

Assignment- 5

Part -A

Que-1) Difference between default, parameterized, and copy constructors.

Default constructor - Default constructor is a constructor that takes no parameter.

Default constructor is used to initialize the object with default values.

Java provide default constructor automatically if you don't write any constructor. Once you create any constructor, Java won't create the default constructor.

Parameterized constructor - Parameterized constructor is a constructor that take parameters.

It is used to initialize object with user values while creating object.

Java dont provide parameterized constructor automatically if you don't write any constructor.

Copy Constructor - A copy constructor is a constructor that create new object by copying the data of an existing object of the same class.

it is used to create duplicate of object.

java dont provide copy constructor by default.

Que-2) What is the use of the this keyword?

this is a reference variable that refer to the current object of a class.

It is used to differentiate instance variable from local variables in constructor.

It is used to call Current object, constructor, variable, method.

Que-3) What is the use of the super keyword?

super is a reference variable that refers to the parent class object.

It is used to call parent object constructor, method, variable.
it cannot be used in static area.

Que-4) What is a static keyword used for?

Static keyword belongs to the class, not to object. to access static data, there is no need to create the object. It can be accessed using class name.

Static keyword is applicable to variable, method, block, and inner class.

If a variable is declared as a static, only one copy is created, and it is shared among all objects of a class.

if method is declared as static, method is loaded at a class loading time. It only can access a static data, and it cannot be overridden.

If a block is static, then it will execute once at when the class is loaded. And it is used to initialize static data.

Que-5) What are static blocks and static methods?

Static block - Static block is a block of code that execute once when class is loaded into memory.

it is executed before main method.

it is used to initialize static data.
it cannot be accessed non-static member.

Static method - Static method belong to the class. It can be accessed by class name without creating object.
It can only access static data.
This and super keyword cannot be used inside static method.
Static method cannot be overridden, but it can method hiding.

Part -B

Que-1) Write a program to find sum of n natural numbers.

```
import java.util.Scanner;
public class SumOfNaturalNum {
    public static void main(String[] args){
        Scanner sc = new Scanner(System.in);

        System.out.println("Enter a N : ");
        int n = sc.nextInt();
        int sum = n*(n+1)/2;

        System.out.println("The Sum of " + n + " Natural Numbers : " +
sum);
    }
}
```

Output -

```
Enter a N :
10
The Sum of 10 Natural Numbers : 55
```

Que-2) Write a program to reverse a String.

```
import java.util.Scanner;

public class ReverseString {
    public static void main(String[] ar) {
        Scanner sc = new Scanner(System.in);

        System.out.println("Enter a String : ");
        String str = sc.next();

        String reversed = new
StringBuilder(str).reverse().toString();

        System.out.println("Reversed String : " + reversed);
    }
}
```

Output -

```
Enter a String :
hello
Reversed String : olleh
```

Que-3) Write a program to check if a String is palindrome.

```

import java.util.Scanner;
public class IsPalindromeString {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);

        System.out.print("Enter a String : ");
        String str = sc.next();

        String reversed = new
StringBuilder(str).reverse().toString();

        if(str.equals(reversed))
            System.out.println("Palindrome !!");
        else
            System.out.println("Not Palindrome !!");

    }
}

```

Output -

```

Enter a String : madam
Palindrome !!

```

Que-4) Write a program to count vowels and consonants in a String.

```

import java.util.Scanner;

public class CountVowelConsonant {

    public static void main(String[] args) {

        Scanner sc = new Scanner(System.in);
        System.out.println("Enter a String : ");
        String str = sc.nextLine();

        int vowelCount = 0;
        int cosntCount = 0;

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

            if (!((ch >= 'a' && ch <= 'z') || (ch >= 'A' && ch <=
'Z')))
                continue;

            ch = Character.toLowerCase(ch);

            if (ch == 'a' || ch == 'i' || ch == 'o' || ch == 'u' ||
ch == 'e')
                vowelCount++;
            else
                cosntCount++;

        }

        System.out.println("VowelCount : " + vowelCount +
"\nConsantCount : " + cosntCount);
    }
}

```

```
}
```

Output -
Enter a String :
Yogesh
VowelCount : 2
ConsantCount : 4

Que-5) Write a program to count words in a sentence.

```
import java.util.Scanner;

class CountWord {

    public static void main(String[] args) {

        Scanner sc = new Scanner(System.in);

        System.out.println("Enter a Sentence : ");
        String sen = sc.nextLine();

        String[] strArr = sen.split("\\s+");
        System.out.println("CountWord : " + strArr.length);

    }
}
```

Output -
Enter a Sentence :
java is object-orient programming language
CountWord : 5

Github Link -
https://github.com/YogeshPathade01/Java_Coding_Questtions.git