Module 6) JAVASCRIPT BASIC & DOM (Basic logic Question)

Q.1 What is JavaScript? How to use it?

- Javascript is a scripting language. It was designed to add interactivity to HTML Pages.
- Javascript is an interpreted language that means the script executes without preliminary compilation.
- It's code directly embedded to the HTML Page. It works for all major browsers.
- Javascript is a client side, interpreted, Object Oriented, high level scripting language which cannot run stand alone.
- It was created By Netscape in 1995, evolved from Netscape's Live Script.
- Javascript works with HTML and CSS (Cascading Style Sheets).
- You can attach javascript file to html file using two methods:
  Internal and external file.

- **Internal javascript**
- **It can be written in head tag or in body tag both ways.**

```
<html>
<head>
<title></title>
<script src=”path”>
– write your code here –
 </script>
</head>
<body></body>
</html>
```

```
<html>
<head>
<title></title>
</head>
<body>
<script src=”path”>
– write your code here –
 </script>
</body>
</html>
```

- **External file**
- **Make an external js file and attach it in html.**

```
<html>
<head>
<title></title>
<script src=”script.js”></script>
```

```
</head>
<body></body>
</html>
```

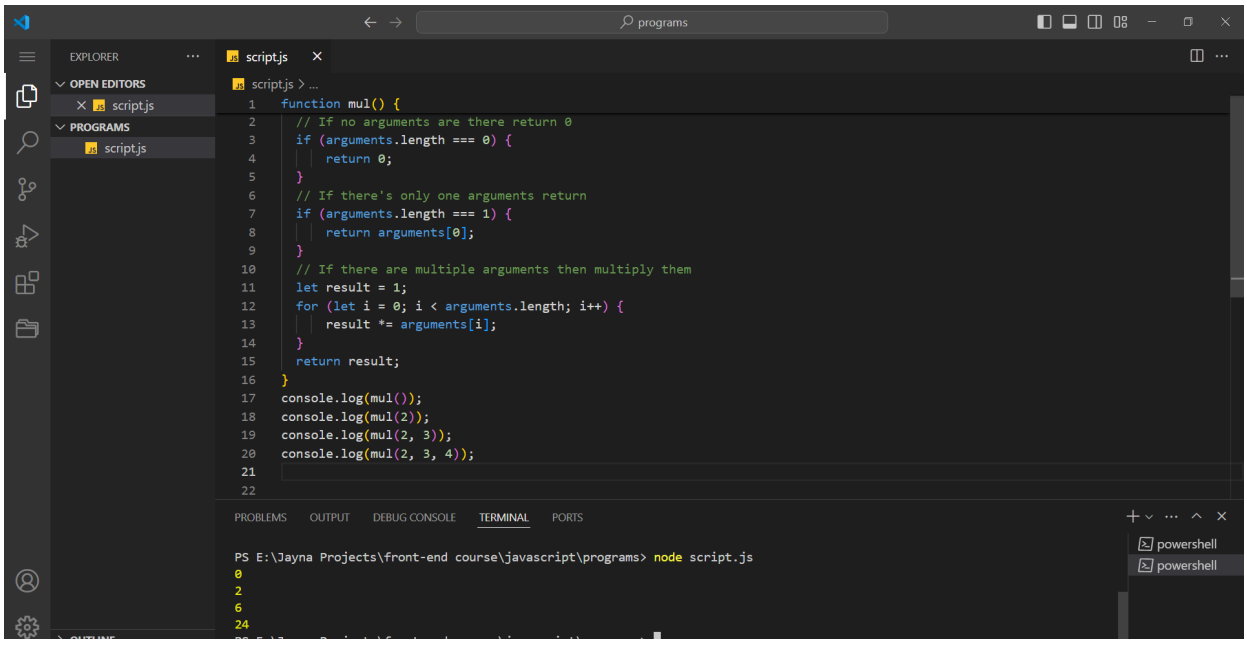
Q.2 How many types of Variables in JavaScript?

- Variables are containers for storing data.
- Javascript variables can be define in 4 ways:
  Using **const** = use const if the value should not be changed.
  Using **var** = Only use var if you MUST support old browsers.
  Using **let** = Only use let if you can't use const.
- The var keyword was used in all JavaScript code from 1995 to 2015.
- The let and const keywords were added to JavaScript in 2015.
- The var keyword should only be used in code written for older browsers.

Q.3 Define a Data Types in js?

- In programming, data types are an important concept.
- To be able to operate on variables, it is important to know something about the type.
- JavaScript has 8 Data Types:
- **String,Number,Bigint,Boolean,Undefined,Null,Symbol,Object**.

Q.4 Write a mul Function Which will Work Properly When invoked With Following Syntax.

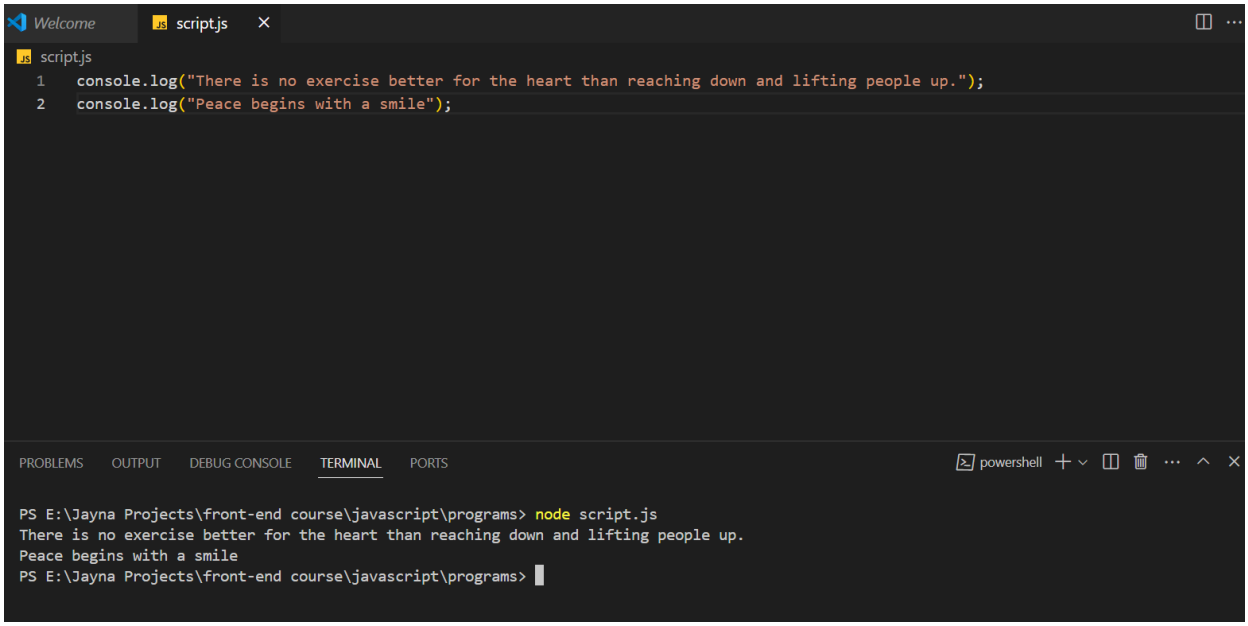


Q.5 What is the difference between undefined and undeclared in JavaScript?

