

## Lesson 6 Demo 4

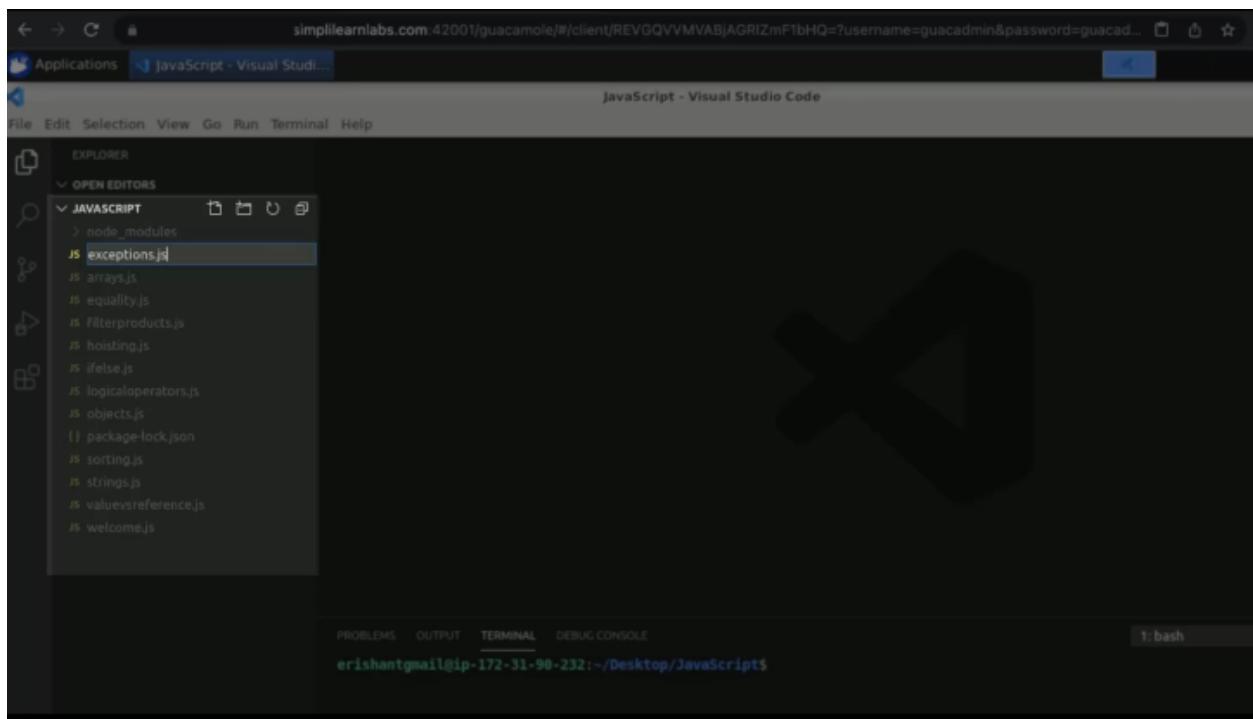
### Working with Try-Catch

**Objective:** To work with try-catch

**Prerequisites:** None

#### Steps to perform:

1. Create a file named 'exceptions.js'.



2. Add a function named 'getCashBack' with input as 'luckyNumber'.

```

    exceptions.js
1 function getCashBack(luckyNumber){
2
3
}

```

3. Create a cashbacks array with some random numbers.

```

    exceptions.js
1 function getCashBack(luckyNumber){
2 let cashBacks = [20, 34, 12, 44, 56, 67, 89, 90, 88];
3
}

```

4. Pass a return function.

```

    JS exceptions.js •
    JS exceptions.js > getCashBack
    1 function getCashBack(luckyNumber){
    2     let cashBacks = [20, 34, 12, 44, 56, 67, 89, 90, 88];
    3     return cashBacks[luckyNumber];
    4 }
  
```

The screenshot shows a Visual Studio Code interface with the 'exceptions.js' file selected in the Explorer sidebar. The code editor displays a function named 'getCashBack' that takes a parameter 'luckyNumber' and returns an element from an array of cash back amounts. The array includes values like 20, 34, 12, 44, 56, 67, 89, 90, and 88.

