

IFT 598 Middleware Programming & Database Security

Siddhesh Bhalerao

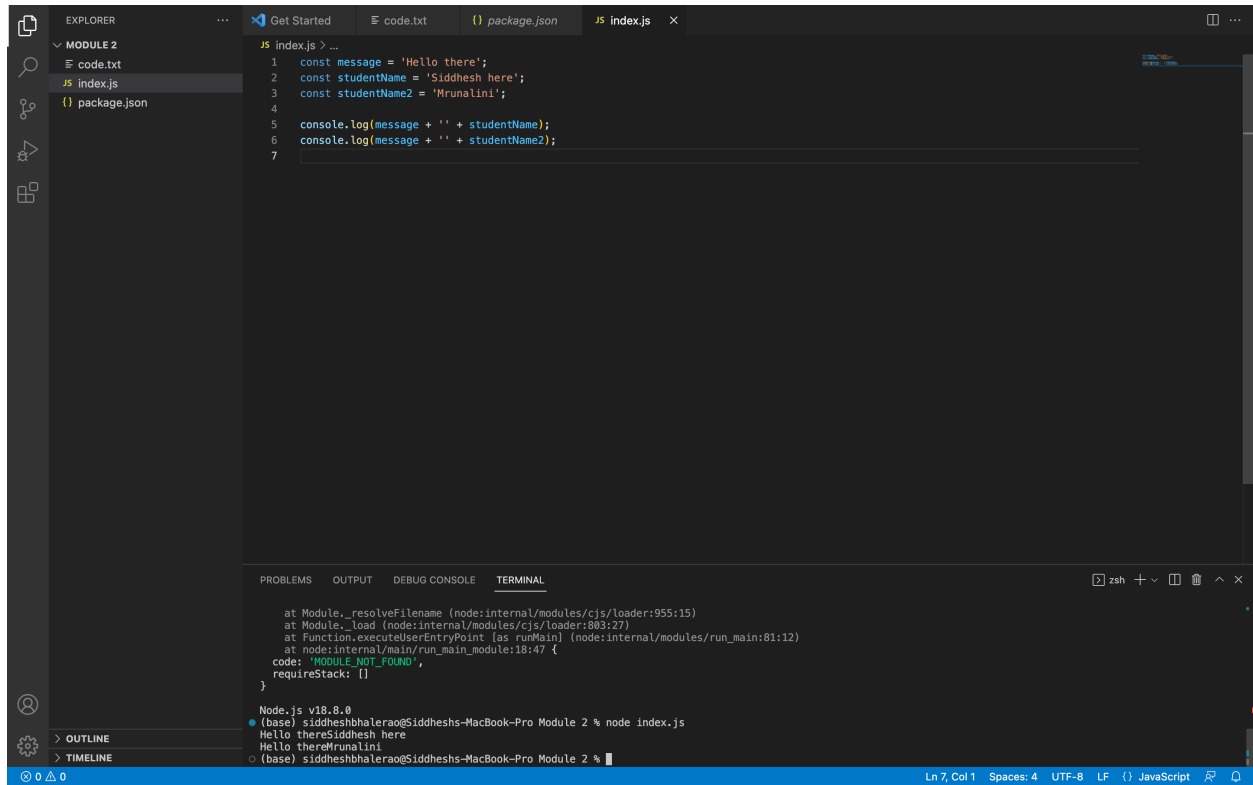
Module 2 Assignment : JavaScript Language

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September 10 2022

In this Assignment I learn JavaScript Language based on following videos

Part 1



The screenshot shows the Visual Studio Code editor interface. The Explorer sidebar on the left displays a project structure with a folder named 'MODULE 2' containing three files: 'code.txt', 'index.js', and 'package.json'. The 'index.js' file is selected and its content is displayed in the main editor window. The code in 'index.js' defines three constants and logs their concatenated values to the console.

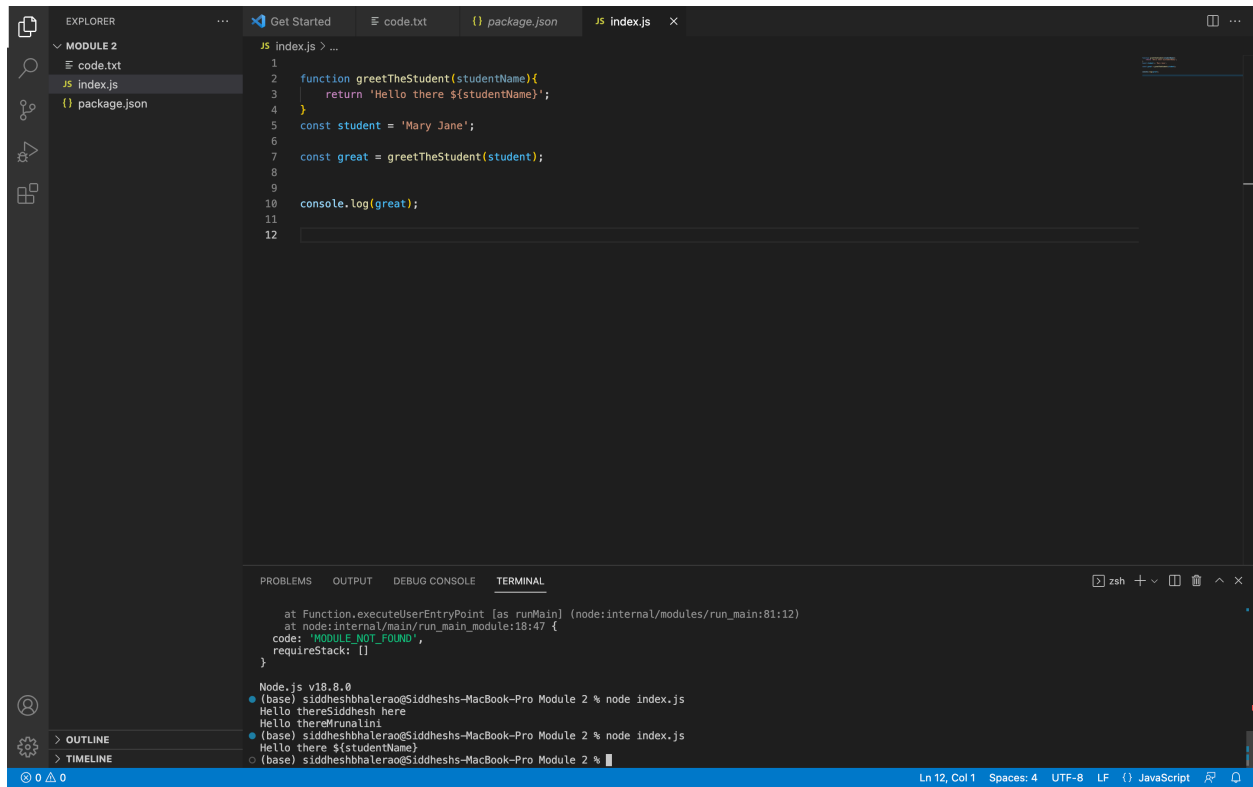
```
1 const message = 'Hello there';
2 const studentName = 'Siddhesh here';
3 const studentName2 = 'Mrunalini';
4
5 console.log(message + ' ' + studentName);
6 console.log(message + ' ' + studentName2);
7
```