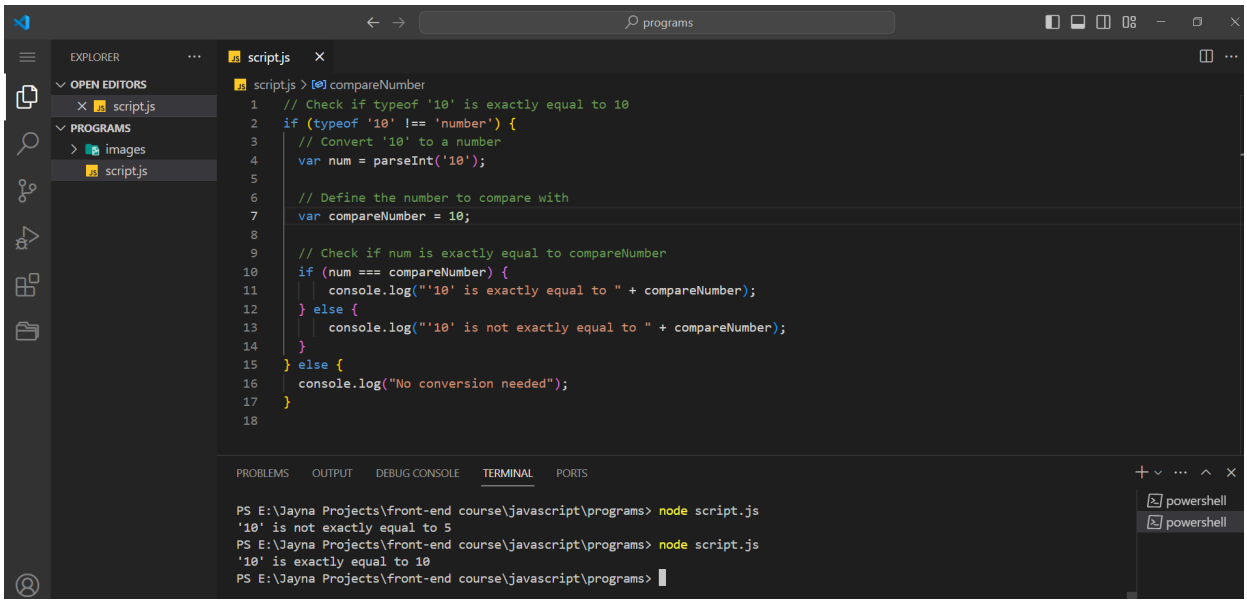
- **Undefined**: It occurs when a variable has been declared but has not been assigned any value. Undefined is not a keyword.

- **Undeclared**: It occurs when we try to access any variable that is not initialized or declared earlier using the var or const keyword.

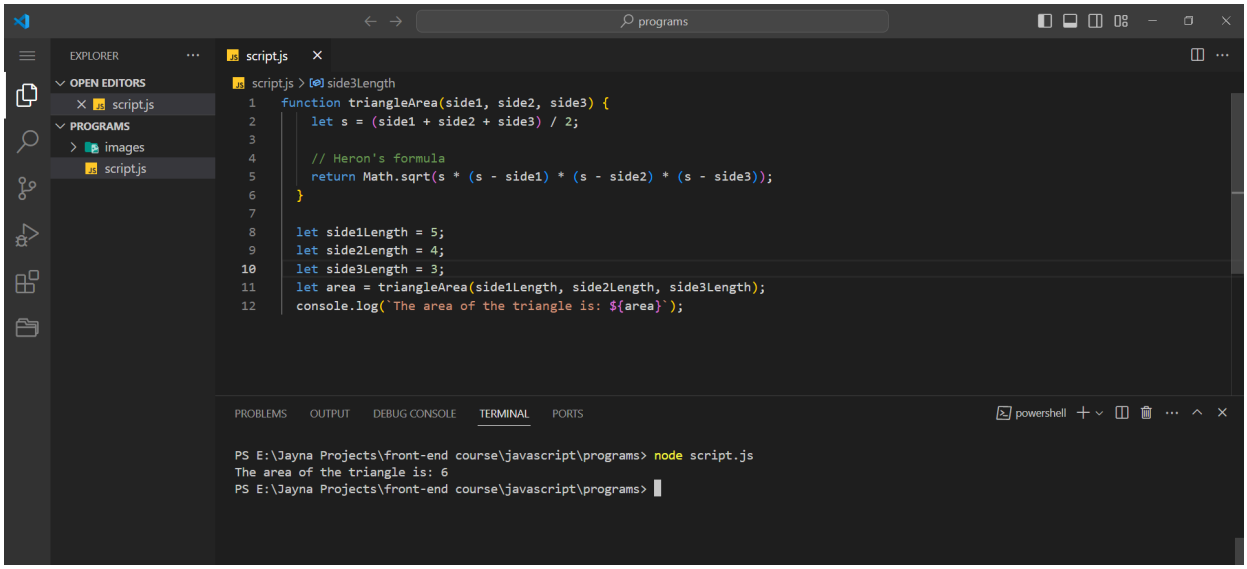
Q.6 Using console.log() print out the following statement: The quote 'There is no exercise better for the heart than reaching down and lifting people up.' by John Holmes teaches us to help one another. Using console.log() print out the following quote by Mother Teresa:



