Name: Nabodip
(L4CG5)

Group A

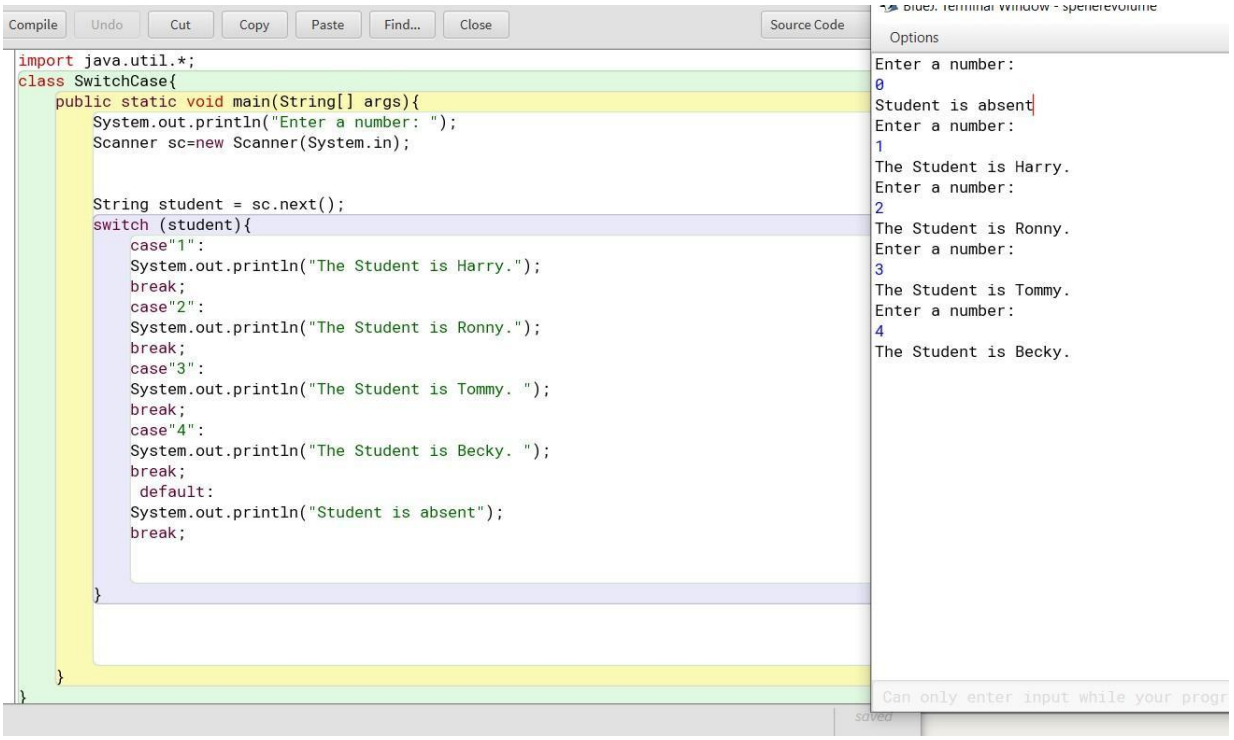
1. What is the String class in Java? Is String a data type?

The String class are character . All string literals in Java programs, such as "abc" , are implemented as instances of this class. String is non-primitive data type.

2. How can you make a String upper case or lower case in Java?

3. Can you use String in switch case in Java? Explain it briefly.

Yes, we can use String in switch case in Java. Below is the example;



4. Explain different types of conditional statement in java.

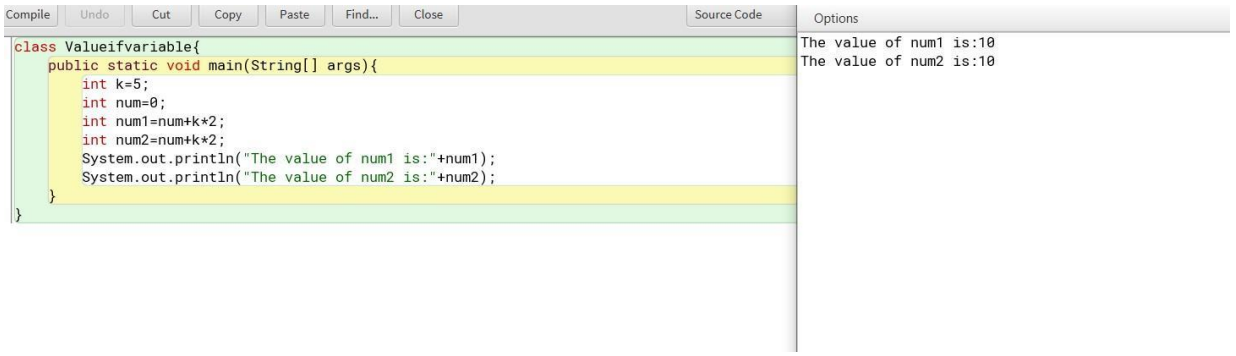
If statement is a type of statement in which a program is executed if the condition is true.

Else statement is a type of statement in which a program is executed if the condition is false.

Else if statement is a type of statement in which a program specifies a new condition if the first condition is false.

