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MERN STACK TASK(Q31-Q55)

TASK 31: Compare two numbers using relational operators (>, <, >=, <=).

Program :

```
<!DOCTYPE HTML>
<html>
   <head>
      <title>Sri Nithyasri-717823T153</title>
   </head>
   <body>
      <script>
      var a=10;
      var b=20;
      if(a<=b){
         if(a<b){
            console.log("A is less than B");
         }
         else{
            console.log("A is equal to B");
         }
      }
      else{
         console.log("A is greater than B");
      }
</script>
   </body>
</html>
```

Output :

TASK 32: Use equality () and strict equality (=) operators to compare different data types and note the differences.

Program :

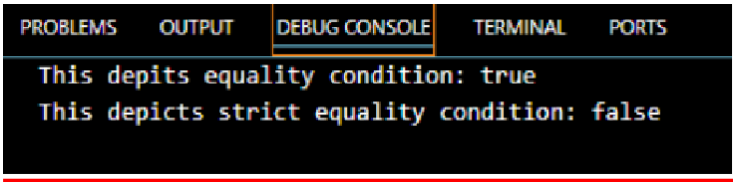
```
<!DOCTYPE HTML>
<html>
  <head>
    <title>Sri Nithyasri-717823T153</title>
  </head>
  <body>
    <script>

    var a=90;
    var result=(a=="90")
      console.log("This depits equality condition: "+result);

    var result1=(a==="90")
      console.log("This depicts strict equality condition: "+result1);

</script>
  </body>
</html>
```

Output :



TASK 33: Compare two strings lexicographically.

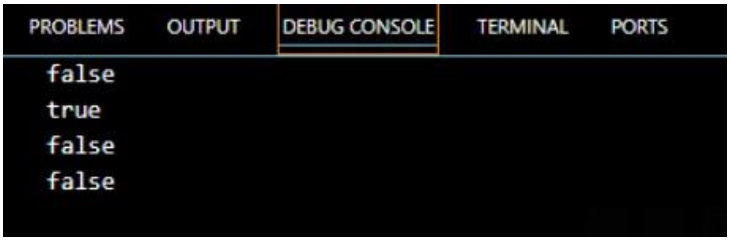
Program :

```
<!DOCTYPE HTML>
<html>
  <head>
    <title>Sri Nithyasri-717823T153</title>
  </head>
```

```
    <body>
        <script>

        var a ="sri";
        var b="nithyasri";
        var result=(a<b);
        var result1=(a>b);
        var result2=(a==b);
        var result3=(a===b);
        console.log(result);
        console.log(result1);
        console.log(result2);
        console.log(result3);
</script>
    </body>
</html>
```

Output :

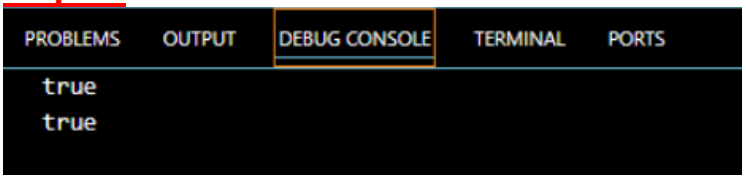


TASK 34: Use the inequality (!=) and strict inequality (!==) operators to compare values.

Program :

```
<!DOCTYPE HTML>
<html>
   <head>
      <title>Sri Nithyasri-717823T153</title>
   </head>
   <body>
      <script>
      var a ="sri";
      var   b="nithyasri";
      var   result=(a!==b);
      var   result1=(a!=b);
      console.log(result);
      console.log(result1);
</script>
   </body>
</html>
```

Ouput :

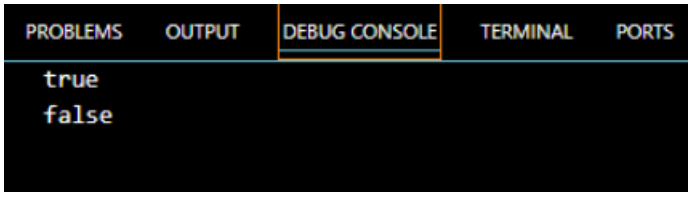


TASK 35: Compare null and undefined using both == and ===. 2. Conditional branching: if, '?'