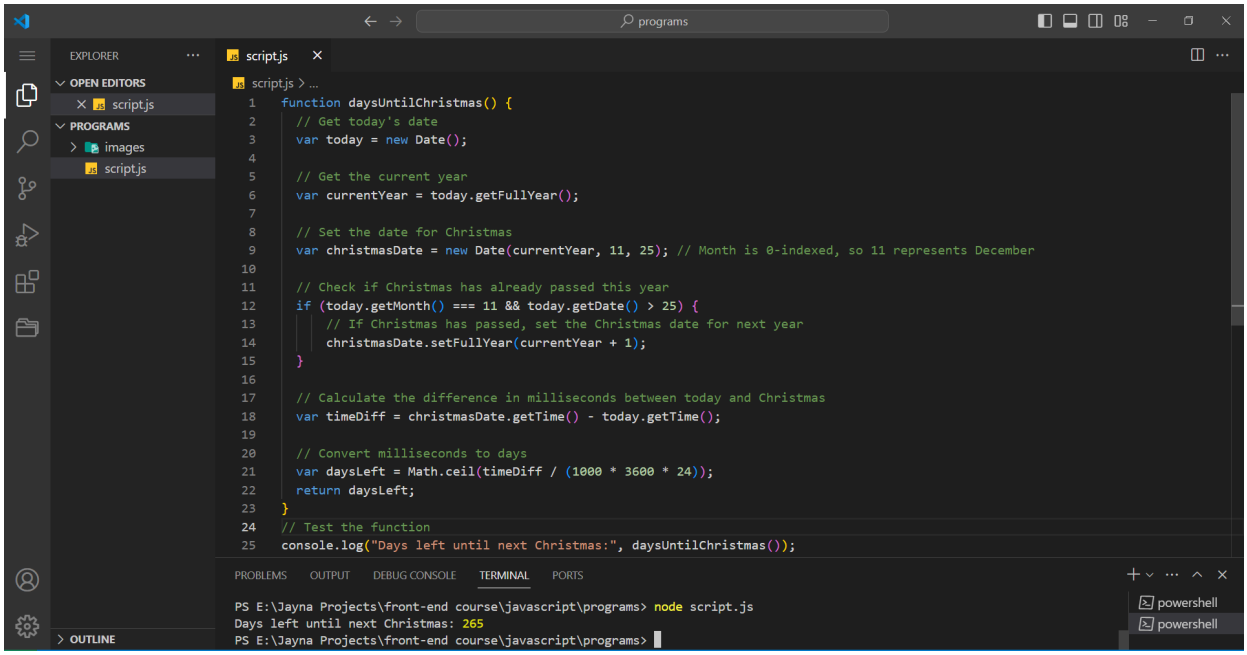
Q.7 Check if typeof '10' is exactly equal to 10. If not make it exactly equal?



Q.8 Write a JavaScript Program to find the area of a triangle?



Q.9 Write a JavaScript program to calculate days left until next Christmas?



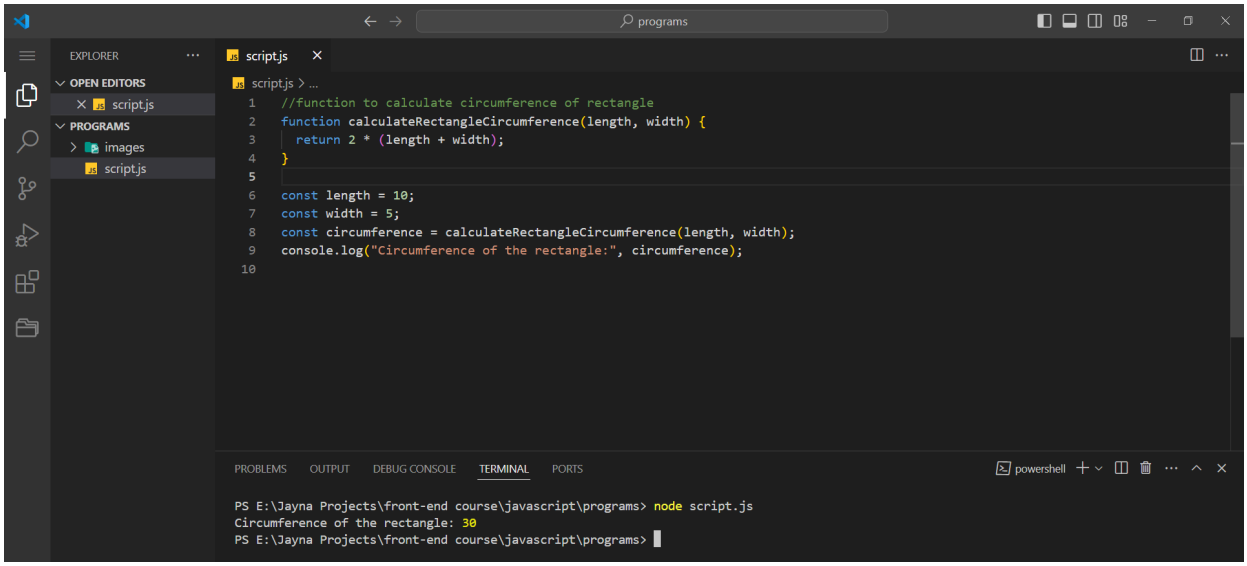
Q.10 What is a Condition Statement?

- Conditional statement is very often used when you write code and you want to perform different actions for different decisions.
- In JavaScript these are the following conditional statements:

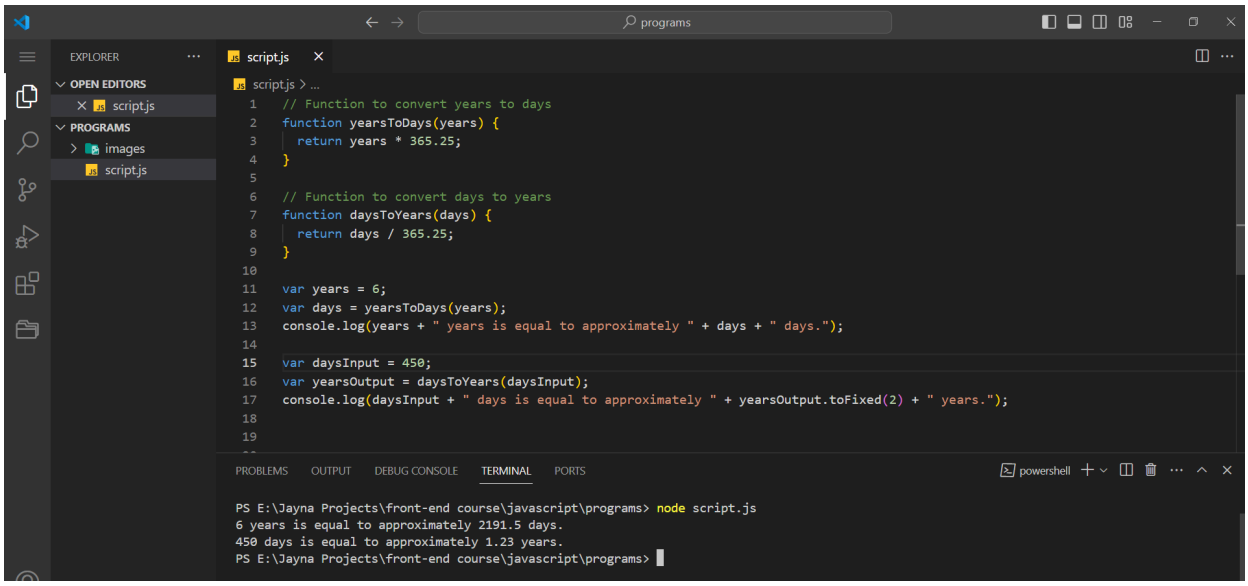
- Use **if** to specify a block of code to be executed, if a specified condition is true

- Use **else** to specify a block of code to be executed, if the same condition is false
- Use **else if** to specify a new condition to test, if the first condition is false
- Use **switch** to specify many alternative blocks of code to be executed.

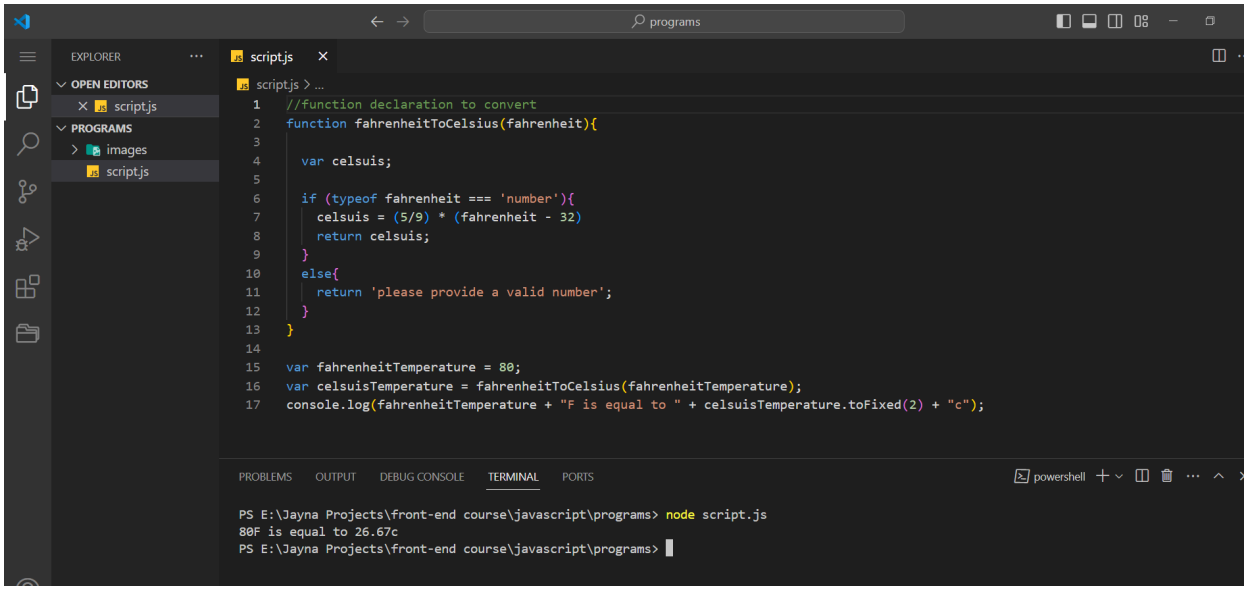
Q.11 Find circumference of Rectangle formula : C = 4 * a ?



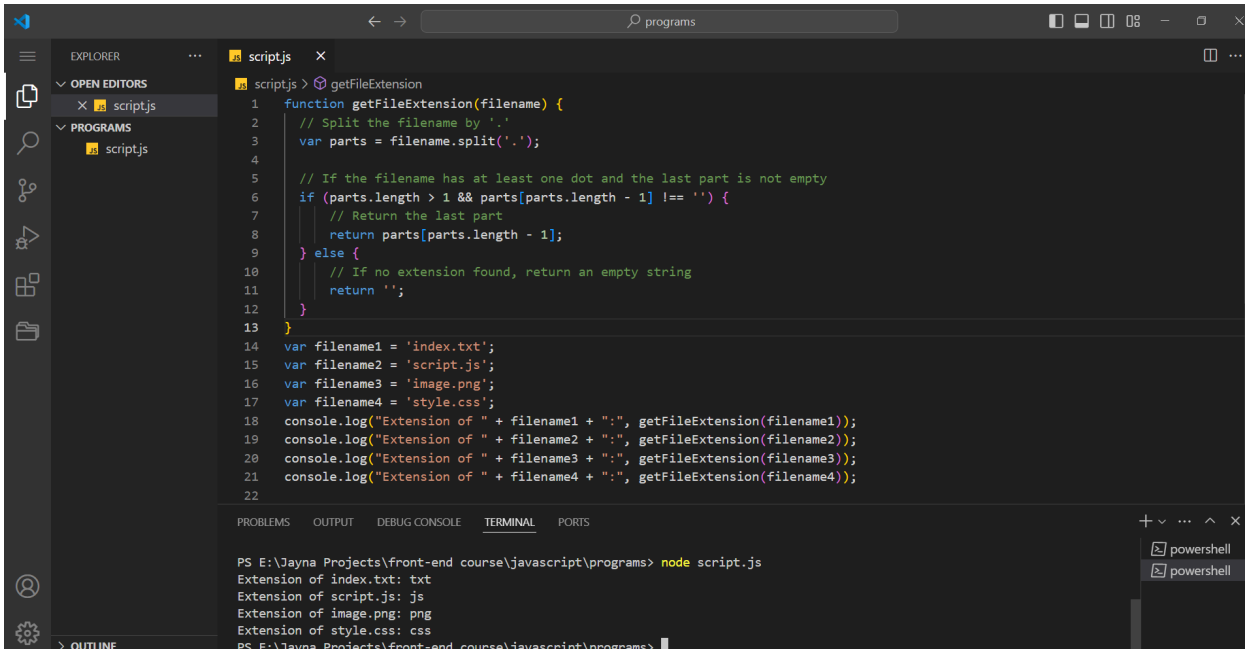
Q.12 WAP to convert years into days and days into years?