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

    ○ int k = 5; ○ int num = 0; ○ int num1 = num + k * 2; ○ int num2 = num + k * 2;

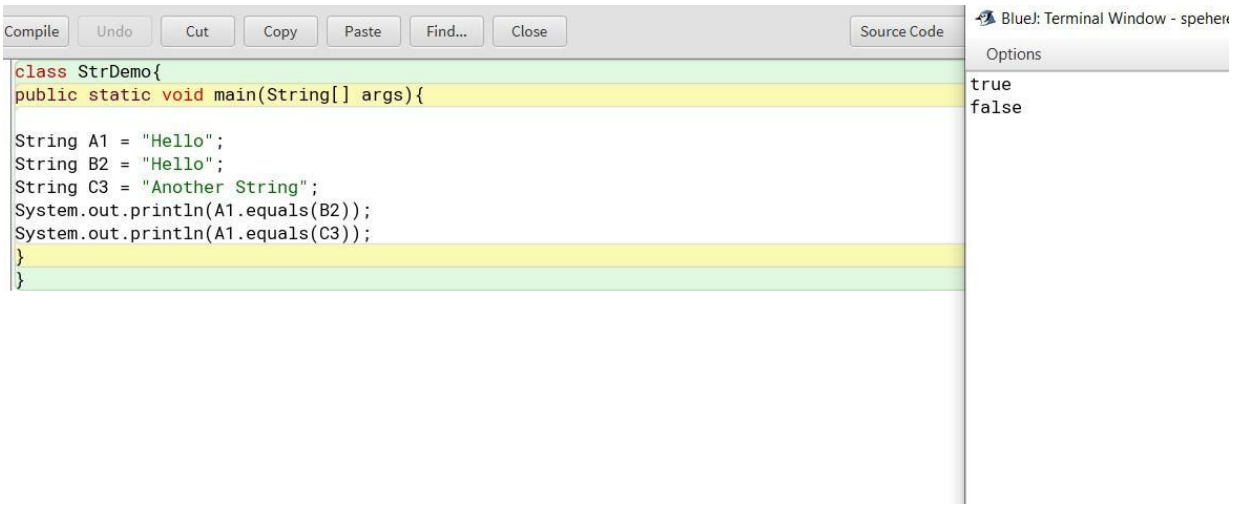


Are the values num1 and num2 equal after the last statement?

Yes, the value of num1 and num2 is equal.

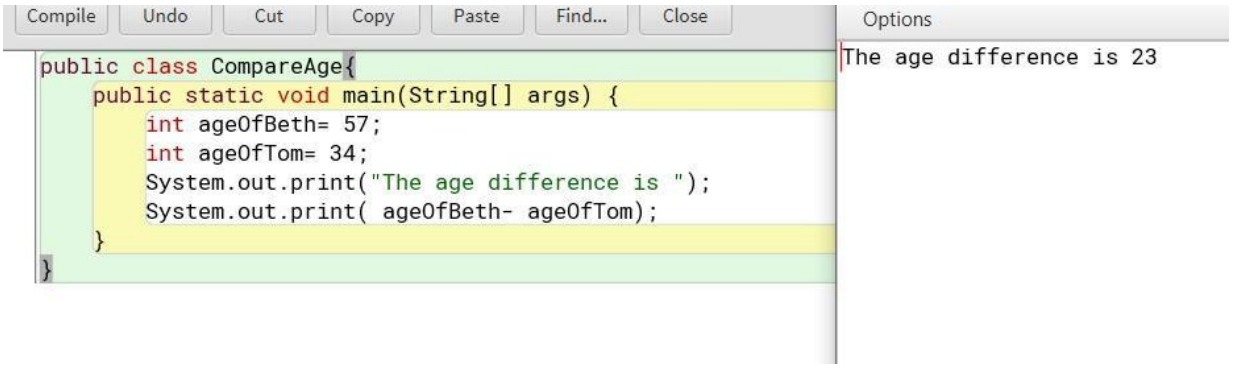
6. How do you split a string in Java?

