Group A

1. What is the String class in Java? Is String a data type?
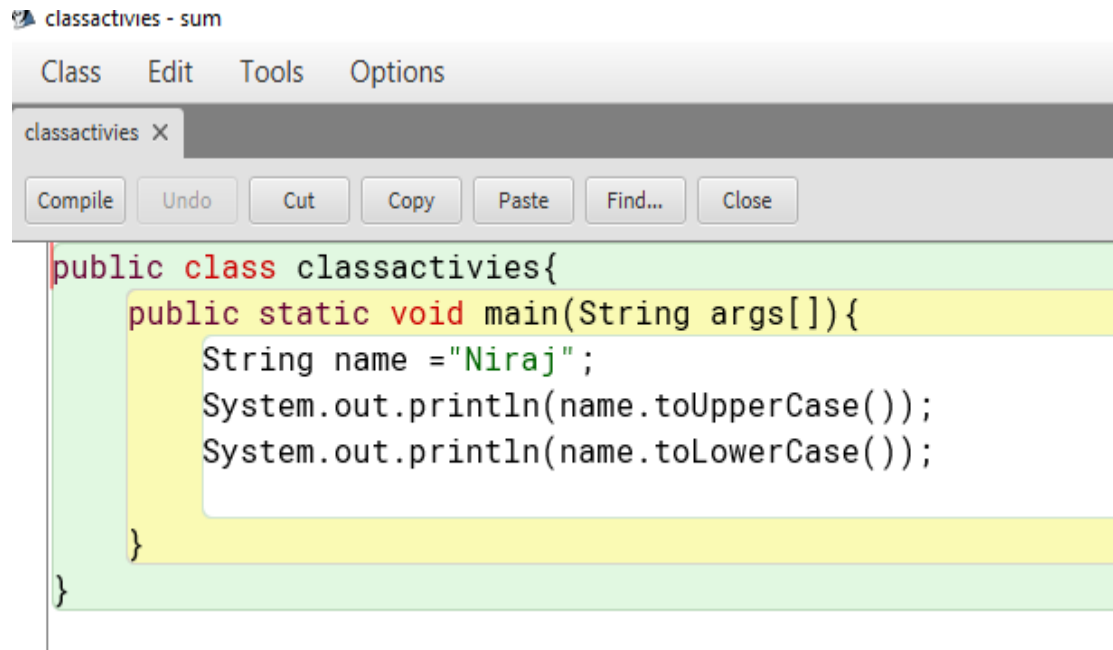   - ➤ String is used to store texts and the characters will be surrounded by double quotes.
   - ➤ Yes is a string a data type.
2. How can you make a String upper case or lower case in Java?
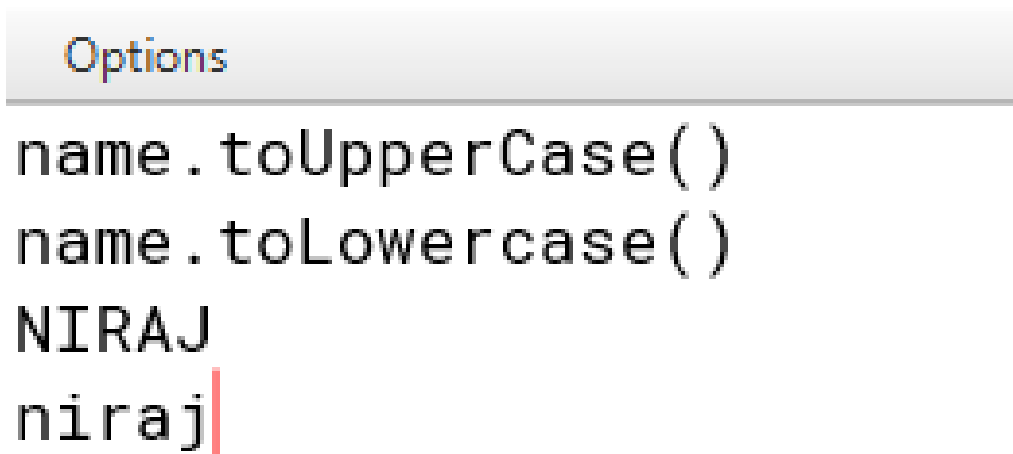   - ➤ We can make a string upper case by using toUpperCase() and to lower case by using to lowercase().