Q.13 Convert temperature Fahrenheit to Celsius? (Conditional logic Question)



Q.14 Write a JavaScript exercise to get the extension of a filename.?



Q.15 What is the result of the expression (5 > 3 && 2 < 4)?

- The expression (5>3 && 2<4) is **true**. Because the condition 5>3 is true and 2<4 is true.
- So, the AND operator returns true because both the conditions are true.

Q.16 What is the result of the expression (true && 1 && "hello")?

- The result of the expression is **“hello**”.

- Javascript evaluates && expression from left to right. If all operands are truthy, it returns the value of the last operand.
- So in this case:
    - true is truthy.
    - 1 is truthy.
    - “hello” is also truthy.

Q.17 What is the result of the expression true && false || false && true?

- The result of the expression is **false**.
- Javascript evaluates logical AND (&&) expression before logical OR (||) expression.
- Evaluation step by step:
    - True && false: This evaluates false because one of the operands is false.
    - False && true: This evaluates false for the same reason.
    - False || false: This evaluates false because both operands are false.
- So, the final result is false.

Q.18 What is a Loop and Switch Case in JavaScript define that ?

- In JavaScript, a loop is a programming construct that allows you to execute a block of code repeatedly until a certain condition is met.
- There are several types of loops in JavaScript, including the for loop, while loop, and do-while loop.

- **for loop**: The for loop is used when you know the number of times you want to execute a block of code. It consists of three parts: initialization, condition, and iteration. The loop continues to execute as long as the condition evaluates to true.

  Syntax:
  ```
  for (initialization; condition; iteration) {
   // Code to be executed
  }
  ```

- **while loop:** The while loop is used when you want to execute a block of code as long as a condition is true. The loop evaluates the condition before executing the block of code.

  Syntax:
  ```
  while (condition) {
  // Code to be executed
  }
  ```

- **do-while loop:** The do-while loop is similar to the while loop, but it always executes the block of code at least once before checking the condition. The loop continues to execute as long as the condition evaluates to true.

  Syntax:
  ```
  do {
  // Code to be executed
  } while (condition);
  ```

- **Switch case** is another control flow statement in JavaScript used to perform different actions based on different conditions. It provides a cleaner and more organized alternative to using multiple if...else statements.

  Syntax:
  switch (expression) {
  case value1:
  value1
  break;
  case value2:
  value2
  break;
  default:
  }

Q.19 What is the use of is Nan function?

- In javascript NAN stands for “Not a number”.
- It is a special value that represents the result of an operation that cannot produce a meaningful numeric result.
- The NAN value is returned when:
  - Performing arithmetic operations involving non-numeric values or invalid calculations.
  - Converting non-numeric strings to numbers using parseInt() or parseFloat() functions when the string cannot be parsed as a valid number.

Q.20 What is the difference between && and || in JavaScript?

- In javascript && and || are both logical operators used for boolean operations, but they behave differently:

  &&(Logical AND):
  - The && operator returns true if both operands are true, otherwise it returns false.
  - It short-circuits: if the left operand is false, the right operand is not evaluated because the result will always be false.
  - Example: true && true returns true, true && false returns false, false && true returns false, false && false returns false.

  || (Logical OR):

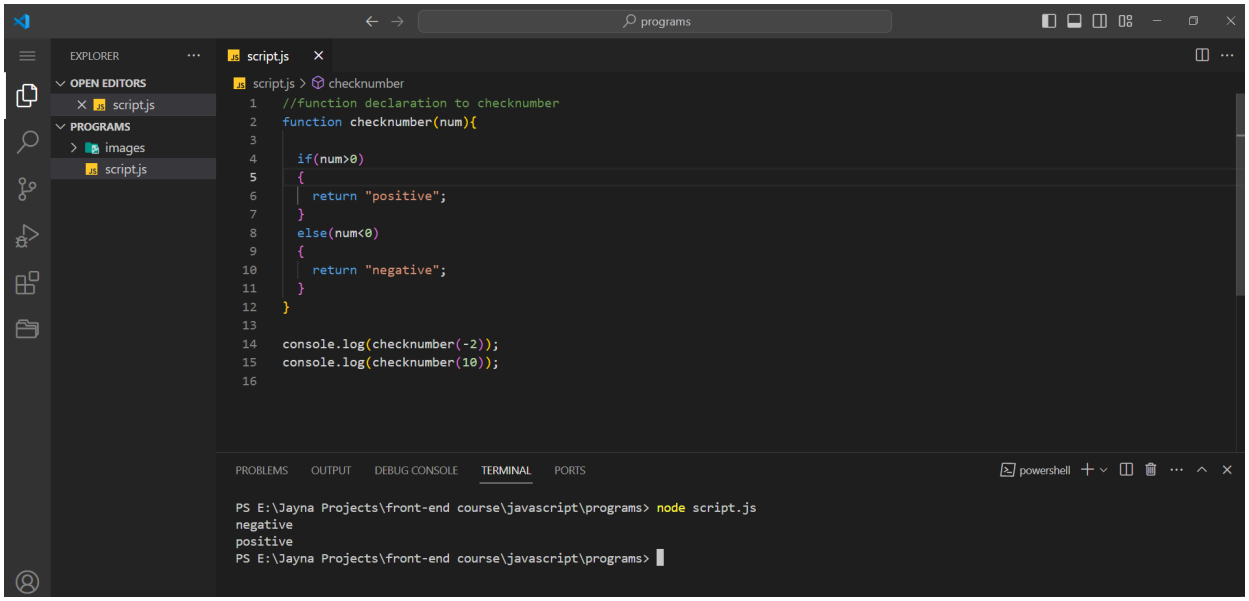
  - The || operator returns true if at least one of the operands is true, otherwise it returns false.
  - It short-circuits: if the left operand is true, the right operand is not evaluated because the result will always be true.
  - Example: true || true returns true, true || false returns true, false || true returns true, false || false returns false.

Q.21 What is the use of Void (0)?

