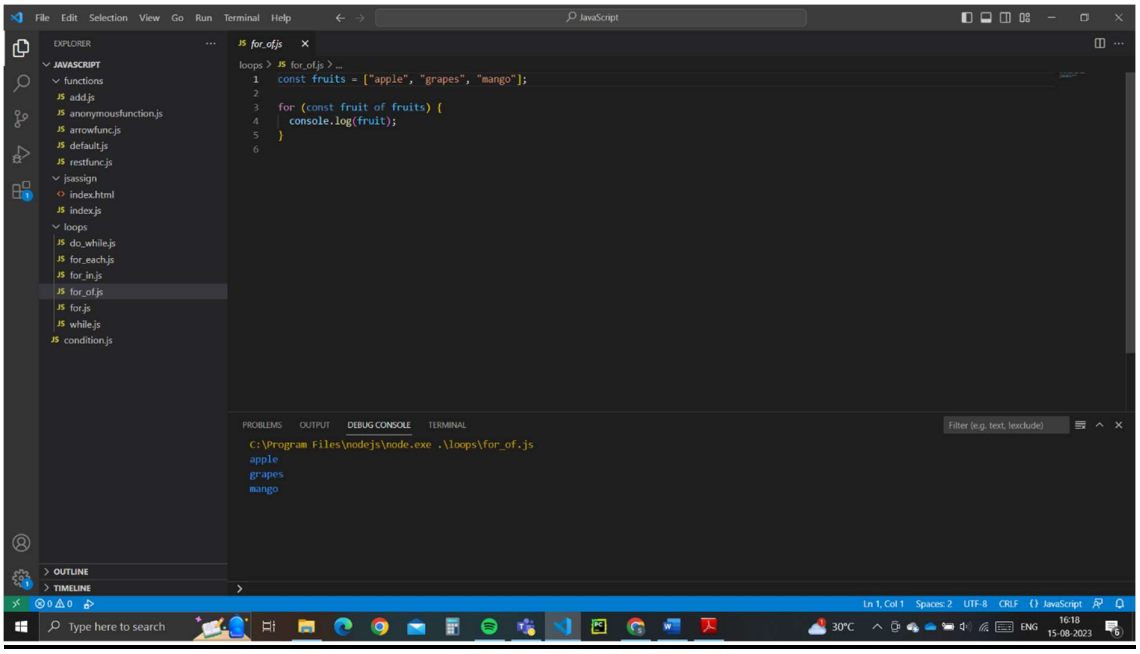

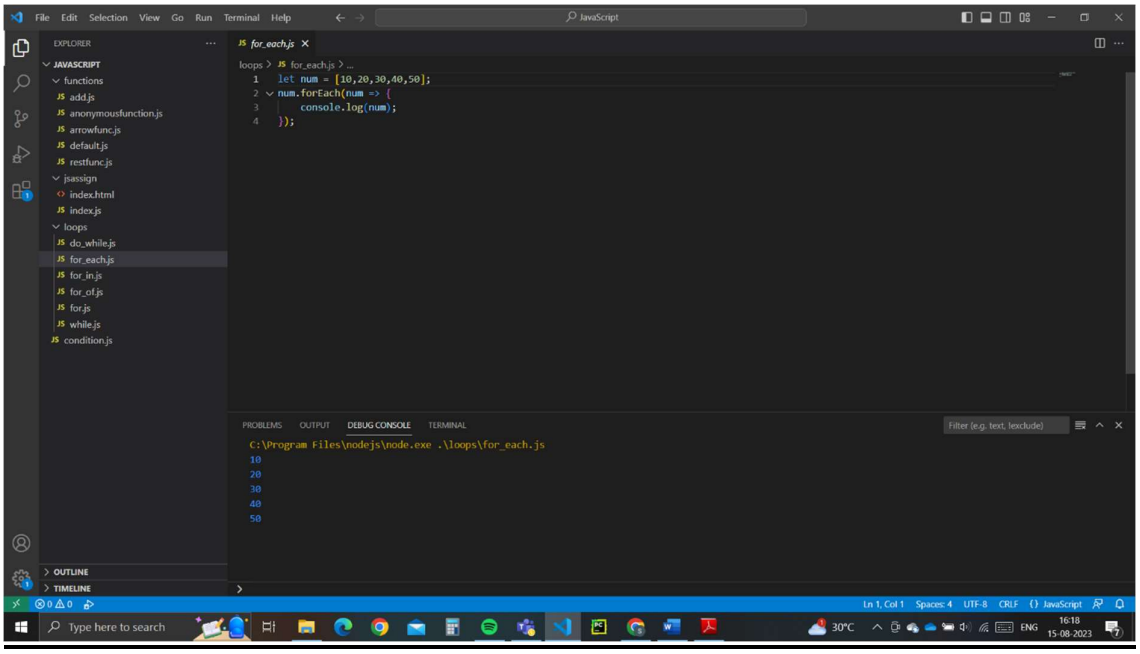

