Lab Task

Task 1:

Create a program that collects and analyzes temperature data over a week. The program should provide insights such as the highest, lowest, and average temperatures. Use an array to store daily temperature readings (e.g., [20, 22, 19, 25, 23, 21, 24]).

Functions to Implement:

- addTemperature(temp): Adds a temperature for the day.
- getHighestTemperature(): Returns the highest temperature of the week.
- getLowestTemperature(): Returns the lowest temperature of the week.
- getAverageTemperature(): Calculates and returns the average temperature.

Task 2:

Build a system to manage participant registrations for an event, including adding participants, checking availability, and listing all registered participants. Use an array of participant objects (e.g., [{name: 'Alice', email: 'alice@example.com', ticketType: 'VIP'}]).

Functions to Implement:

- addParticipant(name, email, ticketType): Adds a new participant.
- checkAvailability(): Checks if the maximum capacity is reached.
- listParticipants(): Lists all registered participants.

Task 4:

Build a leaderboard for a gaming application, allowing players to be added, scores to be updated, and top players to be displayed. Use an array of player objects (e.g., [{name: 'John', score: 150}]).

Functions to Implement:

- addPlayer(name): Adds a new player.
- updateScore(name, score): Updates a player's score.
- getTopPlayers(): Returns the top players sorted by score.

Task 5:

Create a recipe management system that allows users to add and search for recipes by ingredient or name. Use an array of recipe objects (e.g., [{name: 'Pasta', ingredients: ['flour', 'water'], instructions: 'Mix and cook.'}]).

Functions to Implement:

- addRecipe(name, ingredients, instructions): Adds a new recipe.
- listRecipes(): Lists all recipes.
- searchRecipeByIngredient(ingredient): Searches for recipes containing a specific ingredient.

Task 6:

Correct the following code

1.	function capitalizeWords = (str) {
	return str.toLowerCase().split(' ').map(word => word[0].toUpperCase() + word.slice(1));}
	console.log(capitalizeWords("hello world")); // Expected: "Hello World"

2.	function isEvenOrOdd(num) {
	  if (num / 2) {
	  return
	  "Even";
	  } else {
	  return
	  "Odd";
	  }
	}
	console.log(isEvenOrOdd(4)); // Expected: "Even"
	console.log(isEvenOrOdd(3)); // Expected: "Odd"

3.	const findCharacterIndex = (str, char) => {
	  for (let i = 0; i < str.length; i++) {
	  if (str[i] = char) {
	  return i;
	  }
	  }
	  return -1;
	}
	console.log(findCharacterIndex("hello", "e")); // Expected: 1

4.	const person = { name: "John",

```
    age: 30
};

const printAge = function (person) => {
    console.log(person[age]);
}

printAge(person); // Expected: 30
```

Task 7:

Explain the functionality of following functions

1. includes()
2. every()
3. filter()
4. join()
5. some()
6. splice()