➢Examples:

```
classactivies - sum

Class    Edit    Tools    Options

classactivies ✕

Compile   Undo   Cut   Copy   Paste   Find...   Close

public class classactivies{
    public static void main(String args[]){
        String name ="Niraj";
        System.out.println(name.toUpperCase());
        System.out.println(name.toLowerCase());

    }
}
```

Output

```
BlueJ: Terminal Window - sum

Options

name.toUpperCase()
name.toLowercase()
NIRAJ
niraj
```

3.Can you use Stringg in switch case in java?Explain it briefly.

➢ Yes , we can use string in switch case in java.

```java
public class data{
    public static void main(String args[]){
        //String name = "Niraj";
        //System.out.println(name.toUpperCase());
        //System.out.println(name.tolowerCase());
        String color ="red";
        switch(color){
            case "red":
            System.out.println("yes this is red");
            break;
            case"blue":
            System.out.println("This is blue");
            break;
        }
    }
}
```

Output

```
yes this is red
```

4.Explain different types of conditional statement in java.

➢The different types of conditional statement in java are:

a. If statement

b. If else statement

c. If else if statement

d. Switch statement

```java
//if statement
public class qw{
    public static void main(String args[]){
        if(30 > 15 ){
            System.out.println("30 is greater than 15");
        }

    }
}
```

Output

```
30 is greater than 15
```

5. What is the value of the variable num after the following is Executed?

o int k = 5;

o int num = 0;

o int num1 = num + k * 2;

o int num2 = num + k * 2;

Are the values num1 and num2 equal after the last statement?

```java
public class ho{
    public static void main(String args[]){
        int k=5;
        int num = 0;
        int num1= num + k * 2;
        int num2 = num + k *2;
        System.out.println("The first number is = " +num1);
        System.out.println("The second is = "+num2);
    }
}
```

Output

```
The first number is = 10
The second is = 10
```

6.How do you split a string in Java?

```java
public class qwe{
    public static void main(String args[]){
    String n = "My name is Niraj Chaudhary";
    String[] sample = n.split("\\s");
    for(String w:sample){
        System.out.println(w);
    }
    }
}
```

```
My
name
is
Niraj
Chaudhary
```

7. How do you check if two Strings are equal in Java?

```java
public class op{
    public static void main(String args[]){
        String First = "World";
        String Second = "World";
        System.out.println(First==Second);
    }
}
```

Output

BlueJ: Terminal Window - sum

Options

```
true
```

Group B

1. Find the difference between Beth's age (57) and Tom's age (34).

```java
public class hello{
    public static void main(String args[]){
        int bethage=57;
        int tomage=34;
        int difference=bethage-tomage;
        System.out.println("The differnce between Beth's age and tom's age is"+difference);
    }
}
```

Output

```
The differnce between Beth's age and tom's age is23
```

2Develop a system to store your name as variable.

```java
public class qwe{
    public static void main(String args[]){
    String Niraj = "20";
    int chaudhary = 36;
    int mid = Integer.parseInt(Niraj);
    int sum = chaudhary + mid;
    System.out.println("The result is :" +sum);
    }
    }
```

The result is :56

3. Create the above java program in the java environment and then

modify the program to use the following statements. Note down

the response to each. Do they differ from what you would expect?