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

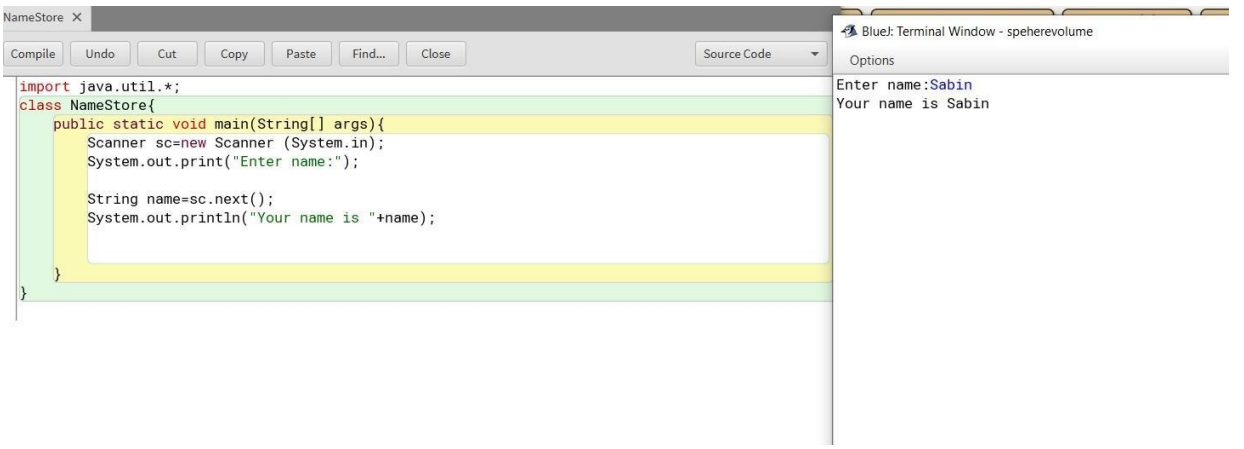


Group B

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



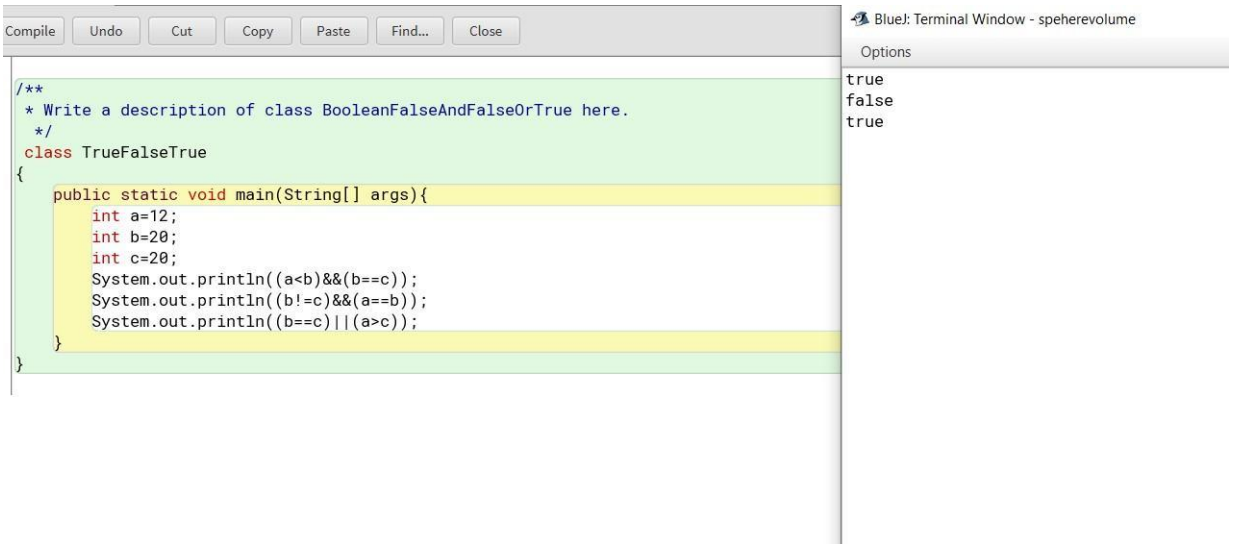
2. Develop a system to store your name as variable.



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?

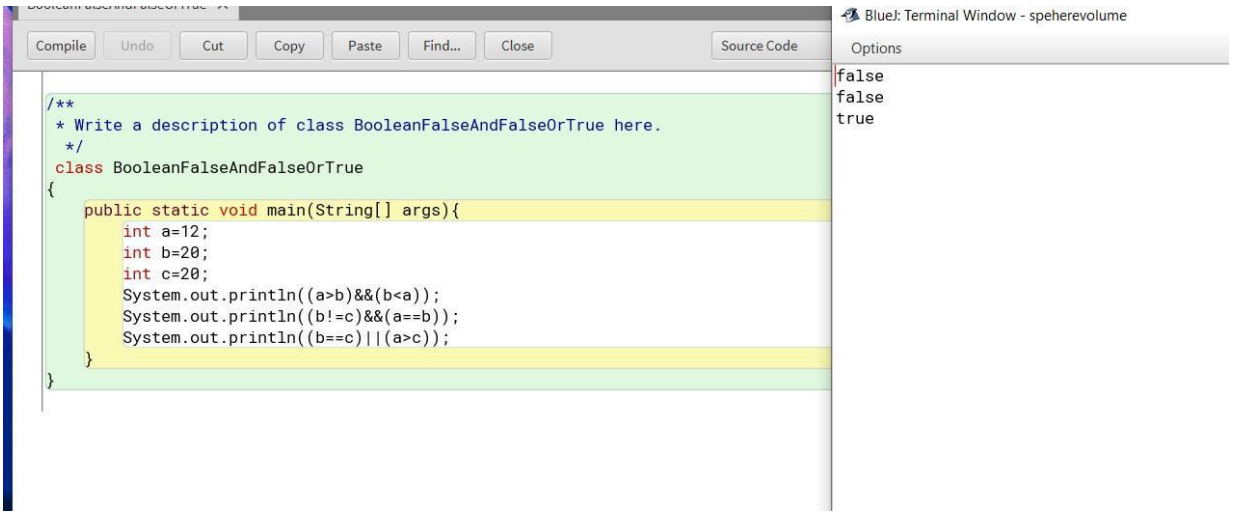
❖ boolean result = true && true;

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



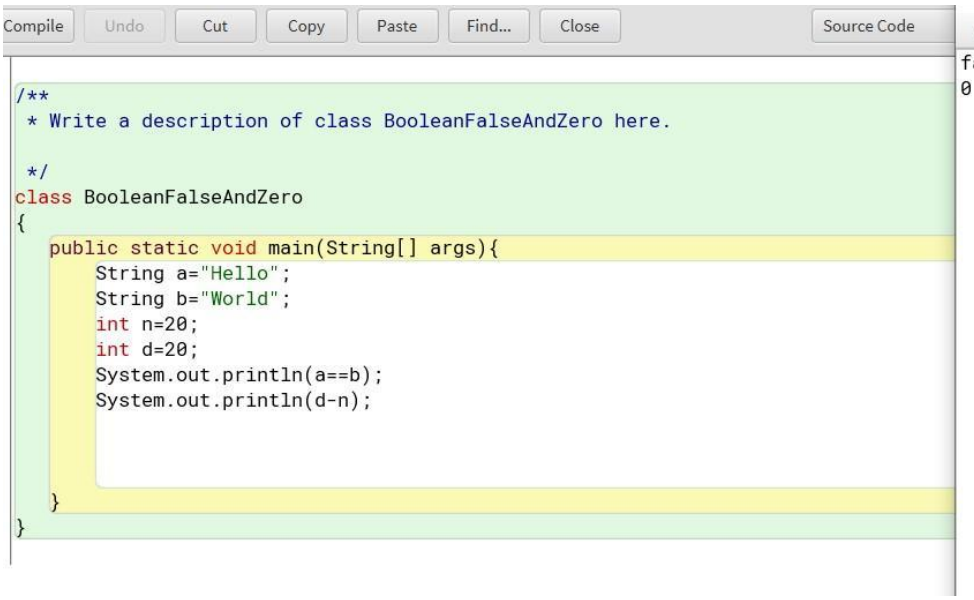

```
/**
 * Write a description of class BooleanFalseAndFalseOrTrue here.
  */
 class TrueFalseTrue
{
    public static void main(String[] args){
        int a=12;
        int b=20;
        int c=20;
        System.out.println((a<b)&&(b==c));
        System.out.println((b!=c)&&(a==b));
        System.out.println((b==c)||(a>c));
    }
}
```