Program :

```
<!DOCTYPE HTML>
<html>
   <head>
      <title>Sri Nithyasri-717823T153</title>
   </head>
   <body>
      <script>
      var a;
      var b=null;
      console.log(a==b);
      console.log(a===b);
</script>
   </body>
</html>
```

Output :



TASK 36 : Write an if statement that checks if a number is even or odd

Program :

```
<!DOCTYPE HTML>
<html>
   <head>
      <title>Sri Nithyasri-717823T153</title>
   </head>
   <body>
      <script>
```

```
        var a=prompt("Enter a value",0);
        if(a%2==0){
         console.log("Even");
        }
        else{
         console.log("Odd");
        }
</script>
   </body>
</html>
```

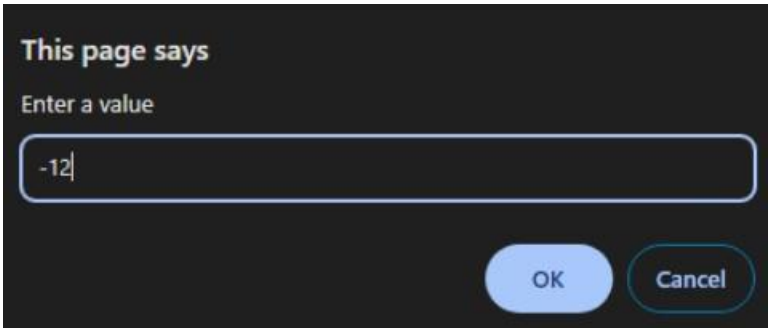
Output :

TASK 37: Use nested if statements to classify a number as negative, positive, or zero.

Program :

```
<!DOCTYPE HTML>
<html>
   <head>
      <title>Sri Nithyasri-717823T153</title>
   </head>
   <body>
      <script>
      var a=prompt("Enter a value",0);
      if(a<0){
       console.log("Negative");
      }
      else if(a==0){
       console.log("Zero");
      }
      else{
      console.log("Positive");
      }//a>0
</script>
   </body>
</html>
```

Output :

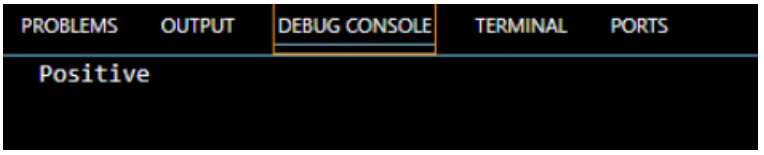


TASK 38: Use the conditional (ternary) operator '?' to rewrite a simple if…else statement.

Program :

```
<!DOCTYPE HTML>
<html>
   <head>
      <title>Sri Nithyasri-717823T153</title>
   </head>
   <body>
      <script>
      var a=prompt("Enter a value",0);
      var
result=(a<0)?console.log("Negative"):(a==0)?console.log("Zero"):console.log("Po
sitive");
</script>
   </body>
</html>
```

Output:

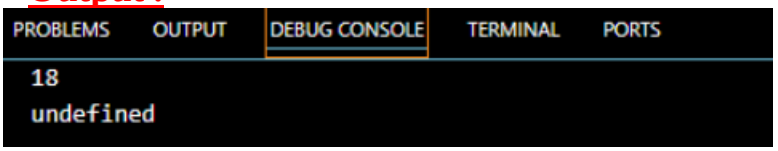


TASK 39: Check the validity of a variable using the ? operator.