☑ boolean result = true && true;

☑ boolean result = true && false || true;

☑ boolean result = false && false || true;

☑ boolean result = false && 0;

☑ boolean result = !(false) && true;

boolean result = !(true && !(false &&

 false));

 boolean result = (10 > 14) and (4 == 5);

 boolean result = true && 5;

 boolean result = (3 * 4) != (14 - 2) && ('C' >= 'D');

boolean result = (12 * 2) == (3 * 8);

 boolean result = (14 * 2) != (3 * 8);

```java
public class qwe{
    public static void main(String args[]){
        System.out.println(true&&true);
        System.out.println(true&&false);
        System.out.println(!(false&&true));
        System.out.println(!(true&&!(false&&false)));
        System.out.println((10>14)&&(4==5));
        System.out.println((3*4)!=(14-2)&&('C'>='D'));
        System.out.println((12*2)==(3*8));
        System.out.println((14*2)!=(3*8));
    }
}
```

```
true
false
true
false
false
false
true
true
```

4.Find the difference between 7 factorial and 5 factorial.

```java
public class hey {
    public static void main(String args[]){
        int n=1;
        for (int i=1;i<=7;i++){
            n=n*i;
        }
        int m=1;
        for(int j=1;j<=5;j++){
            m=m*j;
        }
         System.out.println(n);
        System.out.println(m);
        int o=n-m;
        System.out.println("the difference between7 factorial and 5 factorial is"+o);

    }
}
```

Output

```
Options
5040
120
the difference between7 factorial and 5 factorial is4920
```

7. Write a java program in which:

a) The user enters either 'A', 'B', or 'C'. If 'A' is entered, the program should display the word 'Apple'; if 'B' is entered, it displays 'Banana'; and if 'C' is entered, it displays 'Coconut'. Use nested if statements for this.

```java
public class dsa{
    public static void main(String [] args){
        Scanner a=new Scanner(System.in);
        System.out.println("Enter A");
        String letter1=a.nextLine();
        if (letter1.equals("A")){
            System.out.println("Apple");
            Scanner b=new Scanner(System.in);
            System.out.println("Enter B");
            String letter2=b.nextLine();
        if (letter2.equals("B")){
            System.out.println("Banana");
            Scanner c=new Scanner(System.in);
            System.out.println("Enter C");
            String letter3=c.nextLine();
        if (letter3.equals("C"))
            System.out.println("Coconut");
        }else{

    }

}
}
}
```

Output

15
Enter A

7c) A student enters the number of college credits earned. If the number of credits is greater than or equal to 90, 'Senior Status' is displayed; if greater than or equal to 60, 'Junior Status' is displayed; if greater than or equal to 30,'Sophomore Status' is displayed; else, 'Freshman Status' is displayed.

```java
import java.util.Scanner;
public class world{
    public static void main(String [] args){
        Scanner x=new Scanner(System.in);
        System.out.println("Enter the number of your college credits");
        int age=x.nextInt();
        if (age>=90){
            System.out.println("Senior Status");
        } else if (age>=60){
            System.out.println("Junior Status");
        } else if (age>=30){
            System.out.println("Sophomore Status");
        } else{
            System.out.println("Freshman Status");
        }
    }
}
```

Output

```
14
Freshman Status
```

Group C

8. Bruno Mars just appeared his examination and got 75%. He goes to his tutor and asks his grade.

Now being a tutor you need to develop a program which tells his grade.

```java
public class ac{
public static void main(String args[]){
int m = 75;
if(m>=90 && m<100){
    System.out.println("Grade: A+");
}
else if(m>=80 && m<90){
    System.out.println("Grade: B+");
}
else if(m>=70 && m<80){
    System.out.println("Grade: B+");
}
else if(m>=60 && m<70){
    System.out.println("Grade: B");
}
else if(m>=50 && m<60){
    System.out.println("Grade: C+");
}
else if(m>=40 && m<50){
System.out.println("Grade: D+");
}
else {
    System.out.println("Grade: NG");
}
}
```

Output

```
Grade: B+
Grade: B+
```

Group B

5. Complete the following questions by taking user input. o Write a Java program that prompts a user for their last name and stores it in a variable named last name . o Give an instruction that prompts a user for their age and stores it as an integer in a variable named age. o Give an instruction that prompts a user for their temperature and stores it as a float in a variable named current temperature.

```java
public class ac{
    public static void main(String args[]){
        Scanner sc=new Scanner(System.in);
        System.out.println("enter your last name");
        String last_name=sc.nextLine();
        System.out.println("enter your age");
        int age=sc.nextInt();
        System.out.println("enter the temperature");
        Float current_temperature=sc.nextFloat();

    }
}
```

