

## **Tasks:**

- 1. Write a function createCounter that returns another function. The returned function should increment a counter each time**
- 2. Create a recursive function factorial that takes a number n and returns its factorial. Test the function with various values**
- 3. Write a function memoizedFactorial that calculates the factorial of a number and caches results to improve performance on repeated calls**
- 4. Write a function constructor Person that takes name and age as parameters and assigns them to the instance. Create an instance of Person and log the properties**
- 4.2. add a method greet to the Person constructor that logs a greeting message including the person's name. Test this by calling greet on an instance of Person.**
- 4.3. Refactor the Person constructor by moving the greet method to Person.prototype. Create multiple instances and test that they all share the same greet method (i.e., it doesn't duplicate for each instance).**

- 5. Write a factory function createUser that can generate Admin and Guest users based on a configuration object. Each type of user should have unique methods (admin with manageUsers, guest with viewContent).**

Creating an Admin user

```
var adminUser = createUser({ type: 'Admin', name: 'Alice' });
```

```
adminUser.manageUsers();
```

Expected output: "Alice is managing users."

Creating a Guest user

```
var guestUser = createUser({ type: 'Guest', name: 'Bob' });
```

```
guestUser.viewContent();
```

Expected output: "Bob is viewing content."