Program :

```
<!DOCTYPE HTML>
<html>
  <head>
    <title>Sri  Nithyasri-717823T153</title>
  </head>
  <body>
    <script>
   var sri={
    name:"Sri Nithyasri",
    age:"18",
   };
   var result=console.log(sri.age);
   var result1=console.log(sri.dob);
</script>
  </body>
</html>
```

Output :

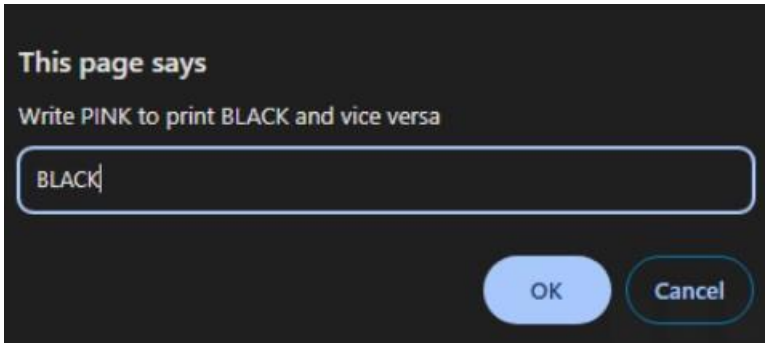


TASK 40: Task 40: Use the conditional operator to assign a value to a variable based on a condition.

Program :

```
<!DOCTYPE HTML>
<html>
  <head>
    <title>Sri Nithyasri-717823T153</title>
  </head>
  <body>
    <script>
    var a=prompt("Write PINK to print BLACK and vice versa");
    var
result=(a=="PINK")?console.log("BLACK"):console.log("PINK");
</script>
  </body>
</html>
```

Output :


This page says
Write PINK to print BLACK and vice versa
BLACK
OK
Cancel

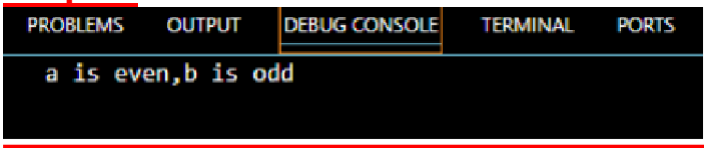

PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL
PORTS
PINK

TASK 41: Evaluate various combinations of logical operators (&&, ||, !).

Program :

```
<!DOCTYPE HTML>
<html>
   <head>
      <title>Sri Nithyasri-717823T153</title>
   </head>
   <body>
      <script>
      var a=56;
      var b=67;
      if(a!=b){
      if(a%2==0 && b%2==0){
       console.log("Both are even ");
      }
      else if(a%2==0 || b%2==0){
       if(a%2==0){
          console.log("a is even,b is odd");
       }
       else{
          console.log("b is even,a is odd");
       }
      }
      else{
       console.log("Both are odd");
      }}
</script>
   </body>
</html>
```

Output :



TASK 42: Use logical operators to write a condition that checks if a number is in a given range

Program :

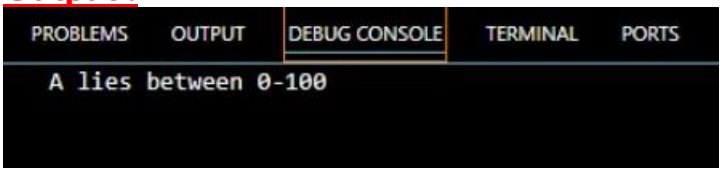
```
<!DOCTYPE HTML>
<html>
   <head>
      <title>Sri Nithyasri-717823T153</title>
```

```
</head>
<body>
  <script>
  var a=56;
  if(a>=0 && a<=100){
   console.log("A lies between 0-100 ");
  }
  else if(a>100 && a<=200){

     console.log("A lies between 101-200");
  }
  else{
     console.log("A exceeds the limit");
  }

</script>
</body>
</html>
```

Output :

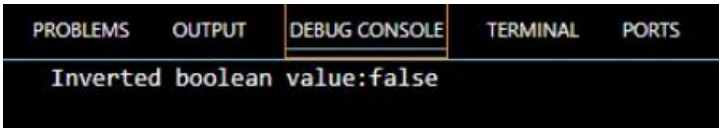


TASK 43: Use the NOT (!) operator to invert a boolean value.

