

LAB # 1

1. Write a program that initialize five different strings using all the above mentioned ways, i.e., a)string literals b)new keyword also use intern method and show string immutability.

Input

```
public class StringInitialization {  
    public static void main(String[] args) {  
        String str1 = "Hello";  
        String str2 = "World";  
  
        String str3 = new String("Hello");  
        String str4 = new String("World");  
  
        String str5 = str3.intern();  
  
        System.out.println("String 1: " + str1);  
        System.out.println("String 2: " + str2);  
        System.out.println("String 3: " + str3);  
        System.out.println("String 4: " + str4);  
        System.out.println("String 5 (interned): " + str5);  
  
        String original = "Immutable";  
        String modified = original.concat(" String");  
  
        System.out.println("Original String: " + original);  
        System.out.println("Modified String: " + modified);  
    }  
}
```

Output

Output:

```
String 1: Hello  
String 2: World  
String 3: Hello  
String 4: World  
String 5 (interned): Hello  
Original String: Immutable  
Modified String: Immutable String
```

2. Write a program to convert primitive data type Double into its respective wrapper object

Input

```
public class DoubleToWrapper {  
    public static void main(String[] args) {  
        double primitive = 10.5;  
        Double wrapped = new Double(primitive);  
        System.out.println("Primitive double: " + primitive);  
        System.out.println("Wrapped Double : " + wrapped);  
    }  
}
```

Output

Output:

Primitive double: 10.5

Wrapped Double : 10.5

3. Write a program that initialize five different strings and perform the following operations. a. Concatenate all five strings. b. Convert fourth string to uppercase. c. Find the substring from the concatenated string from 8 to onward

Input

```
public class StringOperations {  
    public static void main(String[] args) {  
        String str1 = "Hello";  
        String str2 = "computer";  
        String str3 = "Java";  
        String str4 = "python";  
        String str5 = "C++";  
        String concatenatedString = str1 + str2 + str3 + str4 + str5;  
        System.out.println("Concatenated String: " + concatenatedString);  
        String upperCaseStr4 = str4.toUpperCase();  
        System.out.println("Fourth String in Uppercase: " + upperCaseStr4);  
        String substring = concatenatedString.substring(8);  
        System.out.println("Substring from index 8 onward: " + substring);  
    }  
}
```

Output

Output:

Concatenated String: HellocomputerJavapythonC++

Fourth String in Uppercase: PYTHON

Substring from index 8 onward: puterJavapythonC++

4. You are given two strings word1 and word2. Merge the strings by adding letters in alternating order, starting with word1. If a string is longer than the other, append the additional letters onto the end of the merged string. Return the merged string. Example: Input: word1 = "abc", word2 = "pqr" Output: "apbqcr" Explanation: The merged string will be merged as so: word1: a b c word2: p q r merged: a p b q c r

Input

```

public class MergeStrings {

    public static void main(String[] args) {
        String word1 = "abc";
        String word2 = "pqr";

        String mergedString = mergeAlternately(word1, word2);
        System.out.println("Merged String: " + mergedString);
    }

    public static String mergeAlternately(String word1, String word2) {
        StringBuilder merged = new StringBuilder();
        int length1 = word1.length();
        int length2 = word2.length();
        int maxLength = Math.max(length1, length2);

        for (int i = 0; i < maxLength; i++) {
            if (i < length1) {
                merged.append(word1.charAt(i));
            }
            if (i < length2) {
                merged.append(word2.charAt(i));
            }
        }

        return merged.toString();
    }
}

```

Output

Output:

Merged String: apbqcr

5. Write a Java program to find the minimum and maximum values of Integer, Float, and Double using the respective wrapper class constants.

Input

```
public class MinMaxValues {  
    public static void main(String[] args) {  
        int minInt = Integer.MIN_VALUE;  
        int maxInt = Integer.MAX_VALUE;  
        float minFloat = Float.MIN_VALUE;  
        float maxFloat = Float.MAX_VALUE;  
        double minDouble = Double.MIN_VALUE;  
        double maxDouble = Double.MAX_VALUE;  
        System.out.println("Integer Min Value: " + minInt);  
        System.out.println("Integer Max Value: " + maxInt);  
        System.out.println("Float Min Value: " + minFloat);  
        System.out.println("Float Max Value: " + maxFloat);  
        System.out.println("Double Min Value: " + minDouble);  
        System.out.println("Double Max Value: " + maxDouble);  
    }  
}
```

Output

Output:

```
Integer Min Value: -2147483648  
Integer Max Value: 2147483647  
Float Min Value: 1.4E-45  
Float Max Value: 3.4028235E38  
Double Min Value: 4.9E-324  
Double Max Value: 1.7976931348623157E308
```