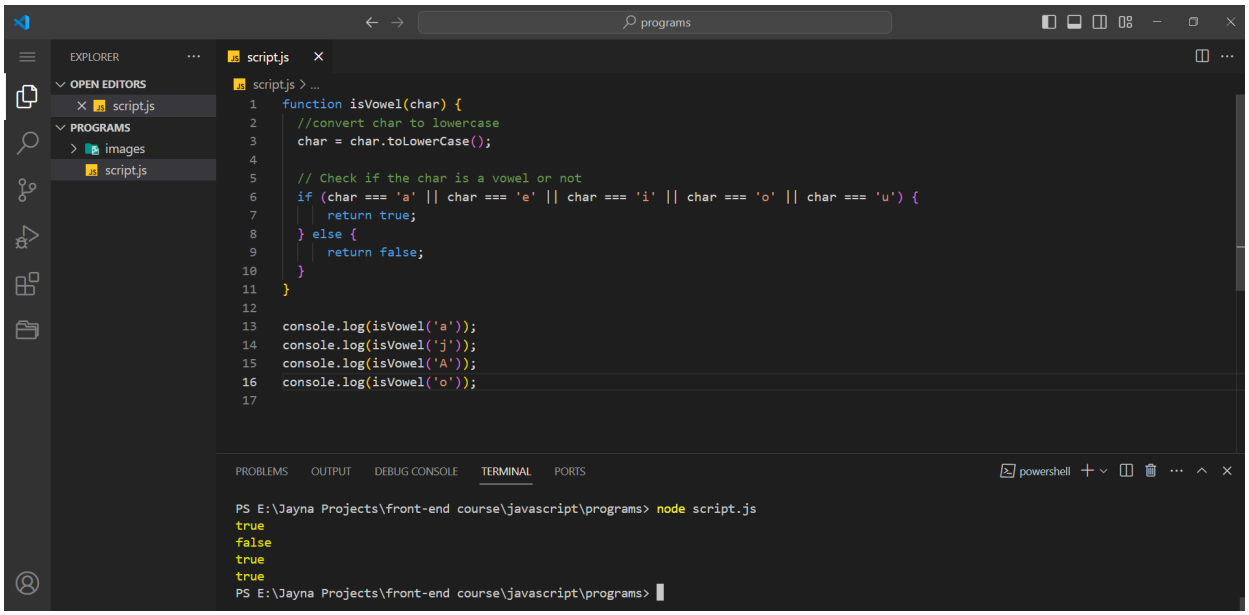
- In javascript void(0) is an expression that evaluates to undefined.
- It's often used to return undefined from an expression context.

- The primary use case of void(0) is to create an expression that returns undefined without explicitly using the undefined keyword.
- It can be useful in scenarios where you want to ensure that a function or event handler doesn't inadvertently return a value.

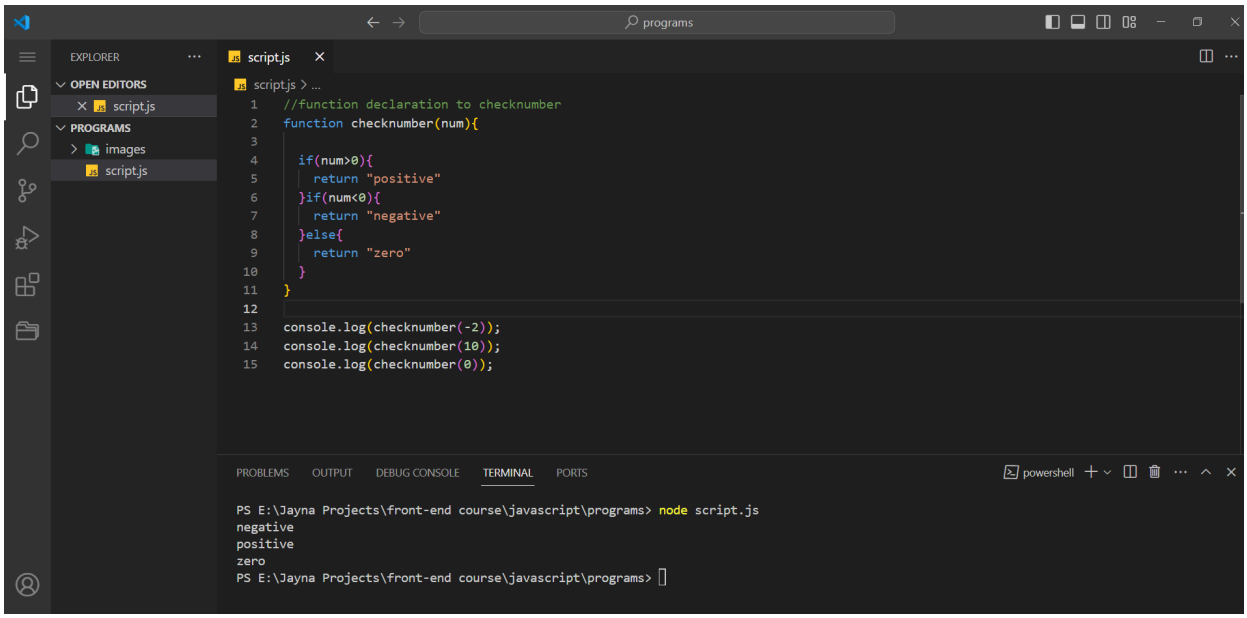
Q.22 Check Number Is Positive or Negative in JavaScript?



