

Name: Md. Musfiq	ID: 211002007
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## Programming Fundamentals and Playwright Automation

### Part 1: Programming Fundamentals

**Task 1: Variables and Data Types - Define variables for name, age, height, and course enrollment.**

```
console.log("Student Information:");  
console.log(`Name: ${studentInfo.name}`);  
console.log(`Age: ${studentInfo.age}`);  
console.log(`Height: ${studentInfo.height} feet`);  
console.log(`Enrolled in Course: ${studentInfo.isEnrolledInCourse ? "Yes" :  
"No"}`);
```

#### Output:

Output:

```
Student Information:  
Name: Md. Musfiq  
Age: 25  
Height: 5.8 feet  
Enrolled in Course: Yes
```

**Task 2: Arrays or Lists - Create an array of 5 countries and print the first and last items.**

```
const countries = ["Bangladesh", "Afghanistan", "Palestine", "Iran", "Qatar"];  
const firstCountry = countries[0];  
const lastCountry = countries[countries.length - 1];  
console.log(`First Country: ${firstCountry}`);  
console.log(`Last Country: ${lastCountry}`);
```

#### Output:

Output:

```
First Country: Bangladesh  
Last Country: Qatar
```

### Task 3: Functions - Write a function to add two numbers. Write a function to find the largest number in a list.

```
function addNumbers(numbers) {
  if (numbers.length < 2) {
    throw new Error("The array must contain at least two numbers.");
  }
  return numbers[0] + numbers[1];
}

function findLargestNumber(numbers) {
  if (numbers.length === 0) {
    return null;
  }
  return Math.max(...numbers);
}

const numbers = [6, 14, 5, 11, 24, 98];
const sum = addNumbers(numbers);
console.log(`Sum of the first two numbers: ${sum}`);
const largestNumber = findLargestNumber(numbers);
console.log(`Largest number in the list: ${largestNumber}`);
```

#### Output:

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Output:

```
Sum of the first two numbers: 20
Largest number in the list: 98
```

### Task 4: Bonus Challenge - Write a function to calculate the factorial of a number.

```
function calculateFactorial(number) {
  if (number < 0) {
    throw new Error("Factorial is not defined for negative numbers.");
  }
  if (number === 0 || number === 1) {
    return 1;
  }
  let factorial = 1;
  for (let i = 2; i <= number; i++) {
    factorial *= i;
  }
  return factorial;
}
```

```
}  
const number = 7;  
const factorial = calculateFactorial(number);  
console.log(`Factorial of ${number}! is: ${factorial}`);
```

### Output:

Output:

```
Factorial of 7! is: 5040
```

## Part 2: Getting Started with Playwright(Setup the environment & Playwright Tests)

### 1. Install Node.js LTS version

### 2. Create a New Project

- mkdir playwright-automation-project
- cd playwright-automation-project
- npm init -y

### 3. Install Playwright

- npm install playwright

### 4. Running Browsers

- npx playwright install

### 5. Create a Test File

- touch sauceDemoTest.spec.ts

### 6. Run Tests

- npx playwright test

## Part 3: Write 5 test cases on the given website Sauce Demo and Click on the URL

- Five Manual Test Case Excel Sheet Link:

[https://docs.google.com/spreadsheets/d/1I6m5AVQCjLq7TZHKZj3a1gi-1VEsPS\\_8PWaDiKGj3Hw/edit?usp=sharing](https://docs.google.com/spreadsheets/d/1I6m5AVQCjLq7TZHKZj3a1gi-1VEsPS_8PWaDiKGj3Hw/edit?usp=sharing)

- Automation Testing Code for [Sauce Demo](#) Website:

### Code:

```
import { test } from '@playwright/test';

async function performActionWithDelay(action, delay = 2000) {
  await action;
  await new Promise(resolve => setTimeout(resolve, delay));
}

test('sauce demo test', async ({ page }) => {
  test.setTimeout(60000);

  await page.goto('https://www.saucedemo.com/');
  await performActionWithDelay(Promise.resolve(), 2000);

  await performActionWithDelay(
    page.locator('#user-name').fill('standard_user')
  );
  await
performActionWithDelay(page.locator('#password').fill('secret_sauce'));
  await performActionWithDelay(page.locator('#login-button').click());

  await performActionWithDelay(
    page.locator('.product_sort_container').selectOption('lohi')
  );
  await performActionWithDelay(
    page.locator('#add-to-cart-sauce-labs-bolt-t-shirt').click()
  );
  await performActionWithDelay(
    page.locator('#add-to-cart-sauce-labs-bike-light').click()
  );
  await performActionWithDelay(
    page.locator('#add-to-cart-sauce-labs-fleece-jacket').click()
  );
  await performActionWithDelay(
    page.locator('#add-to-cart-sauce-labs-onesie').click()
  );
});
```

```
    await performActionWithDelay(  
        page.locator('#remove-sauce-labs-bike-light').click()  
    );  
  
    await performActionWithDelay(page.click('#shopping_cart_container'));  
    await performActionWithDelay(page.click('button[name="checkout"]'));  
  
    await performActionWithDelay(page.locator('#first-name').fill('sauce'));  
    await performActionWithDelay(page.locator('#last-name').fill('demo'));  
    await performActionWithDelay(page.locator('#postal-code').fill('1212'));  
    await performActionWithDelay(page.locator('#continue').click());  
    await performActionWithDelay(page.locator('#finish').click());  
    await performActionWithDelay(page.locator('#back-to-products').click());  
  
    await  
performActionWithDelay(page.locator('#react-burger-menu-btn').click());  
    await  
performActionWithDelay(page.locator('#logout_sidebar_link').click());  
  
    await page.pause();  
});
```