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Lab Assignment – 6

Question 1: Write a Java program that defines a method to calculate the factorial of a given integer. The program should take an integer as an argument and return its factorial. Use a recursive method to implement this.

INPUT:

```
public class FactorialCalculator {

   // Recursive method to calculate factorial

   public static long calculateFactorial(int n) {

      if (n == 0 || n == 1) {

         return 1; // Base case: factorial of 0 and 1 is 1

      } else {

         return n * calculateFactorial(n - 1); // Recursive case

      }

   }



   public static void main(String[] args) {

      int number = 5; // Change this to the integer you want to calculate the factorial for

      long factorial = calculateFactorial(number);



      System.out.println("Factorial of " + number + " is: " + factorial);

   }

}
```

Output:

Factorial of 5 is: 120

Question 2: Define a Java class called "Employee" with methods for setting and getting employee information (name, ID, salary). Create instances of the class and call the methods.

INPUT:

```
public class Employee {
    // Instance variables to store employee information
    private String name;
    private int id;
    private double salary;

    // Constructor to initialize employee information
    public Employee(String name, int id, double salary) {
        this.name = name;
        this.id = id;
        this.salary = salary;
    }

    // Method to set employee name
    public void setName(String name) {
        this.name = name;
    }

    // Method to get employee name
    public String getName() {
        return name;
    }

    // Method to set employee ID
    public void setId(int id) {
        this.id = id;
    }

    // Method to get employee ID
```

```
    public int getId() {
        return id;
    }

    // Method to set employee salary
    public void setSalary(double salary) {
        this.salary = salary;
    }

    // Method to get employee salary
    public double getSalary() {
        return salary;
    }

    public static void main(String[] args) {
        // Create an instance of the Employee class
        Employee employee1 = new Employee("John Doe", 12345, 50000.0);

        // Call methods to set and get employee information
        System.out.println("Employee Name: " + employee1.getName());
        System.out.println("Employee ID: " + employee1.getId());
        System.out.println("Employee Salary: " + employee1.getSalary());

        // Update employee information
        employee1.setSalary(55000.0);

        // Display updated salary
        System.out.println("Updated Employee Salary: " + employee1.getSalary());
    }
}
```

OUTPUT:

```
Employee Name: John Doe
```

Employee ID: 12345

Employee Salary: 50000.0

Updated Employee Salary: 55000.0