```
/*
 / AppDev, Laboratory Activity 3
 / Ken Benavente, BSCS 2A
*/

const base_num = 3; // my student no. is 2024-01-09893

console.log("Base number = " + base_num);

console.log("\nProblem 1: Grade Calculator");
console.log("Grade = " + (base_num * 10 + 5));
console.log("Rating: " + calculateGrade(base_num * 10 + 5));

console.log("\nProblem 2: Star Pattern");
showStars(base_num + 2);

console.log("\nProblem 3: Prime Number Checker");
if (isPrime(base_num + 10))
    console.log((base_num + 10) + " is a prime number!");
else
    console.log((base_num + 10) + " is not a prime number!");

console.log("\nProblem 4: Multiplication Table");
multiplicationTable(base_num);

// ------------ USER-MADE FUNCTIONS ------------ //

function calculateGrade(score)
{
    if (score < 60) return 'F';
    if (score < 70) return 'D';
    if (score < 80) return 'C';
    if (score < 90) return 'B';
    return 'A'; // if-statement unnecessary, all conditions are accounted for
}

```

Source Code Screenshots

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```
36
37  function showStars(rows)
38  {
39      for (let stars = 1; stars <= rows; stars++)
40      {
41          let pattern = '';
42          for (let i = 0; i < stars; i++)
43          {
44              pattern += '*';
45          }
46          console.log(pattern);
47      }
48  }
49
50  function isPrime(n)
51  {
52      if (n <= 1) return false;
53      if (n <= 3) return true; // at this point only checks for 2 and 3
54
55      let sqrt = Math.sqrt(n);
56      for (let div = 2; div <= sqrt; div++)
57      {
58          if (n % div === 0) return false; // a remainder of 0 entails a factor other than the number itself
59      }
60      return true;
61  }
62
63  function multiplicationTable(n)
64  {
65      console.log("*\t1   2   3   4   5   6   7   8   9   10");
66      process.stdout.write(n + "\t");
67      for (let i = 1; i <= 10; i++)
68      {
69          let product = (n * i).toString().padEnd(4, ' ');
70          process.stdout.write(product);
71      }
72  }
```

Source Code Screenshots

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```
PS C:\Users\Ken\Desktop\Git_files\APPDEV-LabAct3> node "c:\Users\Ken\Desktop\Git_files\APPDEV-LabAct3\LaboratoryActivity3_Benavente.js"
Base number = 3

Problem 1: Grade Calculator
Grade = 35
Rating: F

Problem 2: Star Pattern
*
**
***
****
*****

Problem 3: Prime Number Checker
13 is a prime number!

Problem 4: Multiplication Table
*       1   2   3   4   5   6   7   8   9   10
3       3   6   9   12  15  18  21  24  27  30
PS C:\Users\Ken\Desktop\Git_files\APPDEV-LabAct3>
```

```
PS C:\Users\Ken\Desktop\Git_files\APPDEV-LabAct3> node "c:\Users\Ken\Desktop\Git_files\APPDEV-LabAct3\LaboratoryActivity3_Benavente.js"
Base number = 7

Problem 1: Grade Calculator
Grade = 75
Rating: C

Problem 2: Star Pattern
*
**
***
****
*****
******
*******
********
*********

Problem 3: Prime Number Checker
17 is a prime number!

Problem 4: Multiplication Table
*       1   2   3   4   5   6   7   8   9   10
7       7   14  21  28  35  42  49  56  63  70
PS C:\Users\Ken\Desktop\Git_files\APPDEV-LabAct3>
```

Sample Outputs

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https://github.com/kenbigtasbenavente24-eng/APPDEV-LabAct3.git

Link of your GitHub repository

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