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

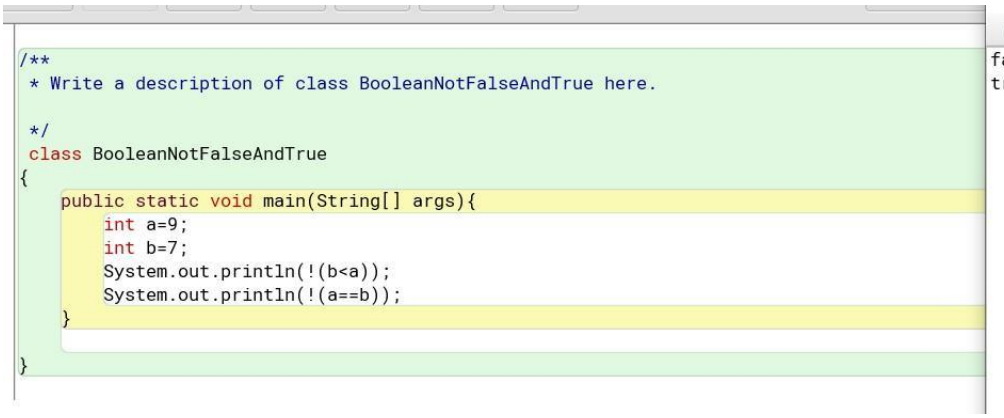



```
/**
 * Write a description of class BooleanFalseAndFalseOrTrue here.
  */
 class BooleanFalseAndFalseOrTrue
{
    public static void main(String[] args){
        int a=12;
        int b=20;
        int c=20;
        System.out.println((a>b)&&(b<a));
        System.out.println((b!=c)&&(a==b));
        System.out.println((b==c)||(a>c));
    }
}
```

❖ boolean result = false && 0;



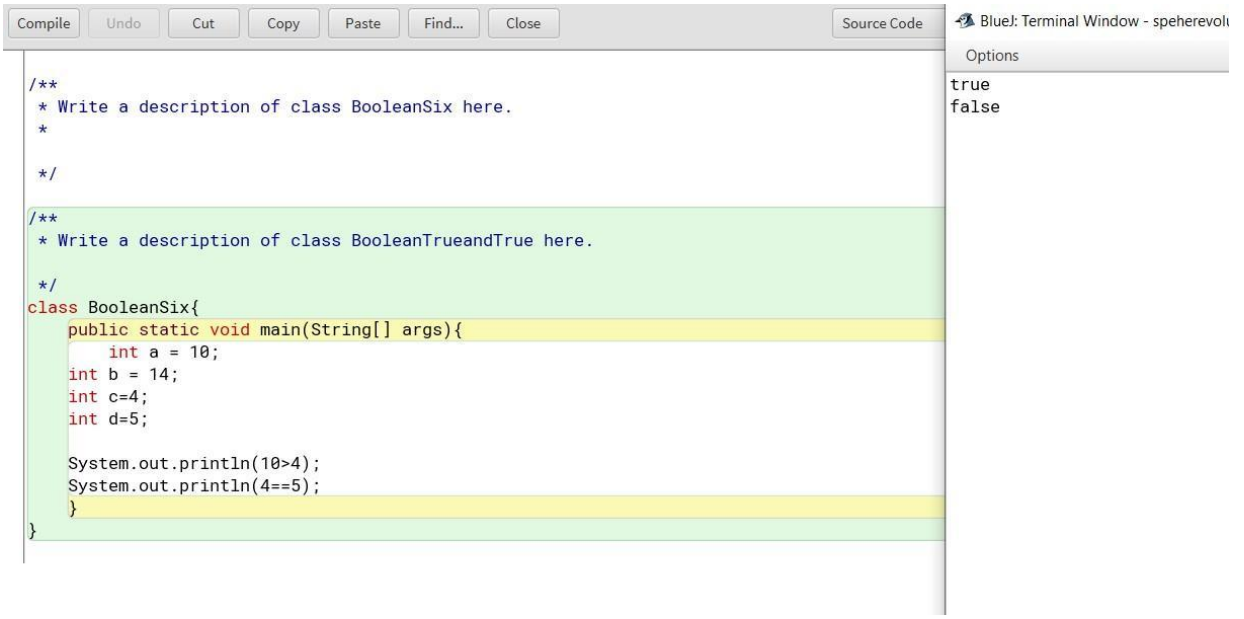
❖ boolean result = !(false) && true;