Below the editor, the 'TERMINAL' panel is active, showing the output of running the command 'node index.js'. The output displays the concatenated strings from the console.log statements in the code.

```
at Module._resolveFilename (node:internal/modules/cjs/loader:955:15)
at Module._load (node:internal/modules/cjs/loader:883:27)
at Function.executeUserEntryPoint [as runMain] (node:internal/modules/run_main:81:12)
at node:internal/main/run_main_module:18:47 {
  code: 'MODULE_NOT_FOUND',
  requireStack: []
}
Node.js v18.8.0
(base) siddheshbhalerao@Siddheshs-MacBook-Pro Module 2 % node index.js
Hello thereSiddhesh here
Hello thereMrunalini
(base) siddheshbhalerao@Siddheshs-MacBook-Pro Module 2 %
```

The status bar at the bottom of the editor indicates the current cursor position as 'Ln 7, Col 1', the file encoding as 'UTF-8', and the file type as 'JavaScript'.

Part 2



The screenshot shows the Visual Studio Code editor interface. The Explorer sidebar on the left displays a project structure with a folder named 'MODULE 2' containing three files: 'code.txt', 'index.js', and 'package.json'. The 'index.js' file is selected and its content is displayed in the main editor window. The code defines a function 'greetTheStudent' that returns a greeting string, initializes a 'student' variable with the name 'Mary Jane', and logs the result of the function call.

```
1
2 function greetTheStudent(studentName){
3   return 'Hello there ${studentName}';
4 }
5 const student = 'Mary Jane';
6
7 const great = greetTheStudent(student);
8
9
10 console.log(great);
11
12
```

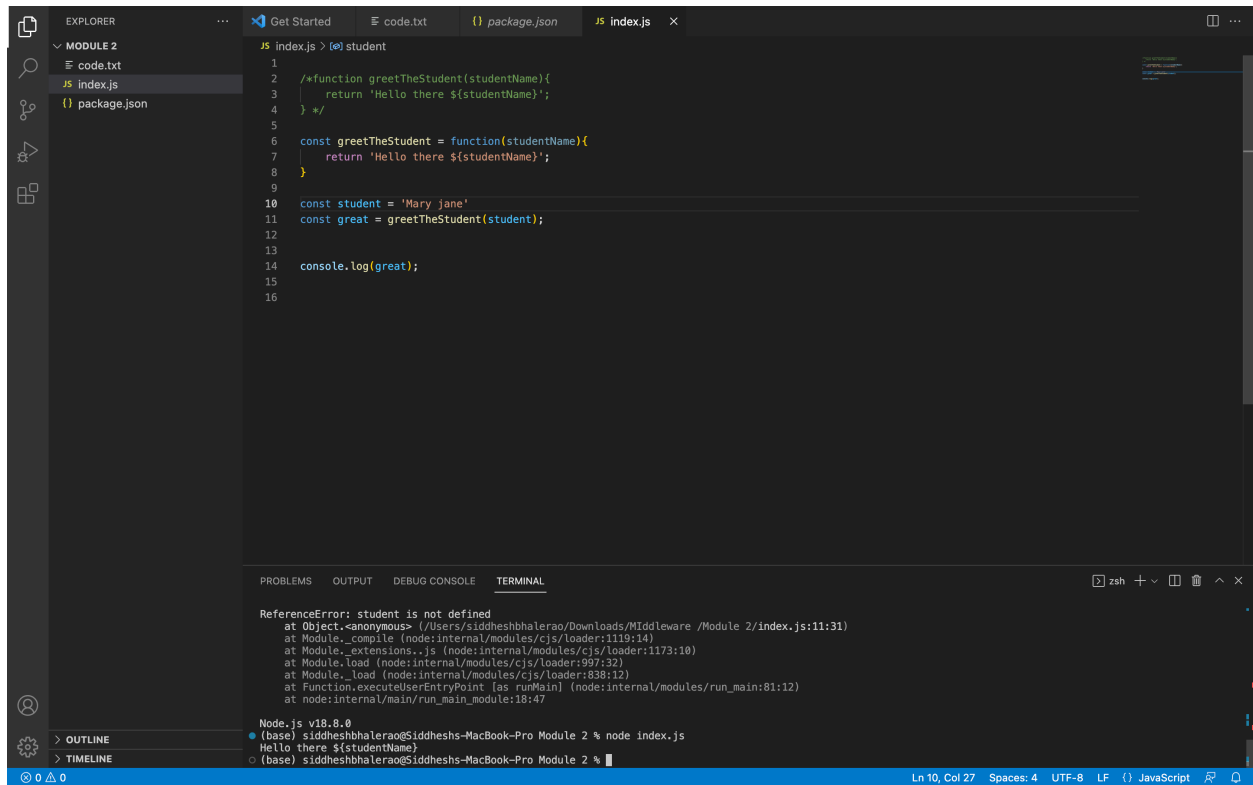
Below the editor, the 'TERMINAL' panel shows the output of running the command 'node index.js'. It displays the Node.js version (v18.8.0) and the output of the script, which is 'Hello thereSiddesh here' followed by 'Hello thereMrunalini'.

```
at Function.executeUserEntryPoint [as runMain] (node:internal/modules/run_main:81:12)
at node:internal/main/run_main_module:18:47 {
  code: 'MODULE_NOT_FOUND',
  requireStack: []
}

Node.js v18.8.0
(base) siddeshbhalerao@Siddeshs-MacBook-Pro Module 2 % node index.js
Hello thereSiddesh here
Hello thereMrunalini
(base) siddeshbhalerao@Siddeshs-MacBook-Pro Module 2 % node index.js
Hello there ${studentName}
(base) siddeshbhalerao@Siddeshs-MacBook-Pro Module 2 %
```

