

Javascript Lab 7 SOLUTIONS

1. Write a nested `for`-loop to produce output similar to the following. The user should be able to specify the number of rows in the output "triangle":

```
1
22
333
4444
55555
666666
7777777
```

```
let num = parseInt(prompt("Input the number of lines"));
let output = "";
for (let row = 1; row <= num; row++){
    for (let count = 0; count < row; count++){
        output += row;
    }
    output += "\n";
}
alert(output);
```

2. Used a nested `for` loop to generate a multiplication table for all values up to 10×10 .

```
let output = "";
for(let row = 1; row <=10; row++){
    for(let col = 1; col <=10; col++){
        output += (row * col) + "\t";
    }
    output += "\n";
}
alert("The Multiplication Table:\n\n" + output);
```

3. In the following write code to produce a single line and then wrap that code in a loop to produce multiple lines

- a) Write nested `for`-loops that produce the following output:

```
000111222333444555666777888999
000111222333444555666777888999
000111222333444555666777888999
```

```
let output = "";
for(let line = 1; line <= 3; line++){
  for(let value = 0; value < 10; value++){
    for(let repeat = 0; repeat < 3; repeat++){
      output += value;
    }
  }
  output += "\n";
}
alert(output);
```

- b) Modify your code from the previous problem to produce the following output:

```
99999888887777766666555554444433333222221111100000
99999888887777766666555554444433333222221111100000
99999888887777766666555554444433333222221111100000
99999888887777766666555554444433333222221111100000
99999888887777766666555554444433333222221111100000
```

```
let output = "";
for(let line = 1; line <= 3; line++){
  for(let value = 9; value >= 0; value--){
    for(let repeat = 0; repeat < 5; repeat++){
      output += value;
    }
  }
  output += "\n";
}
alert(output);
```

- c) Modify your code from the previous problem to produce the following output:

```
999999999888888888777777666666555554444333221
999999999888888888777777666666555554444333221
999999999888888888777777666666555554444333221
999999999888888888777777666666555554444333221
```

```
let output = "";
for(let line = 1; line <= 3; line++){
  for(let value = 9; value >= 0; value--){
    for(let repeat = 0; repeat < value; repeat++){
```

```
        output += value;
    }
}
output += "\n";
}
alert(output);
```

4. (Harder) Write a program that produces the following output. The number of rows in the figure should be input by the user. Use nested for loops to capture the structure of the figure. (Don't worry about how the output looks as it depends in the fonts used – the number of symbols should be as in the figure).

```
!!!!!!!!!!!!!!!!!!!!!!
\\!!!!!!!!!!!!!!!!!!//
\\\!!!!!!!!!!!!!!!!!!///
\\\\\\!!!!!!!!!!!!!!!!!!!!///
\\\\\\\\\\!!!!!!!!!!!!///
\\\\\\\\\\\\\\!!!!!!!!!!!!///
\\\\\\\\\\\\\\\\\\!!!!!!///
```

```
let n = parseInt(prompt("Enter a number of lines"));
let output = "";
for(let lineNum = 0; lineNum < n; lineNum++){
    // Display slashes on left hand side
    for(let slashes = 0; slashes < 2 * lineNum; slashes++){
        output += "\\";
    }
    // Display exclamation marks in the middle
    for(let bangs = 0; bangs < 4 * (n - lineNum) - 2; bangs++){
        output += "!";
    }
    // Display slashes on right hand side
    for(let slashes = 0; slashes < 2 * lineNum; slashes++){
        output += "/";
    }
    output += "\n";
}
alert(output);
```