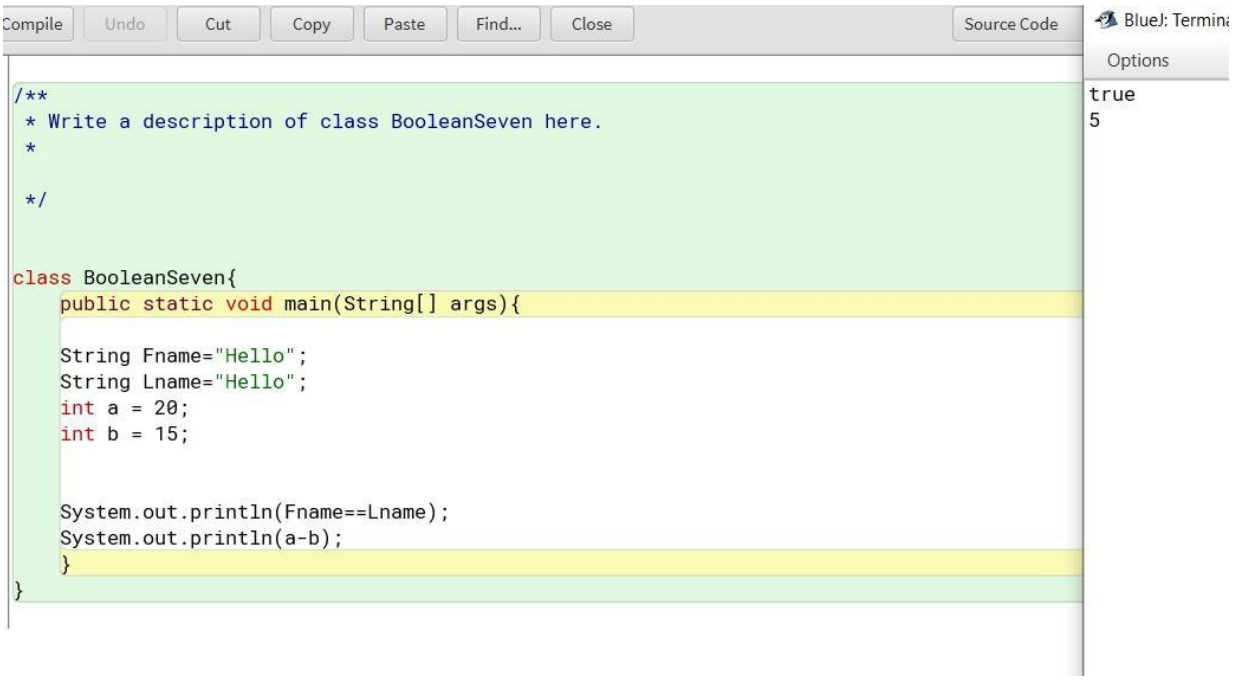
❖ boolean result = !(true && !(false &&

❖ false));

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



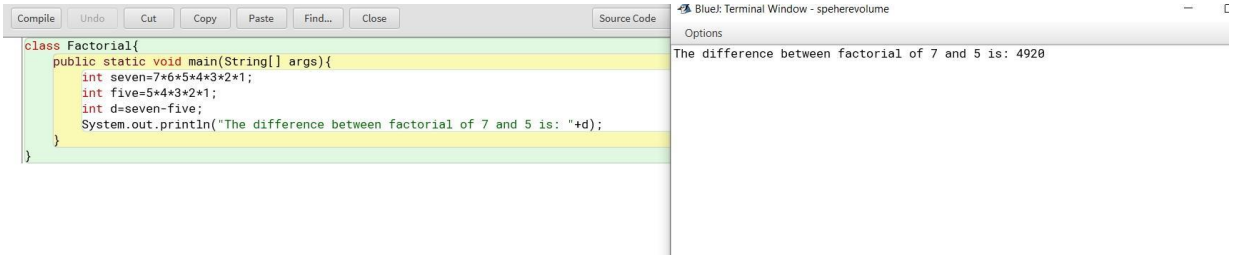
❖ boolean result = true && 5;



❖ boolean result = (3 * 4) != (14 - 2) && ('C' >= 'D');
boolean result = (12 * 2) == (3 * 8);