The status bar at the bottom indicates the current position is 'Ln 12, Col 1' and the file is encoded in 'UTF-8' with 'LF' line endings. The language is identified as 'JavaScript'.

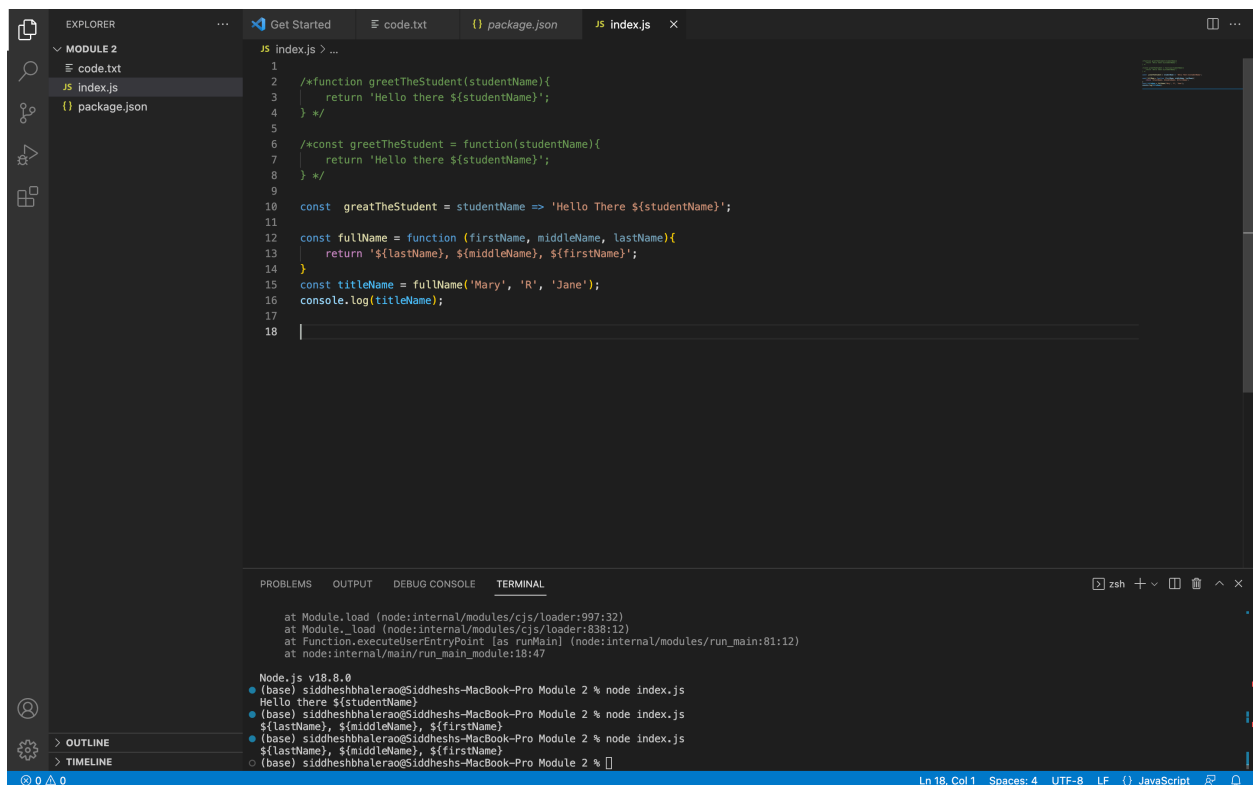
Part 3



The image shows a VS Code editor window with a file named `index.js` open. The file contains the following code:

```
1
2
3  /*function greetTheStudent(studentName){
4    return 'Hello there ${studentName}';
5  } */
6
7  const greetTheStudent = function(studentName){
8    return 'Hello there ${studentName}';
9  }
10
11  const student = 'Mary jane'
12  const greet = greetTheStudent(student);
13
14  console.log(greet);
15
16
```

The terminal output shows a `ReferenceError: student is not defined` at line 11, column 31. The error stack trace indicates the error occurred in the `Function.executeUserEntryPoint [as runMain]` at `node:internal/main/run_main_module:18:47`.



