slip22

```
class s22q1 {
   public static long fact(int n) {

      if (n == 0) {
         return 1;
      }

      return n * fact(n - 1);
   }

   public static void main(String[] args) {

      int num = 5;



      if (num< 0) {
         System.out.println("Factorial is not defined for negative numbers.");
      } else {

         long result = fact(num);
         System.out.println("Factorial of " + num + " is: " + result);
      }
   }
}
```

```
import java.io.File;
import java.io.IOException;

public class s22q2 {

    public static void main(String[] args) {

        String filePath = "file1.txt";
        String newFilePath = "file5.txt";
        createFile(filePath);
        displayFilePath(filePath);
        renameFile(filePath, newFilePath);
        deleteFile(newFilePath);
    }


    public static void createFile(String filePath) {
        try {
            File file = new File(filePath);

            if (file.createNewFile()) {
                System.out.println("File created: " + file.getName());
```

```
        } else {
            System.out.println("File already exists.");
        }
    } catch (IOException e) {
        System.out.println("An error occurred while creating the file: " + e.getMessage());
    }
}

public static void displayFilePath(String filePath) {
    File file = new File(filePath);
    if (file.exists()) {
        System.out.println("File path: " + file.getAbsolutePath());
    } else {
        System.out.println("File does not exist.");
    }
}

public static void renameFile(String oldFilePath, String newFilePath) {
    File oldFile = new File(oldFilePath);
    File newFile = new File(newFilePath);
    if (oldFile.exists()) {
        if (oldFile.renameTo(newFile)) {
            System.out.println("File renamed to: " + newFile.getName());
        } else {
```

```
            System.out.println("Failed to rename the file.");
        }
    } else {
        System.out.println("File to rename does not exist.");
    }
}


public static void deleteFile(String filePath) {
    File file = new File(filePath);
    if (file.exists()) {
        if (file.delete()) {
            System.out.println("File deleted: " + file.getName());
        } else {
            System.out.println("Failed to delete the file.");
        }
    } else {
        System.out.println("File does not exist.");
    }
}
}
```

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class StringRepeater:

```
    def __init__(self, string):

        self.string = string

    def __mul__(self, n):

        if isinstance(n, int) and n >= 0:
            return self.string * n
        else:
            raise ValueError("The multiplier must be a non-negative integer.")

user_string = input("Enter a string: ")
n = int(input("Enter a number: "))

string_repeater = StringRepeater(user_string)

try:
  result = string_repeater * n  # Use the overloaded * operator
  print("Repeated String:", result)
except ValueError as e:
  print("Error:", e)
```

```
def bubble_sort(arr):
    n = len(arr)
```

```
    for i in range(n):

        swapped = False

        for j in range(0, n - i - 1):

            if arr[j] > arr[j + 1]:

                arr[j], arr[j + 1] = arr[j + 1], arr[j]
                swapped = True

        if not swapped:
            break

sample_list = [64, 34, 25, 12, 22, 11, 90]
print("Original list:", sample_list)

bubble_sort(sample_list)
print("Sorted list:", sample_list)
```