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

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

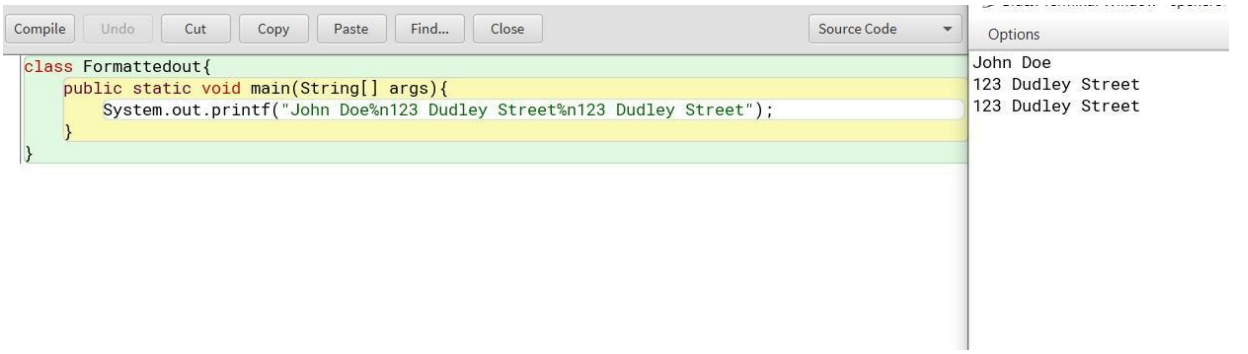


5. Complete the following questions by taking user input. ○

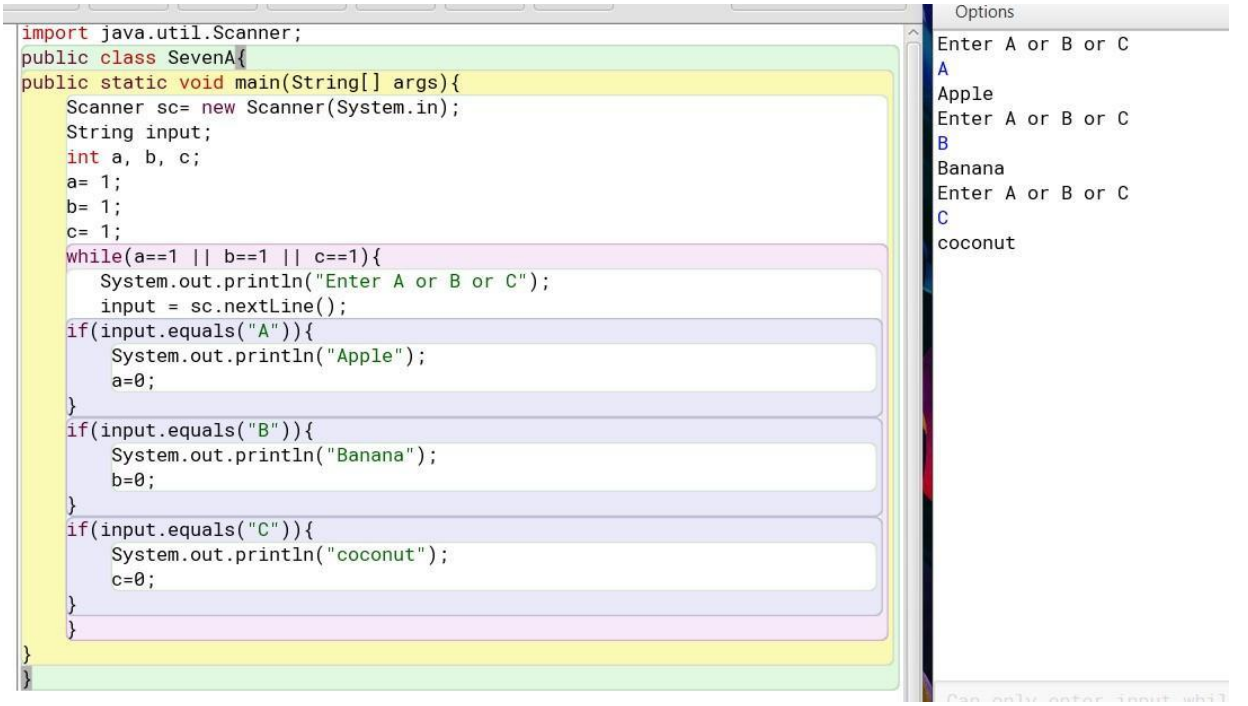
Write a Java program that prompts a user for their last name and stores it in a variable named last_name.

- Give an instruction that prompts a user for their age and stores it as an integer in a variable named age.
- Give an instruction that prompts a user for their temperature and stores it as a float in a variable named current_temperature.

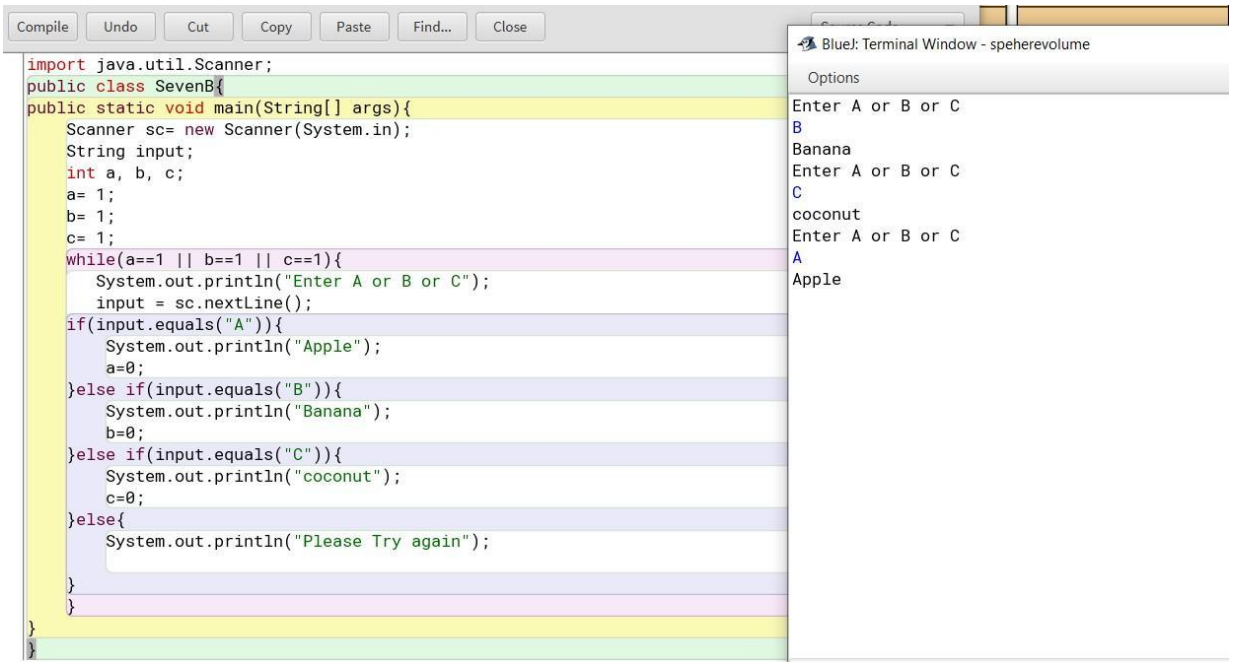
6. Give a call to printf that is provided one string that displays thefollowing address on three separate lines: ○ John Doe ○ 123 Dudley Street ○ 123 Dudley Street