The image shows a VS Code editor window with a file named `index.js` open. The file contains the following code:

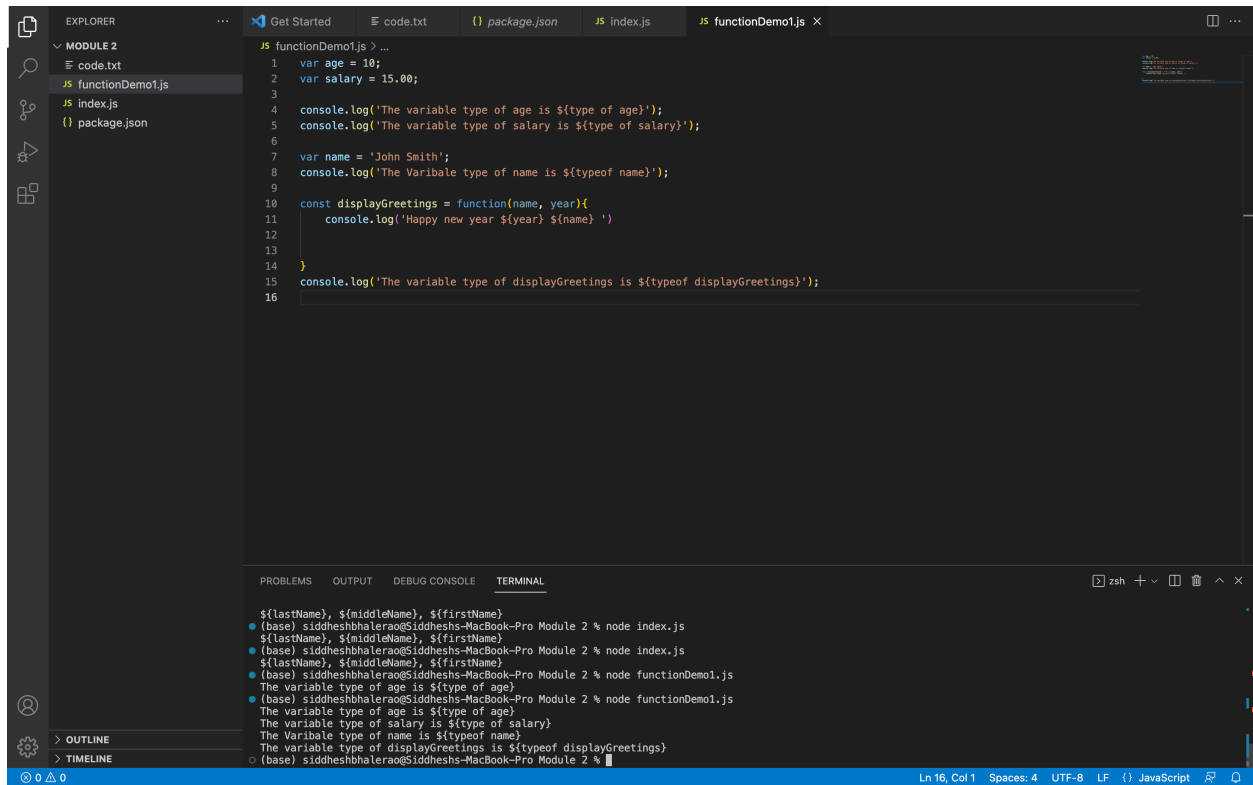
```
1
2
3  /*function greetTheStudent(studentName){
4    return 'Hello there ${studentName}';
5  } */
6
7  /*const greetTheStudent = function(studentName){
8    return 'Hello there ${studentName}';
9  } */
10
11  const greetTheStudent = studentName => 'Hello There ${studentName}';
12
13  const fullName = function (firstName, middleName, lastName){
14    return `${lastName}, ${middleName}, ${firstName}`;
15  }
16
17  const titleName = fullName('Mary', 'R', 'Jane');
18  console.log(titleName);
19
```

The terminal output shows the following messages:

```
at Module.load (node:internal/modules/cjs/loader:997:32)
at Module._load (node:internal/modules/cjs/loader:838:12)
at Function.executeUserEntryPoint [as runMain] (node:internal/modules/run_main:81:12)
at node:internal/main/run_main_module:18:47

Node.js v18.8.0
(base) siddheshbhalerao@siddheshs-MacBook-Pro Module 2 % node index.js
Hello there ${studentName}
(base) siddheshbhalerao@siddheshs-MacBook-Pro Module 2 % node index.js
${lastName}, ${middleName}, ${firstName}
(base) siddheshbhalerao@siddheshs-MacBook-Pro Module 2 % node index.js
${lastName}, ${middleName}, ${firstName}
(base) siddheshbhalerao@siddheshs-MacBook-Pro Module 2 %
```

Part 4



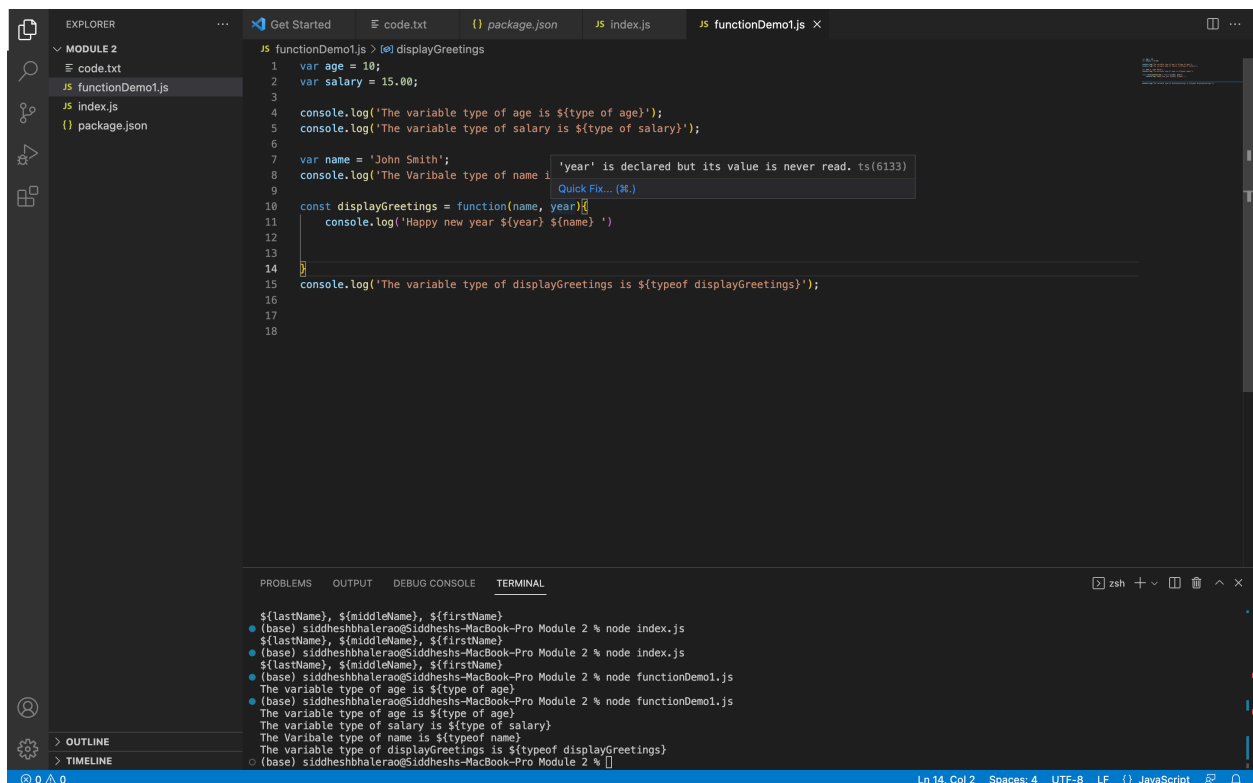
The screenshot shows the VS Code editor with a file named `functionDemo1.js` open. The code in the file is as follows:

```
1  var age = 10;
2  var salary = 15.00;
3
4  console.log('The variable type of age is ${type of age}');
5  console.log('The variable type of salary is ${type of salary}');
6
7  var name = 'John Smith';
8  console.log('The Variable type of name is ${typeof name}');
9
10 const displayGreetings = function(name, year){
11     console.log('Happy new year ${year} ${name} ');
12 }
13
14 console.log('The variable type of displayGreetings is ${typeof displayGreetings}');
```