Program :

```
<!DOCTYPE HTML>
<html>
  <head>
    <title>Sri Nithyasri-717823T153</title>
  </head>
  <body>
    <script>
    var a=true;
    console.log("Inverted boolean value:"+!a);
</script>
  </body>
</html>
```

Output :

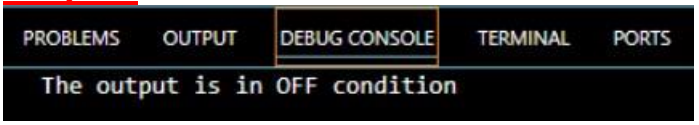


TASK 44: Evaluate the short-circuiting nature of logical operators.

Program :

```
<!DOCTYPE HTML>
<html>
   <head>
      <title>Sri Nithyasri-717823T153</title>
   </head>
   <body>
      <script>
      var a=true;
      var b=false;
      if(a=="true" && b=="true"){
       console.log("The output is in ON condition");
      }else if(a=="true" && b=="false"){
       console.log("The output is in OFF condition");}
       else if(a=="false" && b=="true"){
          console.log("The output is in OFF condition");
       }
       else{
       console.log("The output is in OFF condition");
       }//both false
       //this indicates that when the first if-statement is satisfied,then all the
other statements gives the opposite result
       //for OR operator(||):the if statement goes with both a,b=="false";then
all the remaining results will be true
</script>
   </body>
</html>
```

Output :



TASK 45: Evaluate the short-circuiting nature of logical operators.

Program :

```
<!DOCTYPE HTML>
<html>
```

```
    <head>
      <title>Sri Nithyasri-717823T153</title>
    </head>
    <body>
      <script>
     var a="sri";
     var b="nithya";
     if(a==b){
       console.log("Both the strings are equal");
     }
     else{
       console.log("Both are unequal");
     }
</script>
    </body>
</html>
```

Output :

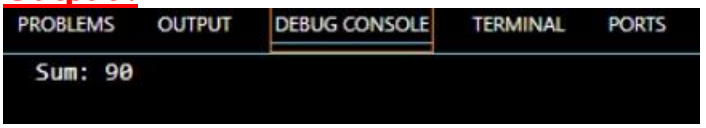
TASK 46: Write a function that takes two numbers as arguments and returns their sum.

Program :

```
<!DOCTYPE HTML>
<html>
    <head>
      <title>Sri Nithyasri-717823T153</title>
    </head>
    <body>
      <script>
     function sum(a,b){
       var sum1=a+b;
       console.log("Sum: "+ sum1);
     }
     sum(45,45);

</script>
    </body>
</html>
```

Output :



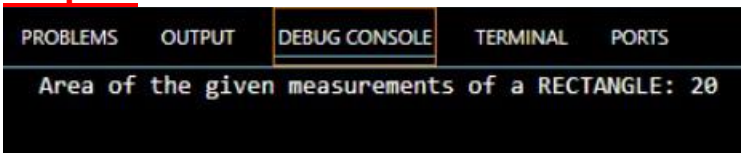
TASK 47: Create a function that calculates the area of a rectangle.

Program :

```
<!DOCTYPE HTML>
<html>
   <head>
      <title>Sri Nithyasri-717823T153</title>
   </head>
   <body>
      <script>
    function area(a,b){
      var area=a*b;
      console.log("Area of the given measurements of a RECTANGLE: "+
area);
    }
    area(4,5);

</script>
   </body>
</html>
```

Output :



TASK 48: Declare a function without parameters and call it.

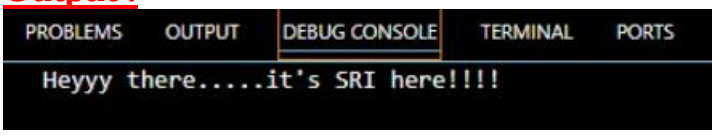
Program :

```
<!DOCTYPE HTML>
<html>
   <head>
      <title>Sri Nithyasri-717823T153</title>
   </head>
   <body>
      <script>
```

```
    function sri(){
      console.log("Heyyy there.... it's SRI here!!!!");
    }
    sri();

</script>
  </body>
</html>
```

Output :



TASK 49: Write a function that returns nothing and observe the default return value.

