## -Javascript Assessment (3 hour 30 minutes)

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| **Learning Objectives** | * Build the Find Your Hat game from scratch. * Explain the steps behind building a JavaScript Application. |
| **Assessment** | * **Project**: Complete the assessment criteria in the project rubric. |

Welcome to the course assessment for the JS module!

In this session, you will complete the Find Your Hat project.

By the end of this session, you will be able to:

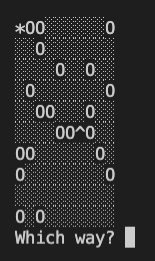
* Apply Javascript to build a web application (Find Your Hat game) from scratch.

### 1 Requirements

In the Javascript assessment, you need the following the following requirements:

1. Download and Install NodeJS here: <https://nodejs.org/en/download/>
2. Run **npm install prompt-sync** in the terminal / command prompt
3. Run **npm install clear-screen** in the terminal / command prompt

**Find your hat game application**



Requirements:

* Create a 10 X 10 Fields
* The character \* can be always at the default of position (0,0) when the user starts the game
* The controls for the character are:
  + Up = U or u key
  + Down = D or d key
  + Left = L or l key
  + Right = R or r key
* If a user entered an invalid key (e.g. p or t), output “Enter (u, d, l or r) and allow the user to enter again
* The number of holes generated should be lesser than the fields generated
* When the character drops into a hole, output “Sorry, you fell down a hole!” and the game ends
* When the character hits the boundaries, output “Out of bounds - Game End!” and the game ends
* When the character gets the hat, output “Congrats, you found your hat!” and and the game ends

### 3 Useful Link:

* [Getting User Input in Node.js](https://www.codecademy.com/articles/getting-user-input-in-node-js)
* [Create Block Elements](https://en.wikipedia.org/wiki/Block_Elements)
* [Javascript fill Method](https://www.w3schools.com/jsref/jsref_fill.asp)
* [Javascript Map Method](https://www.w3schools.com/jsref/jsref_map.asp)
* [Ways to populate Array in Javascript](https://medium.com/@wisecobbler/4-ways-to-populate-an-array-in-javascript-836952aea79f)
* [Nested For Loop](https://www.freecodecamp.org/news/nesting-for-loops-in-javascript/)
* [How to create 2D array](https://www.w3docs.com/snippets/javascript/how-to-create-a-two-dimensional-array-in-javascript.html)
* [Math.random() method](https://www.w3schools.com/js/js_random.asp)

### 4 Code Sample (Kick-Starter)

Create global variables and import prompt input from package (Please create your own global variables if required)

const prompt = require('prompt-sync')({sigint: true});

const clear = require('clear-screen');

const hat = '^';

const hole = 'O';

const fieldCharacter = '░';

const pathCharacter = '\*';

const row = 10;

const col = 10;