The terminal window at the bottom shows the output of the code:

```
$(lastName), ${middleName}, ${firstName})
(base) siddheshbhalaria@siddheshs-MacBook-Pro Module 2 % node index.js
$(lastName), ${middleName}, ${firstName})
(base) siddheshbhalaria@siddheshs-MacBook-Pro Module 2 % node index.js
$(lastName), ${middleName}, ${firstName})
(base) siddheshbhalaria@siddheshs-MacBook-Pro Module 2 % node functionDemo1.js
The variable type of age is ${type of age}
The variable type of salary is ${type of salary}
The Variable type of name is ${typeof name}
The variable type of displayGreetings is ${typeof displayGreetings}
(base) siddheshbhalaria@siddheshs-MacBook-Pro Module 2 %
```

Part 5



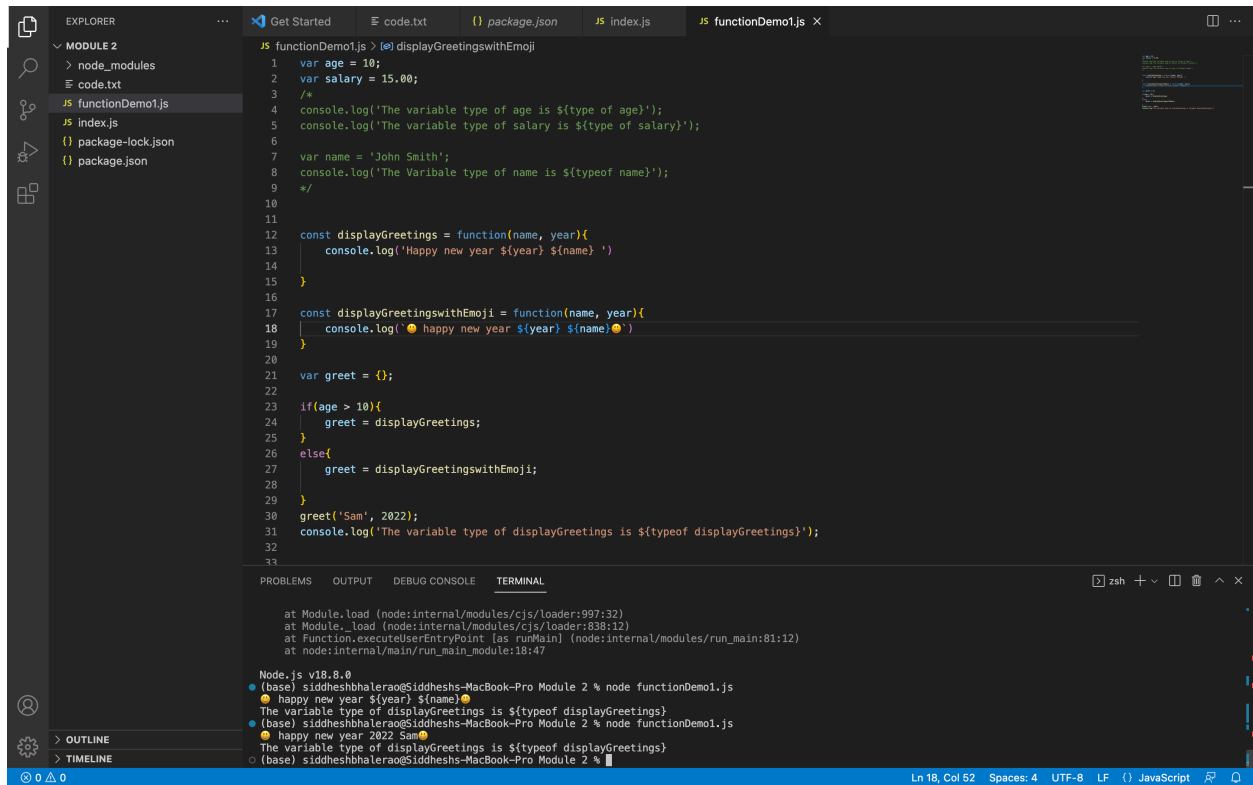
The screenshot shows the VS Code editor with a file named `functionDemo1.js` open. The code in the file is as follows:

```
1  var age = 10;
2  var salary = 15.00;
3
4  console.log('The variable type of age is ${type of age}');
5  console.log('The variable type of salary is ${type of salary}');
6
7  var name = 'John Smith';
8  console.log('The Variable type of name is ${typeof name}');
9
10 const displayGreetings = function(name, year){
11     console.log('Happy new year ${year} ${name} ');
12 }
13
14 console.log('The variable type of displayGreetings is ${typeof displayGreetings}');
```