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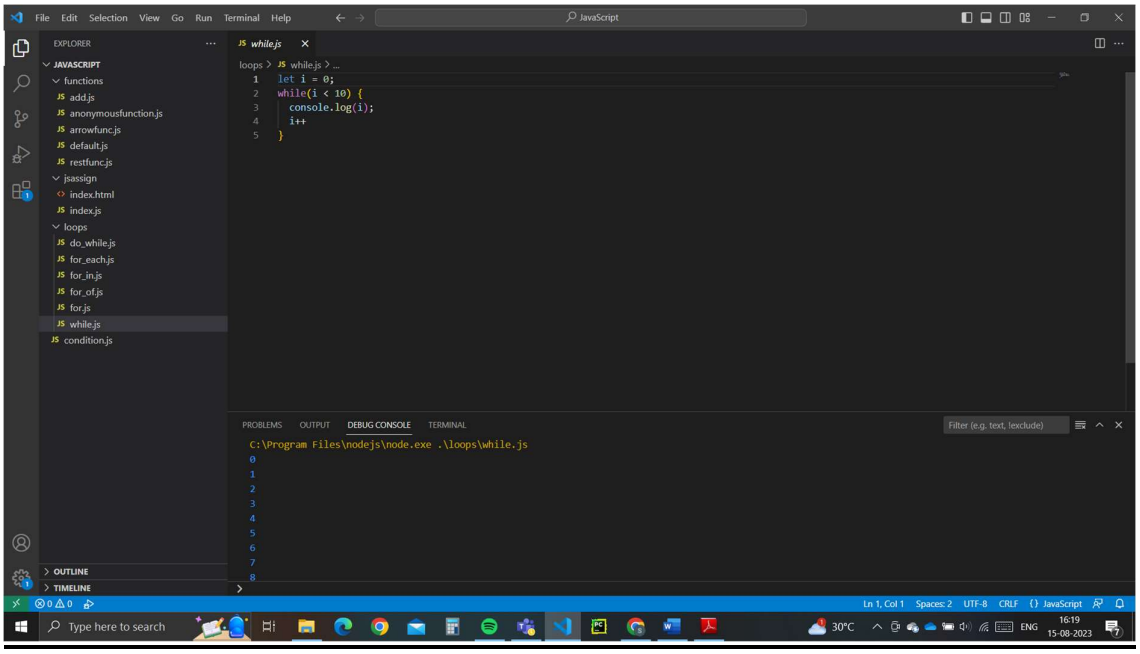

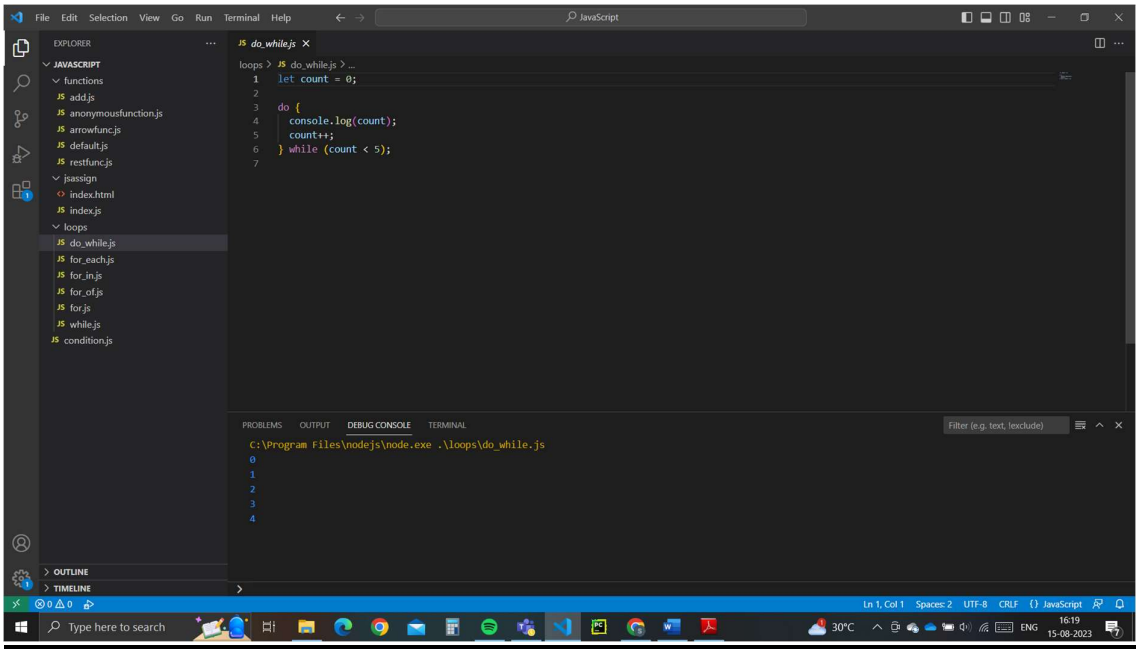