## 5. Add a console. Log statement.

```

    JS exceptions.js • ...
    JS exceptions.js > ...
    1 console.log("Cashback App Started");
    2
    3
    4 function getCashBack(luckyNumber){
    5     let cashBacks = [20, 34, 12, 44, 56, 67, 89, 90, 88];
    6     return cashBacks[luckyNumber];
    7 }
  
```

The screenshot shows the 'exceptions.js' file in Visual Studio Code with an additional line of code added at the top of the function: 'console.log("Cashback App Started");'. This line is intended to output a message to the browser's developer tools console when the application starts.

6. The second log statement should return 'Cashback app finished'.

```

    console.log("Cashback App Started");
    ...
    function getCashBack(luckyNumber){
        let cashBacks = [20, 34, 12, 44, 56, 67, 89, 90, 88];
        return cashBacks[luckyNumber];
    }
    ...
    console.log("Cashback App Finished");

```

7. Add a code with a log statement within a function as 'cashBackEarned'.

```

    console.log("Cashback App Started");
    ...
    function getCashBack(luckyNumber){
        let cashBacks = [20, 34, 12, 44, 56, 67, 89, 90, 88];
        return cashBacks[luckyNumber];
    }
    ...
    let cashBackEarned = getCashBack(3);
    console.log("cashBackEarned: " + cashBackEarned);
    ...
    console.log("Cashback App Finished");

```

## 8. Run the code.

The screenshot shows the Visual Studio Code interface with the following details:

- Explorer View:** Shows a tree structure of files under "OPEN EDITORS" and "JAVASCRIPT". The file "exceptions.js" is selected in the "OPEN EDITORS" section.
- Code Editor:** Displays the contents of "exceptions.js". The code defines a function "getCashBack" that logs "Cashback App Started", returns a value from an array of lucky numbers, and then logs "cashBackEarned".

```
JS exceptions.js X
JS exceptions.js > ...
1 console.log("Cashback App Started");
2
3
4 function getCashBack(luckyNumber){
5     let cashBacks = [20, 34, 12, 44, 56, 67, 89, 90, 88];
6     return cashBacks[luckyNumber];
7 }
8
9
10 let cashBackEarned = getCashBack(3);
11 console.log(`cashBackEarned: ${cashBackEarned}`);
12
13
14
15 console.log("Cashback App Finished");
16
```
- Terminal:** Shows the command "node exceptions.js" being run and its output:

```
erishant@gmail@ip-172-31-90-232:~/Desktop/JavaScript$ node exceptions.js
Cashback App Started
cashBackEarned: 44
Cashback App Finished
erishant@gmail@ip-172-31-90-232:~/Desktop/JavaScript$
```
- Status Bar:** Shows "Ln 11, Col 46 Spaces: 4" at the bottom right.

9. If you pass the number as 13, then it will show the following result.

The screenshot shows the VS Code interface with the code editor open to a file named 'exceptions.js'. The code defines a function 'getCashBack' that returns a value from an array based on the input 'luckyNumber'. An 'if' statement then checks if the returned value is 44, and if so, logs a message. The terminal below shows two runs of the script. In the first run, the lucky number is 13, so the cashback earned is 44, which is then printed. In the second run, the lucky number is 17, so the cashback earned is undefined, which is also printed. The terminal output is as follows:

```
erishant@gmail@ip-172-31-90-232:~/Desktop/JavaScript$ node exceptions.js
Cashback App Started
cashBackEarned: 44
Cashback App Finished
erishant@gmail@ip-172-31-90-232:~/Desktop/JavaScript$ node exceptions.js
Cashback App Started
cashBackEarned: undefined
Cashback App Finished
```