The terminal window at the bottom shows the output of the code:

```
$(lastName), ${middleName}, ${firstName})
(base) siddheshbhalaria@siddheshs-MacBook-Pro Module 2 % node index.js
$(lastName), ${middleName}, ${firstName})
(base) siddheshbhalaria@siddheshs-MacBook-Pro Module 2 % node index.js
$(lastName), ${middleName}, ${firstName})
(base) siddheshbhalaria@siddheshs-MacBook-Pro Module 2 % node functionDemo1.js
The variable type of age is ${type of age}
The variable type of salary is ${type of salary}
The Variable type of name is ${typeof name}
The variable type of displayGreetings is ${typeof displayGreetings}
(base) siddheshbhalaria@siddheshs-MacBook-Pro Module 2 %
```

part 6



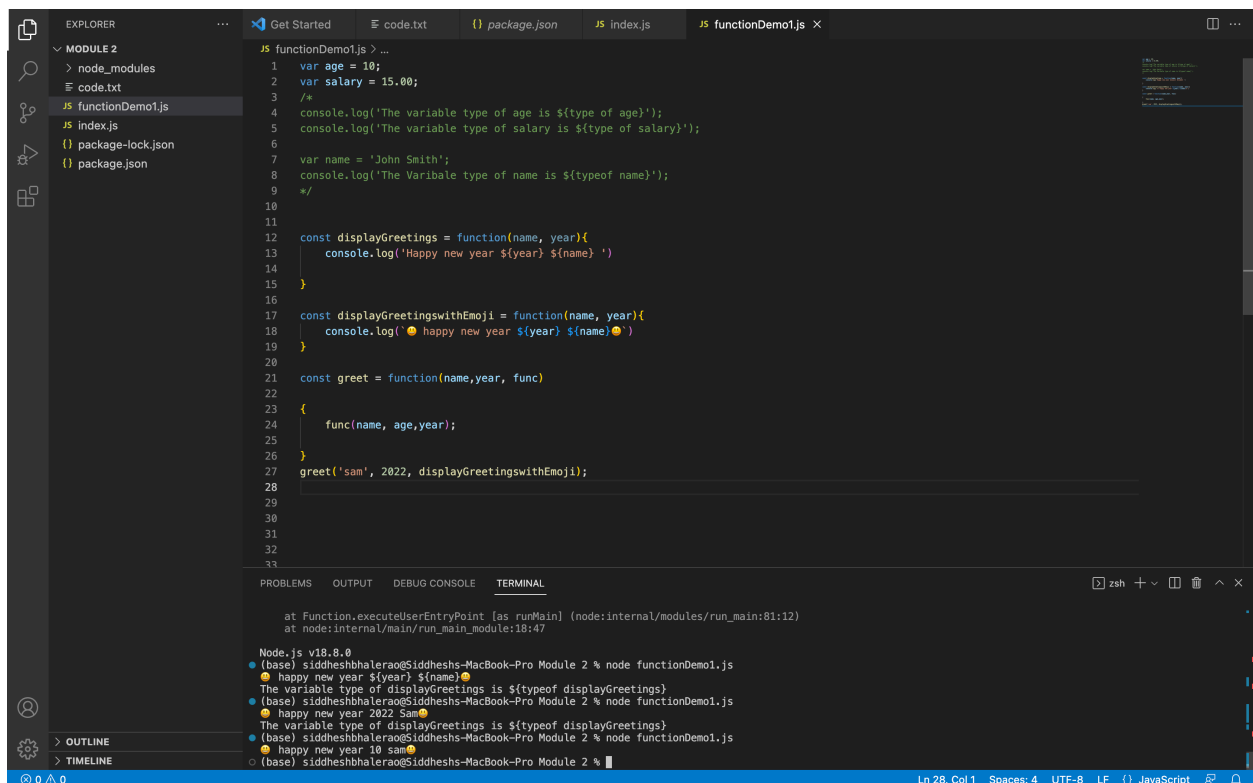
```
1  var age = 10;
2  var salary = 15.00;
3  /*
4  console.log('The variable type of age is ${type of age}');
5  console.log('The variable type of salary is ${type of salary}');
6
7  var name = 'John Smith';
8  console.log('The Varibale type of name is ${typeof name}');
9  */
10
11
12  const displayGreetings = function(name, year){
13      console.log('Happy new year ${year} ${name} ');
14  }
15
16
17  const displayGreetingswithEmoji = function(name, year){
18      console.log('🎉 happy new year ${year} ${name}🎉');
19  }
20
21  var greet = {};
22
23  if(age > 10){
24      greet = displayGreetings;
25  }
26  else{
27      greet = displayGreetingswithEmoji;
28  }
29
30  greet('Sam', 2022);
31  console.log('The variable type of displayGreetings is ${typeof displayGreetings}');
32
33
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

at Module.load (node:internal/modules/cjs/loader:997:32)
at Module._load (node:internal/modules/cjs/loader:838:12)
at Function.executeUserEntryPoint [as runMain] (node:internal/modules/run_main:81:12)
at node:internal/main/run_main_module:18:47

Node.js v18.8.0
(base) siddheshbhalerao@siddheshs-MacBook-Pro Module 2 % node functionDemo1.js
🎉 happy new year \${year} \${name}🎉
The variable type of displayGreetings is \${typeof displayGreetings}
(base) siddheshbhalerao@siddheshs-MacBook-Pro Module 2 % node functionDemo1.js
🎉 happy new year 2022 Sam🎉
The variable type of displayGreetings is \${typeof displayGreetings}
(base) siddheshbhalerao@siddheshs-MacBook-Pro Module 2 %

Part 7



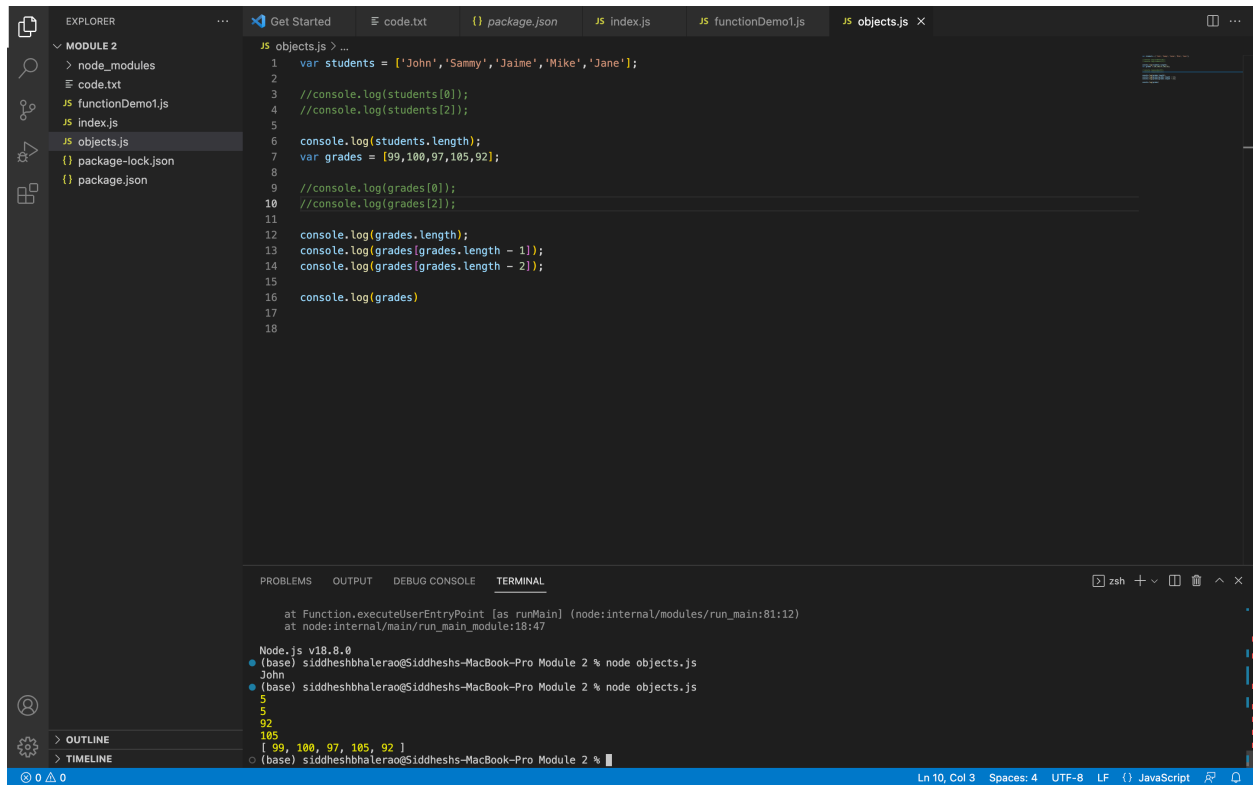
```
1  var age = 10;
2  var salary = 15.00;
3  /*
4  console.log('The variable type of age is ${type of age}');
5  console.log('The variable type of salary is ${type of salary}');
6
7  var name = 'John Smith';
8  console.log('The Varibale type of name is ${typeof name}');
9  */
10
11
12  const displayGreetings = function(name, year){
13      console.log('Happy new year ${year} ${name} ');
14  }
15
16
17  const displayGreetingswithEmoji = function(name, year){
18      console.log('🎉 happy new year ${year} ${name}🎉');
19  }
20
21  const greet = function(name, year, func)
22  {
23      func(name, age, year);
24  }
25
26
27  greet('sam', 2022, displayGreetingswithEmoji);
28
29
30
31
32
33
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