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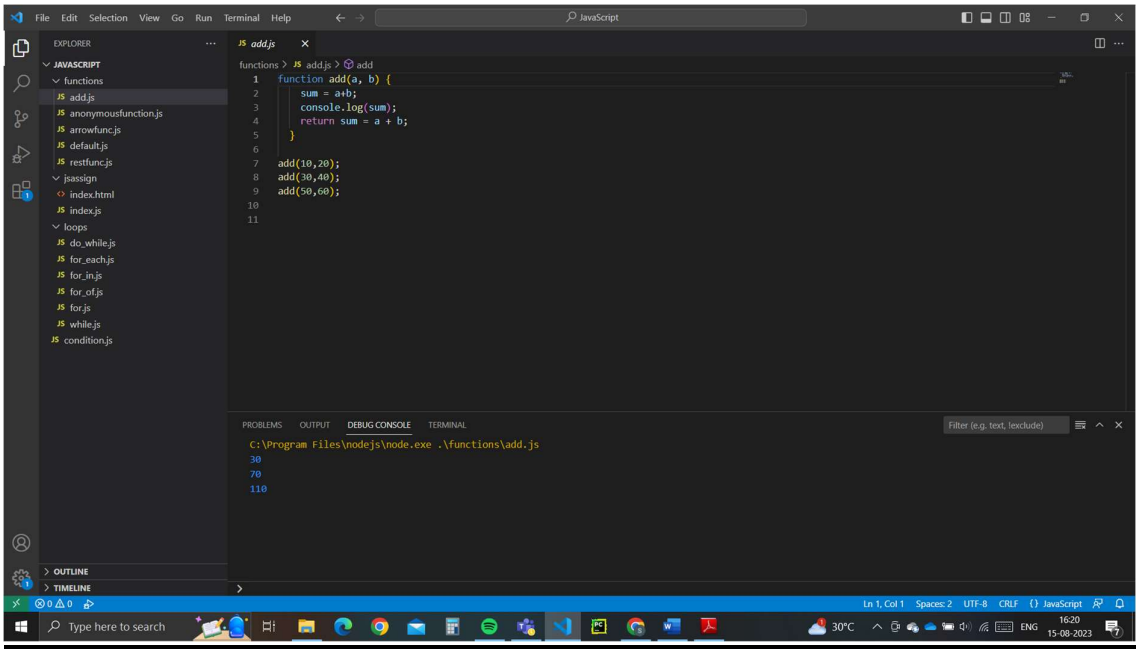