10. Add one if else loop.

```

EXPLORER          JS exceptions.js ×
OPEN EDITORS      JS exceptions.js
JAVA SCRIPTS
    node_modules
        arrays.js
        equality.js
        exceptions.js
        filterproducts.js
        hoisting.js
        ifelse.js
        logicaloperators.js
        objects.js
        package-lock.json
        sorting.js
        strings.js
        valuesreference.js
        welcome.js

JS exceptions.js > ⚡ getCashBack
1   console.log("Cashback App Started");
2
3
4   function getCashBack(luckyNumber){
5       let cashBacks = [20, 34, 12, 44, 56, 67, 89, 90, 88];
6       if(cashBacks[luckyNumber]){
7           return cashBacks[luckyNumber];
8       }else{
9           return 0;
10      }
11
12
13
14   let cashBackEarned = getCashBack(13);
15   console.log("cashBackEarned: " + cashBackEarned);
16
17
18
19   console.log("Cashback App Finished");
20

PROBLEMS   OUTPUT   TERMINAL   DEBUG CONSOLE
erishant@gmail@ip-172-31-90-232:~/Desktop/JavaScript$ node exceptions.js
Cashback App Started
cashBackEarned: 44
Cashback App Finished
erishant@gmail@ip-172-31-90-232:~/Desktop/JavaScript$ node exceptions.js
Cashback App Started
cashBackEarned: undefined
Cashback App Finished
erishant@gmail@ip-172-31-90-232:~/Desktop/JavaScript$ 

```

0 0 ▾ 0

Ln 9, Col 18 Spaces: 4

## 11. Re-run the program.

```

EXPLORER          JS exceptions.js ×
OPEN EDITORS      JS exceptions.js
JAVA SCRIPTS
    node_modules
        arrays.js
        equality.js
        exceptions.js
        filterproducts.js
        hoisting.js
        ifelse.js
        logicaloperators.js
        objects.js
        package-lock.json
        sorting.js
        strings.js
        valuesreference.js
        welcome.js

JS exceptions.js > ⚡ getCashBack
1   console.log("Cashback App Started");
2
3
4   function getCashBack(luckyNumber){
5       let cashBacks = [20, 34, 12, 44, 56, 67, 89, 90, 88];
6       if(cashBacks[luckyNumber]){
7           return cashBacks[luckyNumber];
8       }else{
9           return 0;
10      }
11
12
13
14   let cashBackEarned = getCashBack(13);
15   console.log("cashBackEarned: " + cashBackEarned);
16
17
18
19   console.log("Cashback App Finished");
20

PROBLEMS   OUTPUT   TERMINAL   DEBUG CONSOLE
Cashback App Finished
erishant@gmail@ip-172-31-90-232:~/Desktop/JavaScript$ node exceptions.js
Cashback App Started
cashBackEarned: undefined
Cashback App Finished
erishant@gmail@ip-172-31-90-232:~/Desktop/JavaScript$ node exceptions.js
Cashback App Started
cashBackEarned: 0
Cashback App Finished
erishant@gmail@ip-172-31-90-232:~/Desktop/JavaScript$ 

```

0 0 ▾ 0

Ln 9, Col 18 Spaces: 4

## 12. Create an object of an error with a message.

The screenshot shows a code editor in VS Code with the file `exceptions.js` open. The code defines a function `getCashBack` that logs "Cashback App Started", checks if a lucky number exists in an array of cash backs, and if not, creates an error object with the message "Inavlid Lucky Number". The output terminal shows the app starting, the cash back being undefined, and then the error message being logged.

```

    JS exceptions.js ●
    JS exceptions.js > ⚡ getCashBack
    1   console.log("Cashback App Started");
    2
    3
    4   function getCashBack(luckyNumber){
    5     let cashBacks = [20, 34, 12, 44, 56, 67, 89, 90, 88];
    6     if(cashBacks[luckyNumber]){
    7       return cashBacks[luckyNumber];
    8     }else{
    9       //return 0;
    10      let error = Error("Inavlid Lucky Number");
    11    }
    12  }
    13
    14
    15  let cashBackEarned = getCashBack("thirteen");
    16  console.log("cashBackEarned: "+cashBackEarned);
    17
    18
    19  console.log("Cashback App Finished");
    20
    21

    PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE
    Cashback App Finished
    erishant@gmail@ip-172-31-90-232:~/Desktop/JavaScript$ node exceptions.js
    Cashback App Started
    cashBackEarned: undefined
    Cashback App Finished
    erishant@gmail@ip-172-31-90-232:~/Desktop/JavaScript$ node exceptions.js
    Cashback App Started
    cashBackEarned: 0
    Cashback App Finished
    erishant@gmail@ip-172-31-90-232:~/Desktop/JavaScript$ ⌂
  