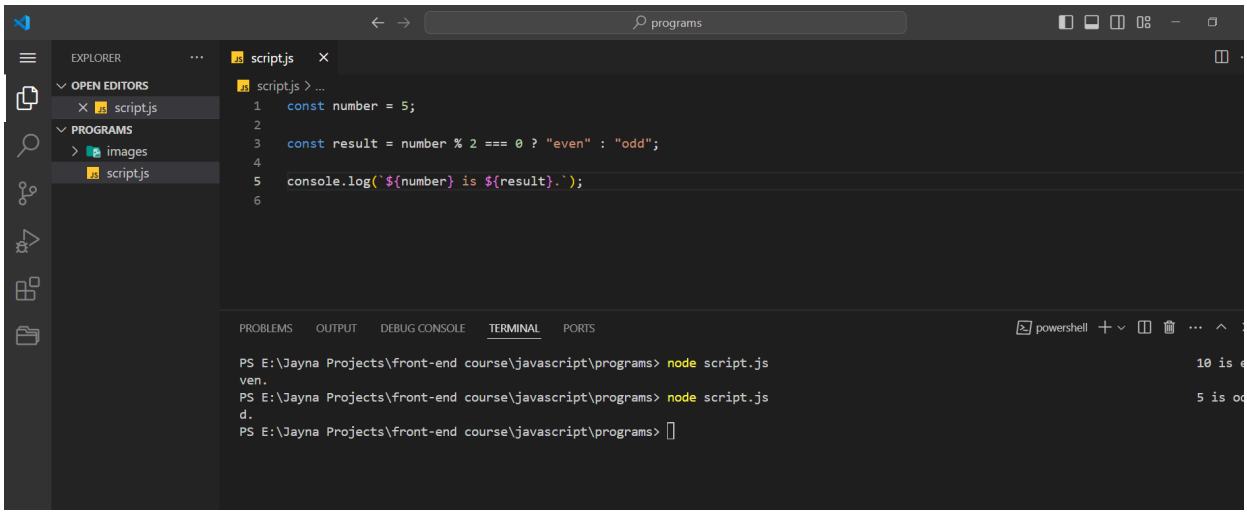
Q.23 Find the Character Is Vowel or Not ?



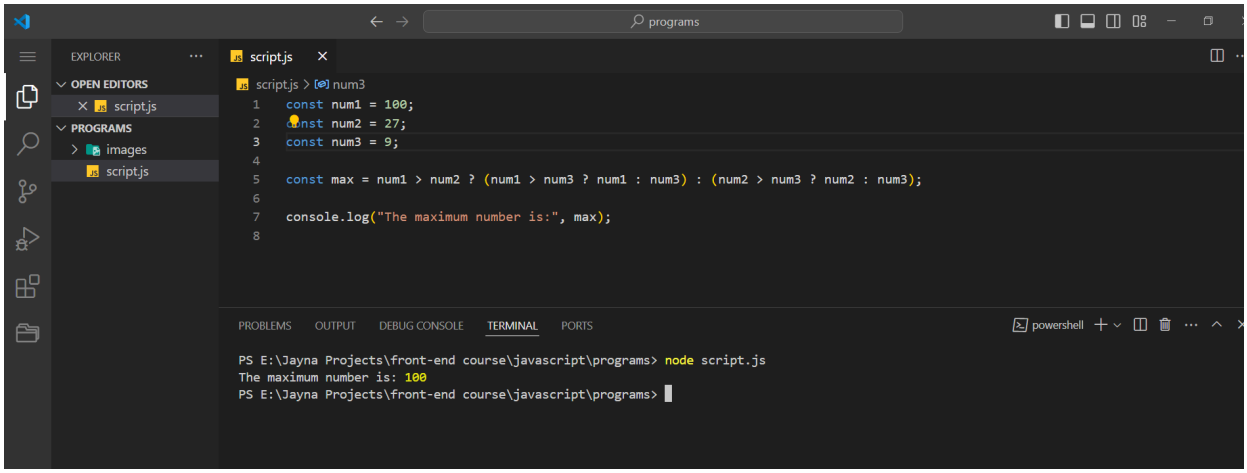
Q.24 Write to check whether a number is negative, positive or zero?



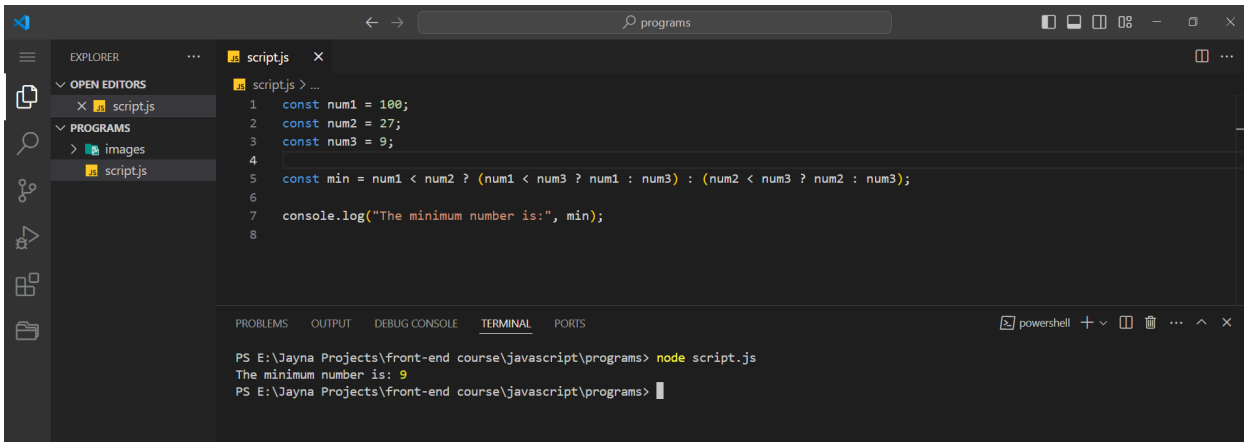
Q.25 Write to find number is even or odd using ternary operator in JS?



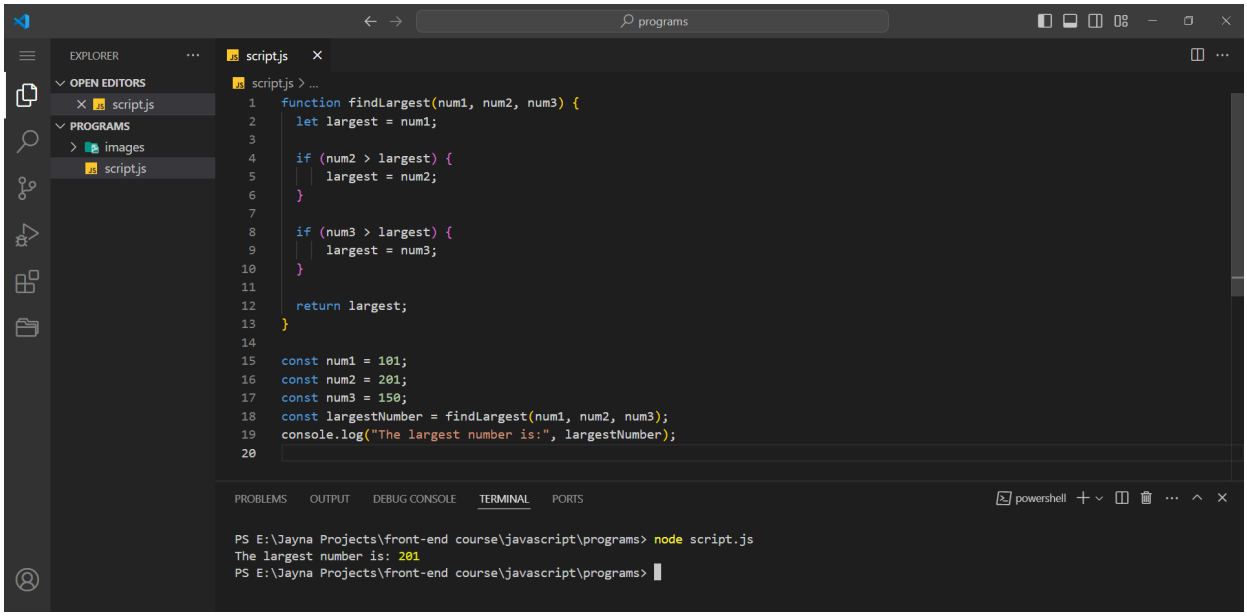
Q.26 Write find maximum number among 3 numbers using ternary operator in JS?