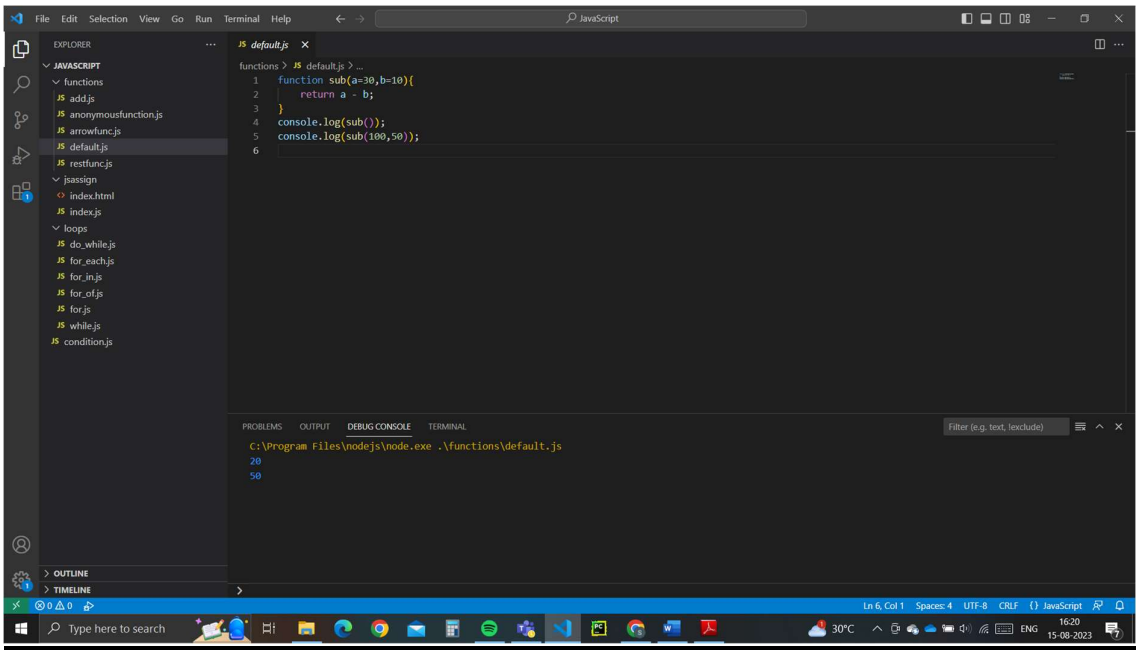

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