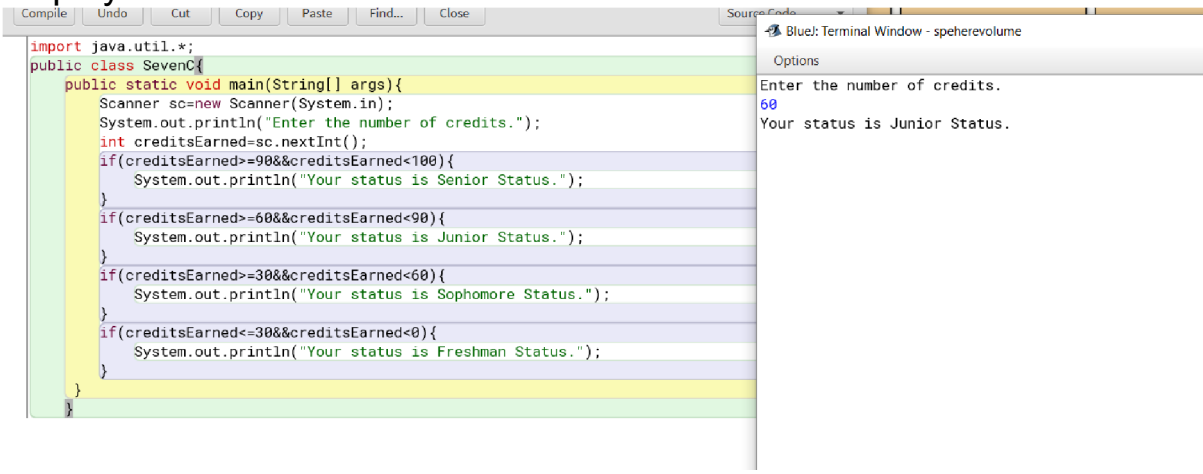
7. Write a java program in which:
    a) The user enters either 'A', 'B', or 'C'. If 'A' is entered, theprogram should display the word 'Apple'; if 'B' is entered, it displays 'Banana'; and if 'C' is entered, it displays 'Coconut'. Use nested if statements for this.



    b) Repeat question **(a)** using an (if statement with "else if" pairs) instead.

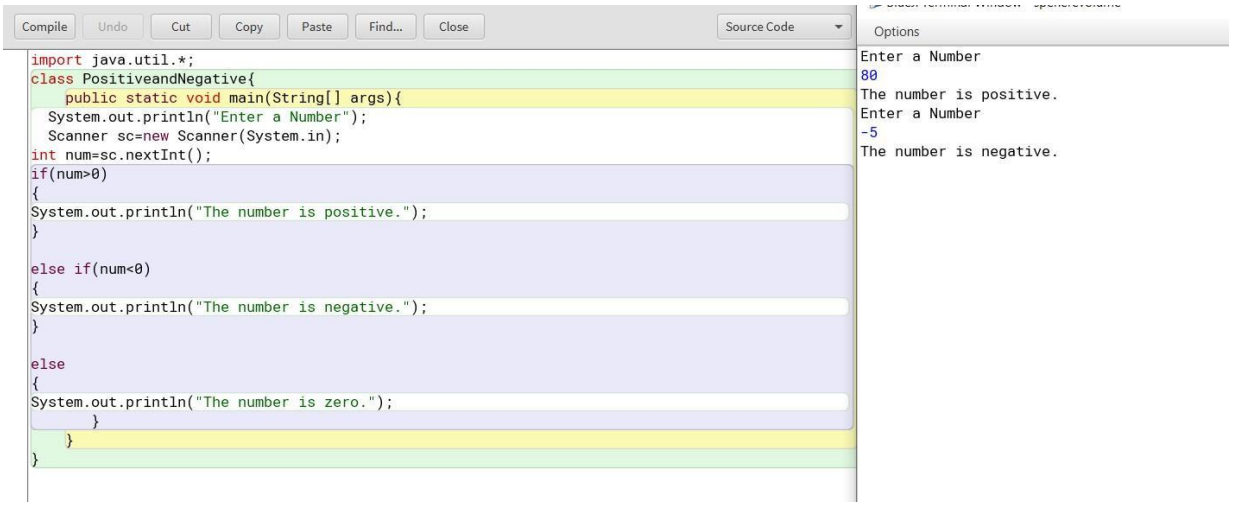


c) A student enters the number of college credits earned. If thenumber of credits is greater than or equal to 90, 'Senior Status' is displayed; if greater than or equal to 60, 'Junior Status' is displayed; if greater than or equal to 30, 'Sophomore Status' is displayed; else, 'Freshman Status' is Displayed.