at Function.executeUserEntryPoint [as runMain] (node:internal/modules/run_main:81:12)
at node:internal/main/run_main_module:18:47

Node.js v18.8.0
(base) siddheshbhalerao@siddheshs-MacBook-Pro Module 2 % node functionDemo1.js
🎉 happy new year \${year} \${name}🎉
The variable type of displayGreetings is \${typeof displayGreetings}
(base) siddheshbhalerao@siddheshs-MacBook-Pro Module 2 % node functionDemo1.js
🎉 happy new year 2022 Sam🎉
The variable type of displayGreetings is \${typeof displayGreetings}
(base) siddheshbhalerao@siddheshs-MacBook-Pro Module 2 % node functionDemo1.js
🎉 happy new year 10 sam🎉
(base) siddheshbhalerao@siddheshs-MacBook-Pro Module 2 %

Part 8



```
JS objects.js > ...
1  var students = ['John','Sammy','Jaime','Mike','Jane'];
2
3  //console.log(students[0]);
4  //console.log(students[2]);
5
6  console.log(students.length);
7  var grades = [99,100,97,105,92];
8
9  //console.log(grades[0]);
10 //console.log(grades[2]);
11
12 console.log(grades.length);
13 console.log(grades[grades.length - 1]);
14 console.log(grades[grades.length - 2]);
15
16 console.log(grades)
17
18
```