```

## 13. Use the keyword 'throw' the error.

The screenshot shows a code editor in VS Code with the file `exceptions.js` open. The code is identical to the previous one, but instead of creating an error object with `let error = Error("Inavlid Lucky Number");`, it uses the `throw` keyword to directly throw the error. The output terminal shows the app starting, the cash back being undefined, and then the error message being logged.

```

    JS exceptions.js X
    JS exceptions.js > ⚡ getCashBack
    1   console.log("Cashback App Started");
    2
    3
    4   function getCashBack(luckyNumber){
    5     let cashBacks = [20, 34, 12, 44, 56, 67, 89, 90, 88];
    6     if(cashBacks[luckyNumber]){
    7       return cashBacks[luckyNumber];
    8     }else{
    9       //return 0;
    10      throw error;
    11    }
    12  }
    13
    14
    15  let cashBackEarned = getCashBack("thirteen");
    16  console.log("cashBackEarned: "+cashBackEarned);
    17
    18
    19  console.log("Cashback App Finished");
    20
    21

    PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE
    Cashback App Finished
    erishant@gmail@ip-172-31-90-232:~/Desktop/JavaScript$ node exceptions.js
    Cashback App Started
    cashBackEarned: undefined
    Cashback App Finished
    erishant@gmail@ip-172-31-90-232:~/Desktop/JavaScript$ node exceptions.js
    Cashback App Started
    cashBackEarned: 0
    Cashback App Finished
    erishant@gmail@ip-172-31-90-232:~/Desktop/JavaScript$ ⌂
  
```

## 14. Run the program.

The screenshot shows the VS Code interface with the following details:

- Explorer View:** Shows a file tree with several JavaScript files under "OPEN EDITORS" and "JAVASCRIPT". The file "exceptions.js" is currently selected.
- Code Editor:** Displays the content of "exceptions.js". The code defines a function "getCashBack" that logs "Cashback App Started", checks if the input number is in an array of lucky numbers, and returns it or throws an error if it's invalid. It also logs the total cashback earned and the final message.
- Terminal:** Shows the command "1:bash" at the top right.
- Problems View:** A callout box highlights an error message: "Error: Invalid Lucky Number". The stack trace shows the error occurred at line 10:21 in "exceptions.js", which corresponds to the "return cashBacks[luckyNumber];" line. The stack trace continues through internal module loader functions and ends at "internal/main/run\_main\_module.js:17:47".
- Status Bar:** At the bottom right, it says "Ln 11, Col 21 Spaces: 4" and has a small icon.

## 15. Add a try block.

The screenshot shows the VS Code interface with the following details:

- EXPLORER:** Shows a file tree with several JavaScript files under the "JAVASCRIPT" folder.
- OPEN EDITORS:** Shows "exceptions.js" as the active editor.
- CODE:**

```

JS exceptions.js ●
JS exceptions.js > ...
1
2
3
4 function getCashBack(luckyNumber){
5     let cashBacks = [20, 34, 12, 44, 56, 67, 89, 90, 88];
6     if(cashBacks[luckyNumber]){
7         return cashBacks[luckyNumber];
8     }else{
9         //return 0;
10        let error = Error("Inavlid Lucky Number");
11        throw error;
12    }
13
14 try{
15     let cashBackEarned = getCashBack("thirteen");
16     console.log("cashBackEarned: "+cashBackEarned);
17 }
18
19
20
21 console.log("Cashback App Finished");
22

```
- PROBLEMS:** Shows an error message: "Error: Inavlid Lucky Number".
- TERMINAL:** Shows the command "erishant@gmail@ip-172-31-90-232:~/Desktop/JavaScript\$".
- STATUS BAR:** Shows "Ln 18, Col 2" and "Spaces: 4".

