📝 DAY 10 – STRINGS in Java

Class Programs → 4

Assignment Programs → 4

⭐ 1. What is a String?

A String is a sequence of characters enclosed in double quotes " ".

Examples:

```
String s = "Hello";
String name = "Rohit";
```

Important:

String is a class in Java, not a primitive datatype.

Strings are immutable → values cannot be changed once created.

⭐ 2. Ways to Create Strings

Method 1: Using String literal

```
String s = "Java";
```

Method 2: Using new keyword

```
String s = new String("Java");
```

⭐ 3. Common String Methods

Method	Description
length()	Returns number of characters
charAt(index)	Returns character at index
toUpperCase()	Converts to uppercase
toLowerCase()	Converts to lowercase
equals()	Checks equality
equalsIgnoreCase()	Case-insensitive equality
concat()	Joins two strings

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⭐⭐ CLASS PROGRAM – 1

Program: Read a string and print length

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Pseudo Code

```
Start
Read string s
len = s.length()
Print len
End
```

Flow

1. Input string

2. Find its length

3. Display output

Variables

s → input string

len → stores length

Program

```
import java.util.Scanner;

class StringLength {
   public static void main(String args[]) {

      Scanner sc = new Scanner(System.in);
      System.out.print("Enter a string: ");
      String s = sc.nextLine();

      int len = s.length();
      System.out.println("Length = " + len);
   }
}
```

Output Example

```
Enter a string: Hello
Length = 5
```

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⭐ ⭐ CLASS PROGRAM – 2

Program: Convert string to uppercase and lowercase

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Pseudo Code

Start
Read s
Print s.toUpperCase()
Print s.toLowerCase()
End

Flow

Input string

Convert to upper

Convert to lower

Program

```
import java.util.Scanner;

class StringCase {
   public static void main(String args[]) {

      Scanner sc = new Scanner(System.in);

      System.out.print("Enter a string: ");
      String s = sc.nextLine();

      System.out.println("Uppercase: " + s.toUpperCase());
      System.out.println("Lowercase: " + s.toLowerCase());
   }
}
```

Output

```
Enter a string: Java
Uppercase: JAVA
Lowercase: java
```

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⭐ ⭐ CLASS PROGRAM – 3

Program: Compare two strings (equals & equalsIgnoreCase)

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Pseudo Code

Start
Read s1, s2
If s1.equals(s2): exact match
If s1.equalsIgnoreCase(s2): case-insensitive match
End

Flow

Compare strings

Display results

Variables

s1, s2 → input strings

Program

```
import java.util.Scanner;

class StringCompare {
    public static void main(String args[]) {

        Scanner sc = new Scanner(System.in);

        System.out.print("Enter first string: ");
        String s1 = sc.nextLine();

        System.out.print("Enter second string: ");
        String s2 = sc.nextLine();
```

```
        if (s1.equals(s2))
            System.out.println("Exact Match");
        else if (s1.equalsIgnoreCase(s2))
            System.out.println("Match (Ignore Case)");
        else
            System.out.println("Not Matching");
    }
}
```

Output Example

```
Enter first string: Java
Enter second string: java
Match (Ignore Case)
```

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⭐ ⭐ CLASS PROGRAM – 4

Program: Count vowels in a string

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Pseudo Code

```
Start
Read s
count = 0
Loop each character:
   If vowel → count++
Print count
End
```

Flow

1. Read string

2. Traverse characters

3. Count only vowels

Variables

s → input

count → number of vowels

ch → each character

Program

```
import java.util.Scanner;

class CountVowels {
    public static void main(String args[]) {

        Scanner sc = new Scanner(System.in);

        System.out.print("Enter a string: ");
        String s = sc.nextLine();

        int count = 0;

        for (int i = 0; i < s.length(); i++) {
            char ch = s.charAt(i);

            if ("AEIOUaeiou".indexOf(ch) != -1)
                count++;
        }

        System.out.println("Vowel Count = " + count);
    }
}
```

Output Example

Enter a string: Education

Vowel Count = 5

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⭐ ⭐ ⭐ ASSIGNMENT PROGRAMS – 4

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⭐ Assignment – 1

Program: Count consonants in a string

```
class CountConsonants {
   public static void main(String args[]) {

      String s = "HelloWorld";
      int count = 0;

      for (int i = 0; i < s.length(); i++) {
         char ch = s.charAt(i);

         if (Character.isLetter(ch) && "AEIOUaeiou".indexOf(ch) == -1)
            count++;
      }

      System.out.println("Consonants = " + count);
   }
}
```

Output

Consonants = 7

⭐ Assignment – 2

Program: Count digits in a string

```
class CountDigitsInString {
   public static void main(String args[]) {

      String s = "a1b2c3d4";
      int count = 0;

      for (int i = 0; i < s.length(); i++) {
         if (Character.isDigit(s.charAt(i)))
            count++;
      }

      System.out.println("Digits = " + count);
   }
}
```

Output

```
Digits = 4
```

⭐ Assignment – 3

Program: Reverse a string

```
class ReverseString {
   public static void main(String args[]) {

      String s = "JAVA";
      String rev = "";

      for (int i = s.length() - 1; i >= 0; i--) {
         rev = rev + s.charAt(i);
      }

      System.out.println("Reversed = " + rev);
   }
}
```

Output

Reversed = AVAJ

⭐ Assignment – 4

Program: Check if string is palindrome (same forward & backward)

```
class PalindromeString {
   public static void main(String args[]) {

      String s = "MADAM";
      String rev = "";

      for (int i = s.length() - 1; i >= 0; i--) {
         rev = rev + s.charAt(i);
      }

      if (s.equals(rev))
         System.out.println("Palindrome");
      else
         System.out.println("Not Palindrome");
   }
}
```

Output

Palindrome