Program :

```
<!DOCTYPE HTML>
<html>
  <head>
    <title>Sri Nithyasri-717823T153</title>
  </head>
  <body>
    <script>
    function sri(){
    }
    var result=sri();
    console.log(result);

</script>
  </body>
</html>
```

Output :

TASK 50:Declare a function with default parameters and call it with different arguments.

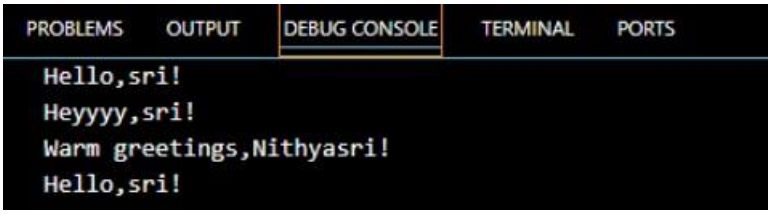
Program :

```
<!DOCTYPE HTML>
<html>
  <head>
```

```
    <title>Sri Nithyasri-717823T153</title>
  </head>
  <body>
    <script>
   function sri(greeting="Hello",name="sri"){
    console.log(`${greeting},${name}!`);
   }
   sri();
   sri("Heyyyy");
   sri("Warm greetings","Nithyasri");
   var result=sri();

</script>
  </body>
</html>
```

Output :



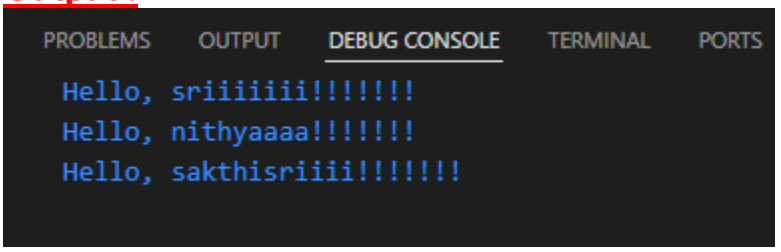
TASK 51: Declare a simple arrow function named greet that takes one parameter name and returns the string "Hello, name!". Test your function with various names.

Program :

```
<!DOCTYPE html>
<html>
<head>
   <title>
      SRI NITHYASRI-717823T153
   </title>
</head>
<body>
<script>
 const greet = (name) => {
  return "Hello, "+`${name}!`;
    }
   console.log(greet("sriiiiiii!!!!!!"));
```

```
    console.log(greet("nithyaaaa!!!!!!"));
    console.log(greet("sakthisriiii!!!!!!"));
</script>
</body>
</html>
```

Output :

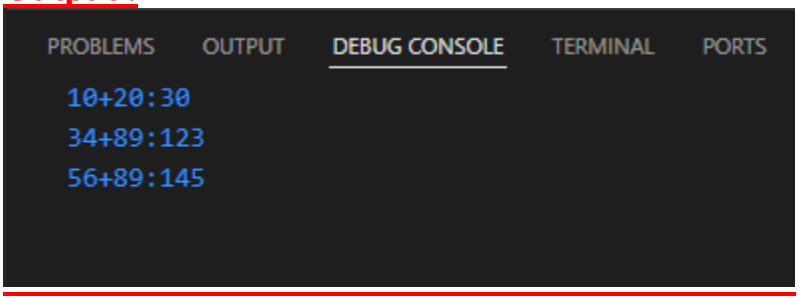


TASK 52:Write an arrow function named add that takes two parameters and returns their sum. Validate your function with several pairs of numbers.