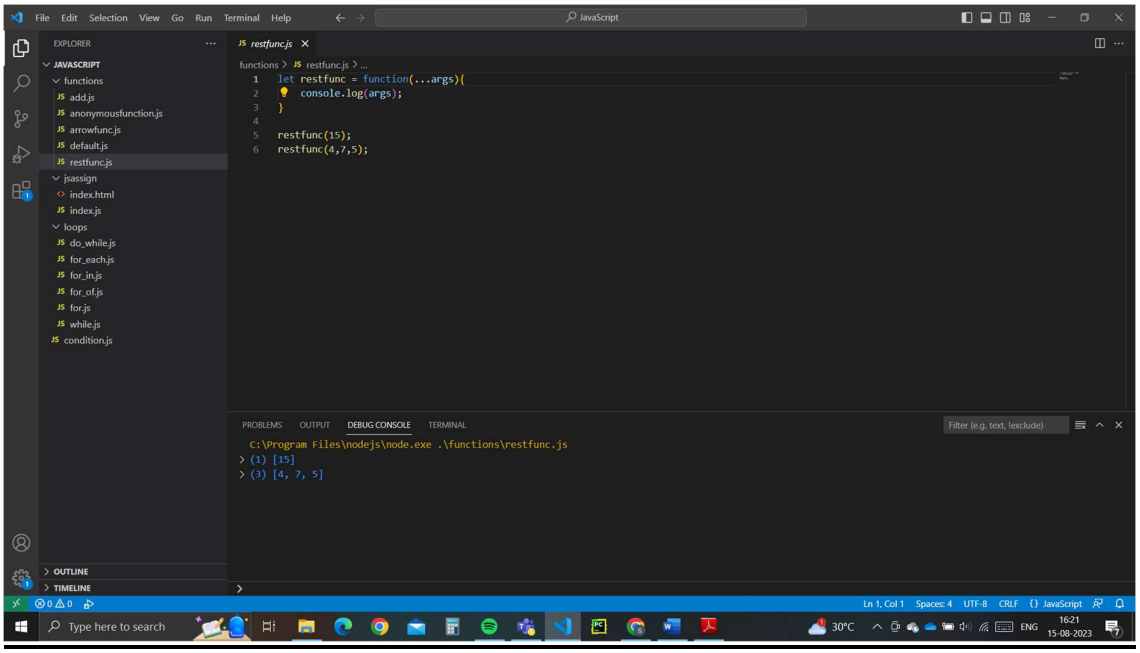
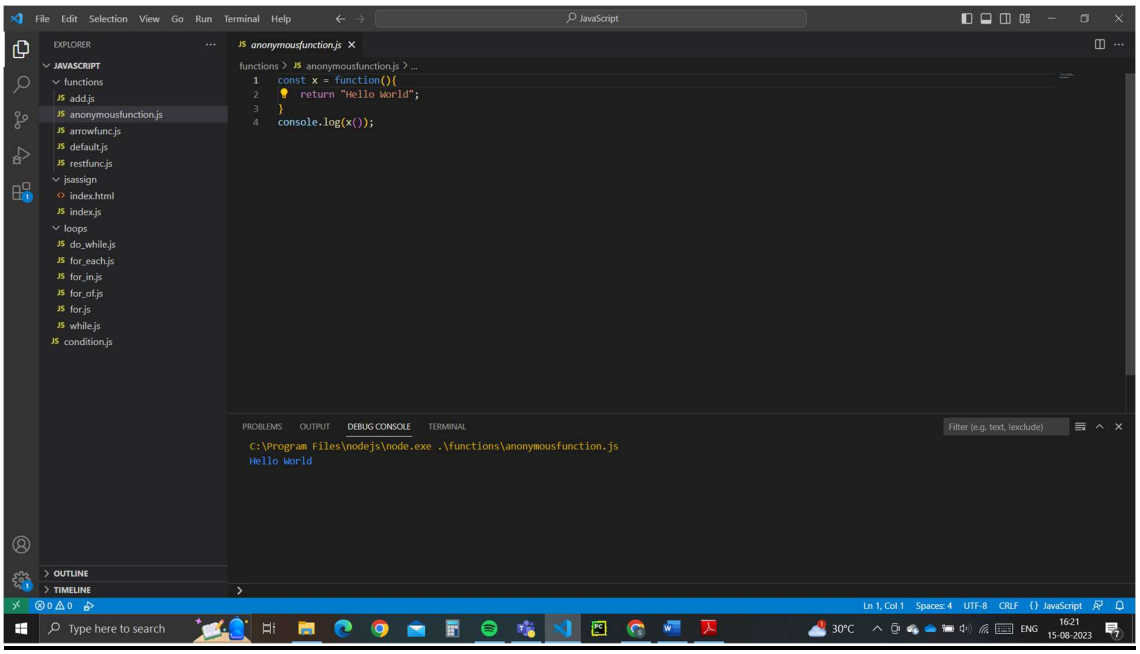
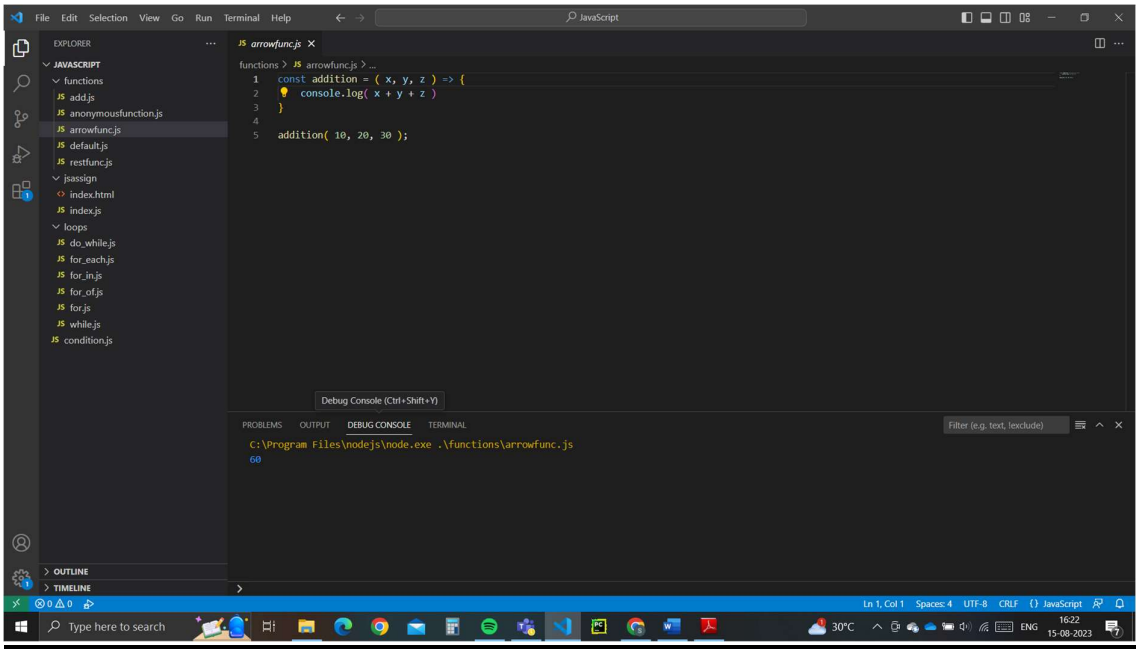