Q.27 Write to find minimum number among 3 numbers using ternary operator in JS?

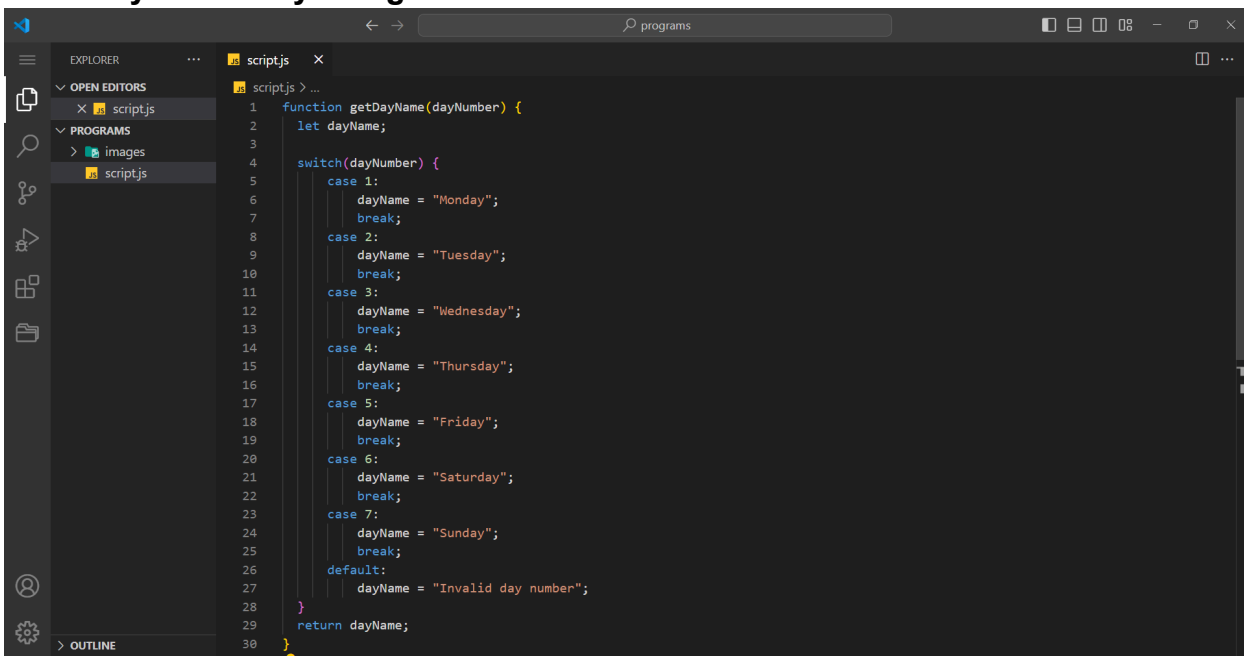


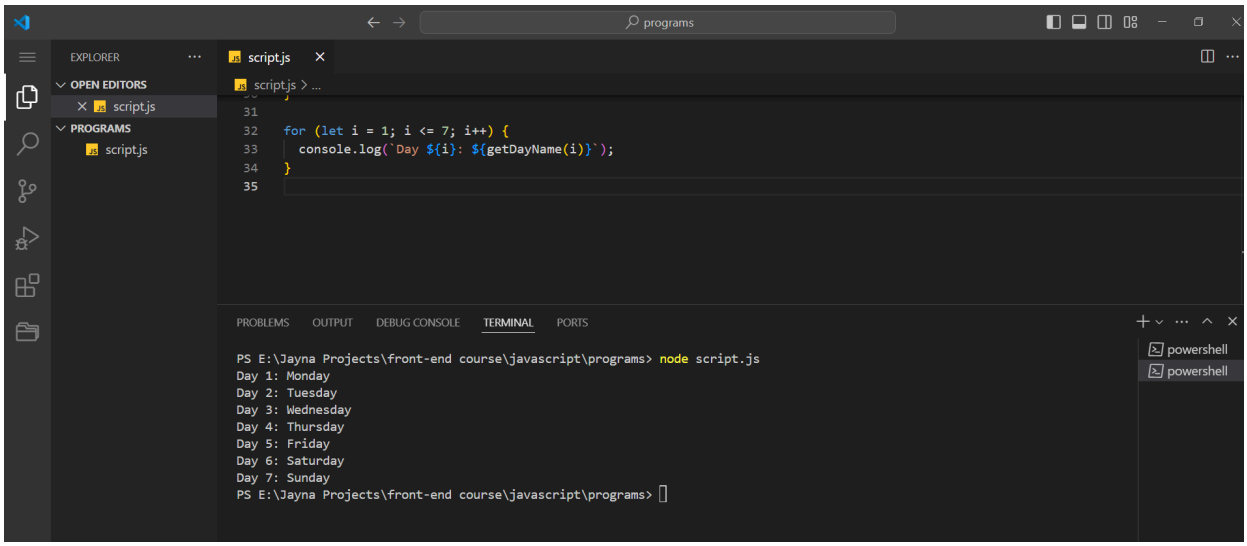
Q.28 Write to find the largest of three numbers in JS?



Q.29 Write a program to show :

i. Monday to Sunday using switch case in JS?





ii. Vowel or Consonant using switch case in JS?