Program :

```
<!DOCTYPE html>
<html>
   <head>
      <title>
         SRI NITHYASRI-717823T153
      </title>
   </head>
   <body>
   <script>
     var sum=(a,b)=>a+b;
     var result=sum(10,20);
     var result1=sum(34,89);
     var result2=sum(56,89);
     console.log("10+20:" + result);
     console.log("34+89:" + result1);
     console.log("56+89:" + result2);
   </script>
   </body>
</html>
```

Output :

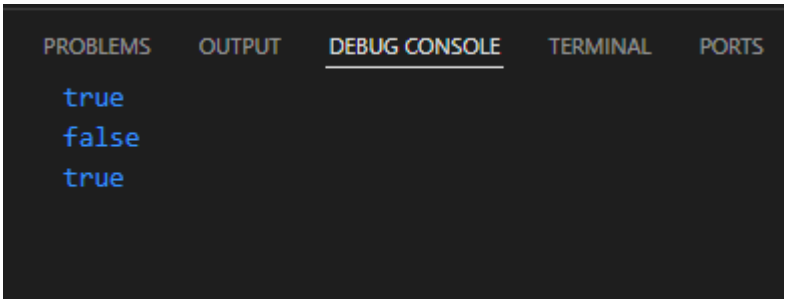


TASK 53: Declare an arrow function named isEven that checks if a number is even. If the number is even, it should return true; otherwise, false. Remember that if the arrow function body has a single statement, you can omit the curly braces.

Program :

```
<!DOCTYPE html>
<html>
   <head>
      <title>
         SRI NITHYASRI-717823T153
      </title>
   </head>
   <body>
   <script>
    var even=(a)=>a%2==0;
    var result=even(10);
    var result1=even(89);
    var result2=even(0);
    console.log( result);
    console.log( result1);
    console.log( result2);
   </script>
   </body>
</html>
```

Output :

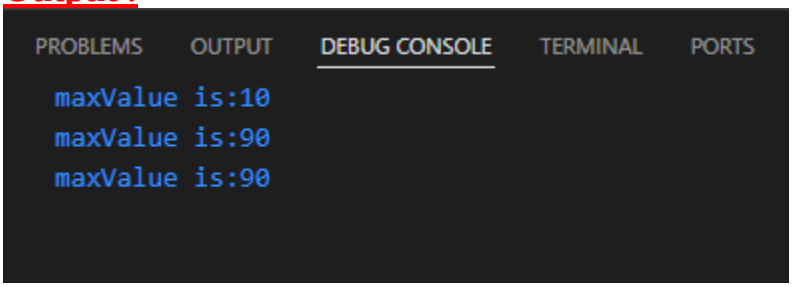


TASK 54: Implement an arrow function named maxValue that takes two numbers as parameters and returns the larger number. Here, you'll need to use curly braces for the function body and the return statement.

Program :

```
<!DOCTYPE html>
<html>
   <head>
      <title>
         SRI NITHYASRI-717823T153
      </title>
   </head>
   <body>
   <script>
     var maxValue=(a,b)=>a>b?a:b;
     var result=maxValue(10,7);
     var result1=maxValue(89,90);
     var result2=maxValue(0,90);
     console.log( "maxValue is:"+result);
     console.log( "maxValue is:"+result1);
     console.log(  "maxValue is:" +result2);
   </script>
   </body>
</html>
```

Output :



TASK 55: Examine the behavior of the this keyword inside an arrow function vs a traditional function. Create an object named myObject with a property value set to 10 and two methods: multiplyTraditional using a traditional function and multiplyArrow using an arrow function. Both methods should attempt to multiply the value property by a number passed as a parameter. Check the value of this inside both methods.

Program :

```
<!DOCTYPE html>
<html>
  <head>
    <title>
      SRI NITHYASRI-717823T153
    </title>
  </head>
  <body>
  <script>
   const myObject = {
   value:789,
   multiplyTraditional:function (num) {
   console.log("Traditional function this:", this);
   return this.value*num;
  },
     multiplyArrow:(num) => {
     console.log("Arrow function this:",this);
     return this.value*num;
     }
};
         console.log(myObject.multiplyTraditional(9));
         console.log(myObject.multiplyArrow(0));
  </script>
  </body>
</html>
```

Output :