## 16. Add a catch block as well.

The screenshot shows the VS Code interface with the following details:

- EXPLORER:** Shows a file tree with several JavaScript files under the "JAVASCRIPT" folder.
- OPEN EDITORS:** Shows "exceptions.js" as the active editor.
- CODE:**

```

JS exceptions.js ●
JS exceptions.js > [0] <unknown>
1
2
3
4 function getCashBack(luckyNumber){
5     let cashBacks = [20, 34, 12, 44, 56, 67, 89, 90, 88];
6     if(cashBacks[luckyNumber]){
7         return cashBacks[luckyNumber];
8     }else{
9         //return 0;
10        let error = Error("Inavlid Lucky Number");
11        throw error;
12    }
13
14 try{
15     let cashBackEarned = getCashBack("thirteen");
16     console.log("cashBackEarned: "+cashBackEarned);
17 }
18 }catch[0]{
19
20 }
21
22

```
- PROBLEMS:** Shows an error message: "Error: Inavlid Lucky Number".
- TERMINAL:** Shows the command "erishant@gmail@ip-172-31-90-232:~/Desktop/JavaScript\$".
- STATUS BAR:** Shows "Ln 18, Col 8" and "Spaces: 4".

## 17. Pass a log message.

```

    JS exceptions.js •
    JS exceptions.js > ...
    1
    2
    3
    4 function getCashBack(luckyNumber){
    5     let cashBacks = [20, 34, 12, 44, 56, 67, 89, 90, 88];
    6     if(cashBacks[luckyNumber]){
    7         return cashBacks[luckyNumber];
    8     }else{
    9         //return 0;
    10        let error = Error("Inavlid Lucky Number");
    11        throw error;
    12    }
    13 }
    14
    15 try{
    16     let cashBackEarned = getCashBack("thirteen");
    17     console.log("cashBackEarned: "+cashBackEarned);
    18 }catch(e){
    19     console.log("Something went wrong");
    20 }
    21
    22
  
```

PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE

Error: Inavlid Lucky Number  
at getCashBack (/home/erishantgmail/Desktop/JavaScript/exceptions.js:10:21)  
at Object.<anonymous> (/home/erishantgmail/Desktop/JavaScript/exceptions.js:16:22)  
at Module.compile (internal/modules/cjs/loader.js:1138:30)  
at Object.Module.extensions.js (internal/modules/cjs/loader.js:1158:10)  
at Module.load (internal/modules/cjs/loader.js:986:32)  
at Function.Module.load (internal/modules/cjs/loader.js:879:14)  
at Function.executeUserEntryPoint [as runMain] (internal/modules/run\_main.js:71:12)  
at internal/main/run\_main\_module.js:17:47

erishantgmail@ip-172-31-90-232:~/Desktop/JavaScript\$

Ln 19, Col 38 Spaces: 4

## 18. Execute the code.

```

    JS exceptions.js •
    JS exceptions.js > ...
    1
    2
    3
    4 function getCashBack(luckyNumber){
    5     let cashBacks = [20, 34, 12, 44, 56, 67, 89, 90, 88];
    6     if(cashBacks[luckyNumber]){
    7         return cashBacks[luckyNumber];
    8     }else{
    9         //return 0;
    10        let error = Error("Inavlid Lucky Number");
    11        throw error;
    12    }
    13 }
    14
    15 try{
    16     let cashBackEarned = getCashBack("thirteen");
    17     console.log("cashBackEarned: "+cashBackEarned);
    18 }catch(e){
    19     console.log("Something went wrong "+e);
    20 }
    21
    22
  
```

PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE

at Object.Module.extensions.js (internal/modules/cjs/loader.js:1158:10)  
at Module.load (internal/modules/cjs/loader.js:986:32)  
at Function.Module.load (internal/modules/cjs/loader.js:879:14)  
at Function.executeUserEntryPoint [as runMain] (internal/modules/run\_main.js:71:12)  
at internal/main/run\_main\_module.js:17:47

erishantgmail@ip-172-31-90-232:~/Desktop/JavaScript\$ node exceptions.js  
Cashback App Started  
Something went wrong Error: Inavlid Lucky Number  
Cashback App Finished

erishantgmail@ip-172-31-90-232:~/Desktop/JavaScript\$

Ln 19, Col 44 Spaces: 4