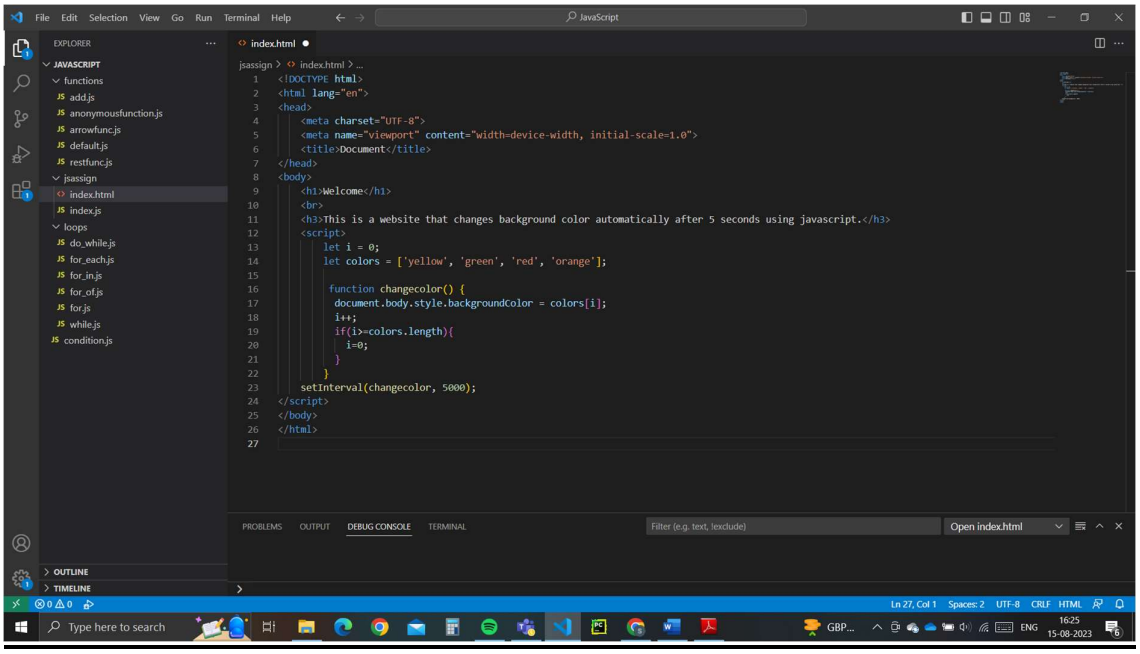






Assignment – Change color of web page after 5 seconds.