Output

```
enter your last name
chaudhary
enter your age
18
enter the temperature
5
```

6. Give a call to printf that is provided one string that displays the following address on three separate lines:

```java
public class hello{
public static void main(String args[]){
    System.out.println("John Doe"+'\n'+"123 Dudley Street"+'\n'+"123 Dudley Street");
}
}
```

Output

```
John Doe
123 Dudley Street
123 Dudley Street
```

Group C

9. If a customer wants to take a t-shirt from your shop and he wants to buy a t-shirt and feeds in his/her size. Then print the availability As per their preference. [Using Switch Case Statement].

```java
import java.util.*;
public class hello{
    public static void main(String args[]){
        Scanner sc=new Scanner(System.in);
        System.out.println("enter your t-shirt size");
        int size=sc.nextInt();
        switch(size){
            case 30:System.out.println("Size Avaiable");
            break;
            case 31: System.out.println("Size Avaiable");


        }
    }
}
```

Output

```
enter your t-shirt size
15
```

7. Let's take an example program where we will
   take the age of user as input and find whether he
   is a child, adult, or senior on the basis of
   age. Using Java if-else-if ladder statements.

```java
import java.util.*;
public class hello {
    public static void main(String args[]){
        Scanner sc=new Scanner(System.in);
        System.out.println("enter your age");
        int a=sc.nextInt();
        if(a<18){
        System.out.println("Child");
         } else if (a>=18&&a<=60){
        System.out.println("Adult");
        }else {
            System.out.println("Senior");
        }
    }
}
```

Output

17
Child

Group C

2. Your name left justified 15 spaces. [Formatted Output]

```java
import java.util.*;
public  class bb{
    public static void main(String args[]){
        Scanner sc=new Scanner(System.in);
        System.out.println("enter your name");
        String name=sc.nextLine();
        System.out.printf("%-15s%15d%n",name);
    }
}
```

Output

6. Let's create a java program to input a number and check whether it is a Buzz number or not. A number is said to be a buzz number When it ends with 7 or is divisible by 7.

```java
import java.util.*;
public class rrr{
    public static void main(String args[]){
    Scanner sc=new Scanner(System.in);
    System.out.println("enter a number");
    int num=sc.nextInt();
    int a=num%7;
    if(a==0){
        System.out.println("It is buzz number");
    }
    else {
        System.out.println("It is not buzz number");
    }
    }
}
```

Output
```
14
It is buzz number
```

5. Write a Java program that allows the user to enter two integer values and displays the results with the following arithmetic

operators applied to them. For example, if the user enters the values 7 and 5, the output would be:

o Addition: 7 + 5 = 12

o Subtraction: 7 – 5 = 2

o Multiplication: 7 * 5 = 35

o Division: 7 / 5 = 1.40

o Modulus: 7 % 5 = 2

o Exponentiation: 7 ** 5 = 16,807

[All floating-point results should be displayed with two decimal places of accuracy and with commas where appropriate.]

```java
import java.util.*;
import java.lang.*;
public class ram{
    public static void main(String args[]){
        Scanner sc =new Scanner(System.in);
        System.out.println("enter first integer value");
        int first=sc.nextInt();
        System.out.println("enter second integer value");
        int second=sc.nextInt();
        int add=first+second;
        int sub=first-second;
        int mul=first*second;
        double div =first/second;
        int mod= first%second;
        double exponentiation=Math.now(first.second);
    }
}
```

Output

```
Enter first integer number is 15
Enter Second integer number is 14
```

1. Create a Java software that will ask the user for a number and then display whether it is positive or negative.

```java
import java.util.*;
public class hh{
    public static void main(String args[]){
        System.out.println("enter a number");
        Scanner sc=new Scanner(System.in);
        int number = sc.nextInt();
        if(number>=0) {
            System.out.print(number+"is a positive number");
        }else{
            System.out.print(number+"is a negative number");
        }
    }
}
```