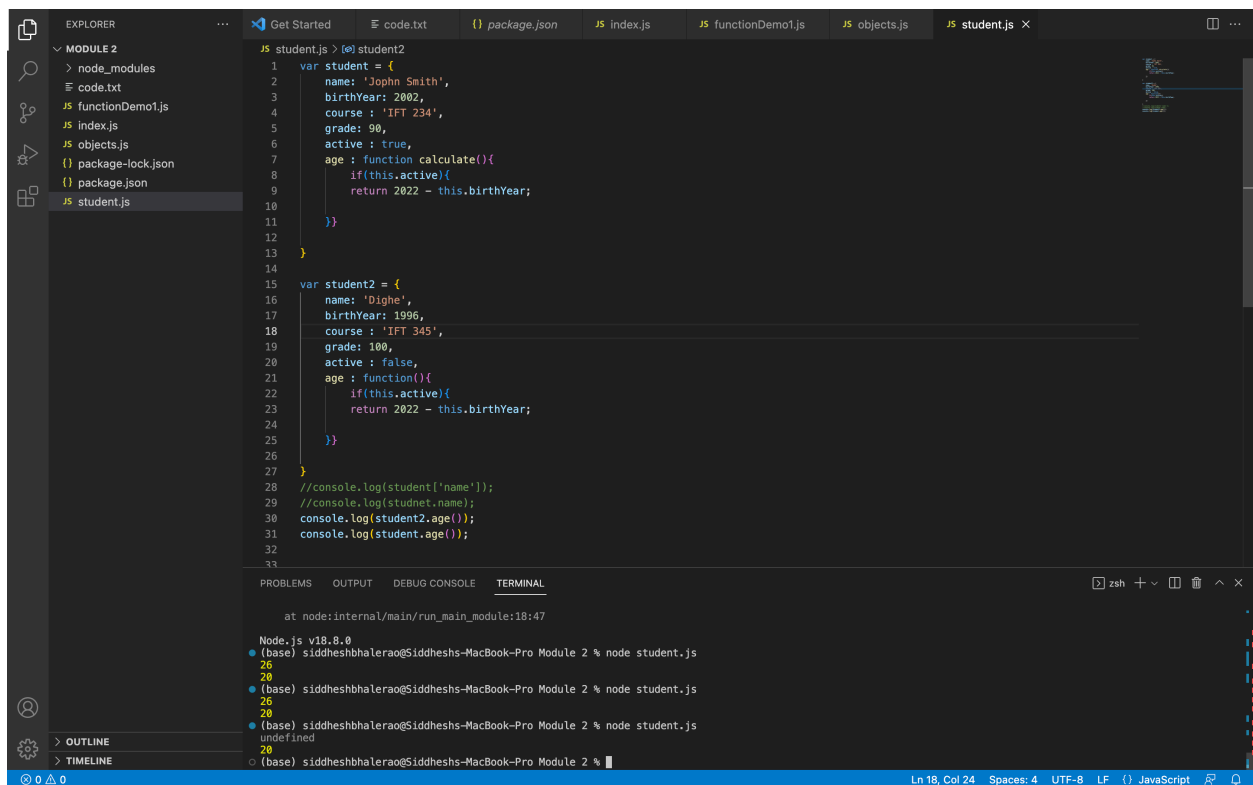
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

at Function.executeUserEntryPoint [as runMain] (node:internal/modules/run_main:81:12)
at node:internal/main/run_main_module:18:47

Node.js v18.8.0
● (base) siddeshbhalerao@Siddheshs-MacBook-Pro Module 2 % node objects.js
John
● (base) siddeshbhalerao@Siddheshs-MacBook-Pro Module 2 % node objects.js
5
5
92
105
[99, 100, 97, 105, 92]
● (base) siddeshbhalerao@Siddheshs-MacBook-Pro Module 2 %

Ln 10, Col 3 Spaces: 4 UTF-8 LF JavaScript

Part 9



```
JS student.js > |@ student2
1  var student = {
2    name: 'John Smith',
3    birthYear: 2002,
4    course: 'IFT 234',
5    grade: 90,
6    active: true,
7    age: function calculate(){
8      if(this.active){
9        return 2022 - this.birthYear;
10     }
11   }
12 }
13
14
15 var student2 = {
16   name: 'Dighe',
17   birthYear: 1996,
18   course: 'IFT 345',
19   grade: 100,
20   active: false,
21   age: function(){
22     if(this.active){
23       return 2022 - this.birthYear;
24     }
25   }
26 }
27
28 //console.log(student['name']);
29 //console.log(student.name);
30 console.log(student2.age());
31 console.log(student.age());
32
33
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

at node:internal/main/run_main_module:18:47

Node.js v18.8.0
● (base) siddeshbhalerao@Siddheshs-MacBook-Pro Module 2 % node student.js
26
20
● (base) siddeshbhalerao@Siddheshs-MacBook-Pro Module 2 % node student.js
26
20
● (base) siddeshbhalerao@Siddheshs-MacBook-Pro Module 2 % node student.js
undefined
20
● (base) siddeshbhalerao@Siddheshs-MacBook-Pro Module 2 %

Ln 18, Col 24 Spaces: 4 UTF-8 LF JavaScript

The screenshot shows the Visual Studio Code editor interface. The Explorer sidebar on the left displays a project structure for 'MODULE 2' with files: node_modules, code.txt, functionDemo1.js, index.js, objects.js, package-lock.json, package.json, and student.js. The main editor window is open to 'student.js', showing the following code:

```
30 }
31
32 students.push(student);
33 students.push(student2);
34 students.forEach((item) => console.log(item.age()));
35
36
37 //console.log(student['name']);
38 //console.log(student.name);
39 //console.log(student2.age());
40 //console.log(student.age());
41
42
43
44
```

Below the editor, the TERMINAL panel is active, showing the command 'node student.js' being executed in a shell. The output of the script is displayed as follows:

```
at Function.executeUserEntryPoint [as runMain] (node:internal/modules/run_main:81:12)
at node:internal/main/run_main_module:18:47

Node.js v18.8.0
(base) siddheshbhalerao@Siddheshs-MacBook-Pro Module 2 % node student.js
0
20
0
0
20
0
20
(base) siddheshbhalerao@Siddheshs-MacBook-Pro Module 2 %
```

The status bar at the bottom indicates the current position is 'Ln 42, Col 1' and the file is encoded in 'UTF-8' with 'LF' line endings.

Reference :

1. <https://canvas.asu.edu/courses/132658/assignments/3526657>
2. <https://nodejs.org/en/download/>
3. <https://github.com/sbhaler3/Middleware-Assigments.git>