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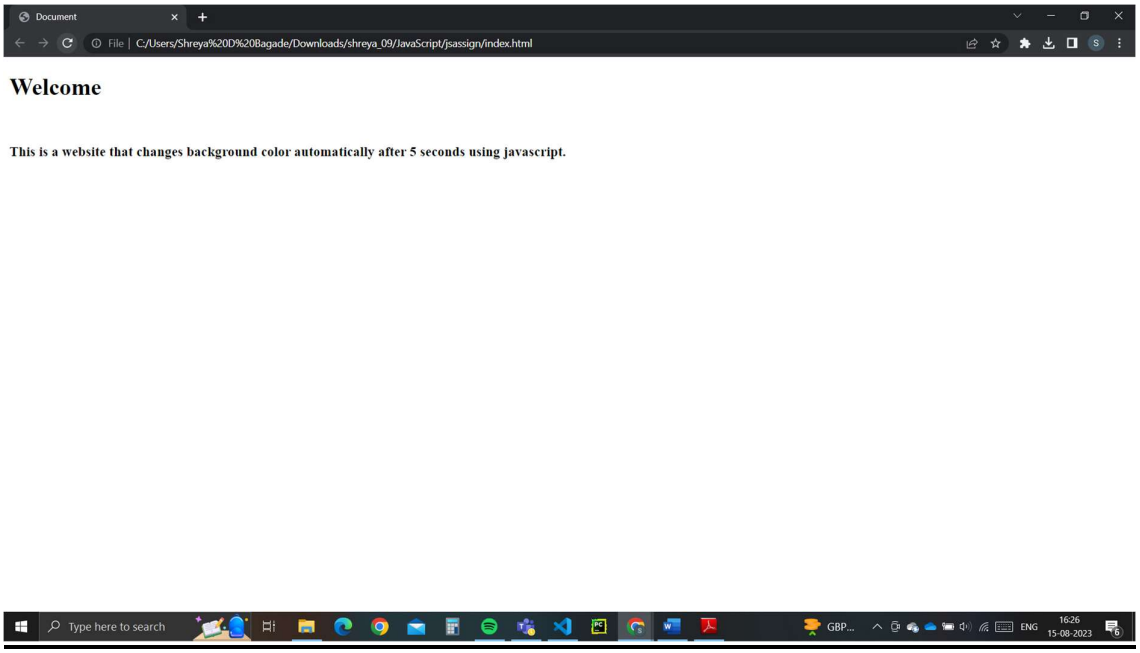

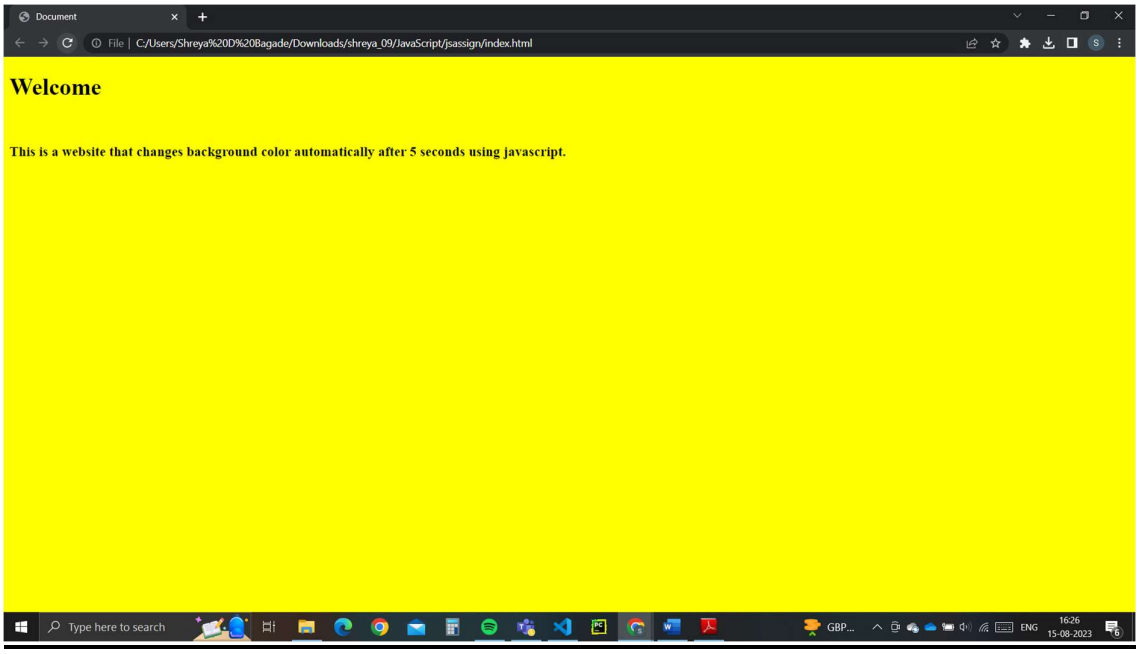

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