Output :

```
enter a number
55
55is a positive number
```

Group 3

3. [Scenario] You're waiting at a station and the announcer has just broadcast that your train is going to be 13445 seconds late. You
need to work out in understandable terms what that means. You assume this is going to be quite a long time so you whip out your laptop to write a program to convert the seconds into hours, minutes and seconds, aiming to maximize readability by giving priority to the largest units, i.e. the resulting seconds and minute's values must not be greater than 60.
You will need four variables to hold: the total number of seconds; the number of hours; the number of minutes; and the number of remaining seconds. The example output should look something like this:
13442 Seconds is: 3 Hours, 44 Minutes and 5 Seconds.

```java
import java.util.*;
public class heyy {
public static void main(String[] args)
    {
        Scanner in = new Scanner(System.in);
        System.out.print("Input seconds: ");
            int seconds = in.nextInt();
        int S = seconds % 60;
        int H = seconds / 60;
        int M = H % 60;
        H = H / 60;
        System.out.print( H + ":" + M + ":" + S);
        System.out.print("\n");
    }
}
```

Output
```
Input seconds: 19
0:0:19
```
1. Let's create a printing application program where we will take the number
of copies to be printed as input from the user and then prints the price
per copy and the total price for the printing copies.

```java
import java.util.Scanner;
public class cc{
    public static void main(String [] args){
        Scanner sc=new Scanner (System.in);
        System.out.println("enter amount of copies:");
        int copies =sc.nextInt();

        if(copies<=99){
            double price=copies*0.30;
            System.out.println("price is"+price);
        }
        else if (copies<=499){
            double price=copies*0.28;
            System.out.println("price is"+price);
        }
        else if(copies>=799){
            double price=copies*0.27;
            System.out.println("price is"+price);
        }
        else if(copies>=1000){
            double price=copies*0.26;
            System.out.println("price is"+price);
```

```java
        }
        else if(copies>=100){
                double price=copies*0.25;
                System.out.println("price is"+price);
            }
        }
    }
```

Output

```java
        }
        else if(copies>=100){
                double price=copies*0.25;
                System.out.println("price is"+price);
            }
        }
    }
```

Group C
3. Your name right justified 15 spaces. [Formatted Output]

```java
public class um{
    public static void main(String args[]){
        String name= "Niraj";
        System.out.printf("%15",name);

    }
}
```

4. There were bunch of students who were curious about their total marks, percentage and grade using the marks from five subjects as input. Develop a system to help them find their grades.

```java
import java.util.Scanner;
public class um {
public static void main(String[] args){
Scanner sc = new Scanner(System.in);
System.out.println("enter your mark in english");
int eng = sc.nextInt();
System.out.println("enter your mark in nepali");
int nep = sc.nextInt();
System.out.println("enter your mark in math");
int math = sc.nextInt();
System.out.println("enter your mark in science");
int sci = sc.nextInt();
System.out.println("enter your mark in computer");
int comp = sc.nextInt();
int sum = eng+nep+math+sci+comp;
double per = (sum/500D)*100;
double grade = (per/100D)*4;
System.out.println("your percentage is "+per);
if(grade >= 3.6){
System.out.println("your grade is A+");
}
else if (grade >=3.2){
System.out.println("your grade is A");
}
```

```
else if (grade >=2.65){
System.out.println("your grade is B");
}

}

}
```

```
enter your mark in english
55
enter your mark in nepali
56
enter your mark in math
98
enter your mark in science
100
enter your mark in computer
76
your percentage is 77.0
your grade is B
```

Group D
2. Follow the simulation of Floor example from lecture slide and develop a system where you need to ask user the floor number. Also determine whether the floor is actual floor or not.

```java
import java.util.*;
public class mintue{
    public static void main(String args[]){
    Scanner Y=new Scanner (System.in);
    System.out.println(" Input seconds:");
    int sec=Y.nextInt();
    int H=(sec/3600);
    int M=(sec%3600)/60;
    int S=sec%60;
    System.out.println(H+"Hours"+":"+M+"Minutes"+":"+S+"Seconds");
    }
}
```

```
 Input seconds:
55
0Hours:0Minutes:55Seconds
```