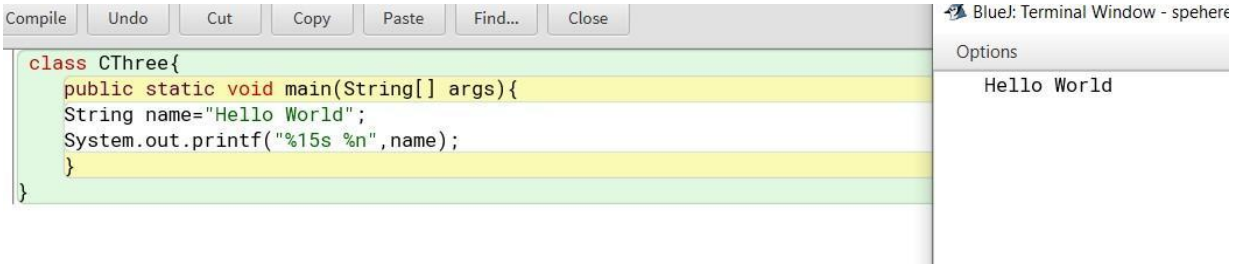
Group C

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



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

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

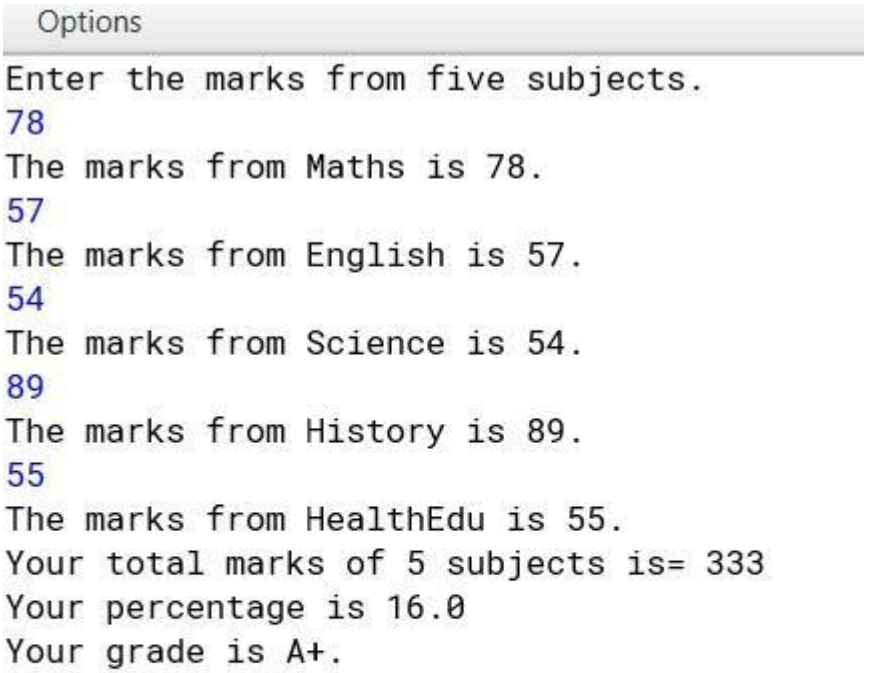


4. There were bunch of students who were curious about their totalmarks, percentage and grade using the marks from five subjects as input. Develop a system to help them find their grades.

MarksFromFiveSub ×

Compile | Undo | Cut | Copy | Paste | Find... | Close

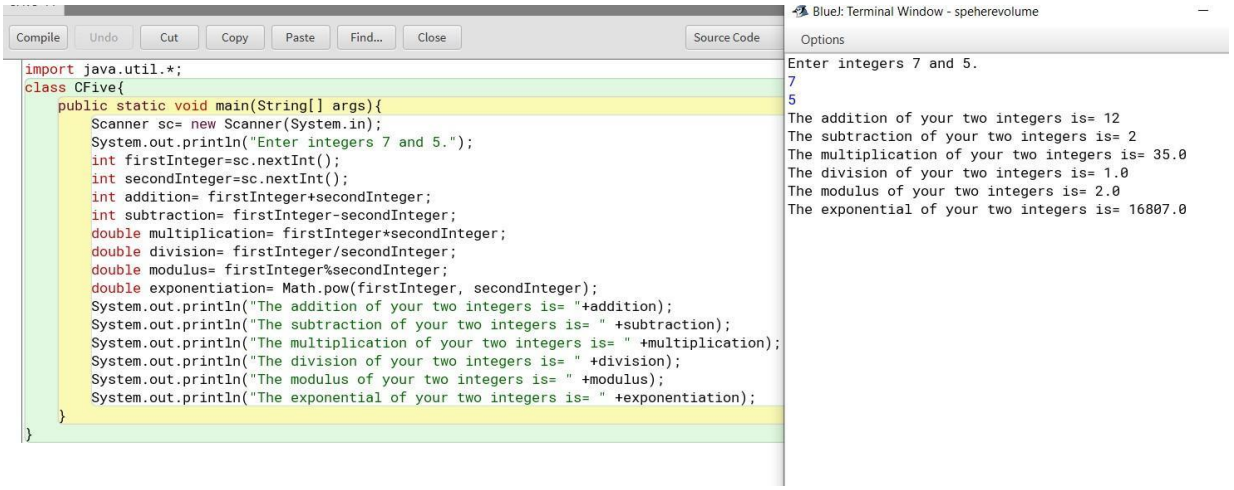
```
import java.util.Scanner;
public class MarksFromFiveSub{
    public static void main(String[] args){
        Scanner sc= new Scanner(System.in);
        System.out.println("Enter the marks from five subjects.");
        int Maths=sc.nextInt();
        System.out.println("The marks from Maths is "+Maths+".");
        int English=sc.nextInt();
        System.out.println("The marks from English is "+English+".");
        int Science=sc.nextInt();
        System.out.println("The marks from Science is "+Science+".");
        int History=sc.nextInt();
        System.out.println("The marks from History is "+History+".");
        int HealthEdu=sc.nextInt();
        System.out.println("The marks from HealthEdu is "+HealthEdu+".");
        int totalMarks= Maths+English+Science+History+HealthEdu;
        System.out.println("Your total marks of 5 subjects is= "+ totalMarks);
        double percentage= (totalMarks*5)/100;
        System.out.println("Your percentage is "+ percentage);
        if (percentage<=90){
            System.out.println("Your grade is A+.");
        }
        if (percentage>90 && percentage<=80){
            System.out.println("Your grade is A.");
        }
        if (percentage>80 && percentage<=70){
            System.out.println("Your grade is B+.");
        }
        if (percentage>70 && percentage<=60){
            System.out.println("Your grade is B.");
        }
        if (percentage>60 && percentage<=50){
            System.out.println("Your grade is C+.");
        }
        if (percentage>50 && percentage<=40){
            System.out.println("Your grade is C.");
        }
        if (percentage>40 && percentage<=30){
            System.out.println("Your garde is D+.");
        }
        if (percentage>30 && percentage<=20){
            System.out.println("Your grade is D.");
        }
        if (percentage>20 && percentage<0){
            System.out.println("Your grade is E.");
        }
    }
}
```



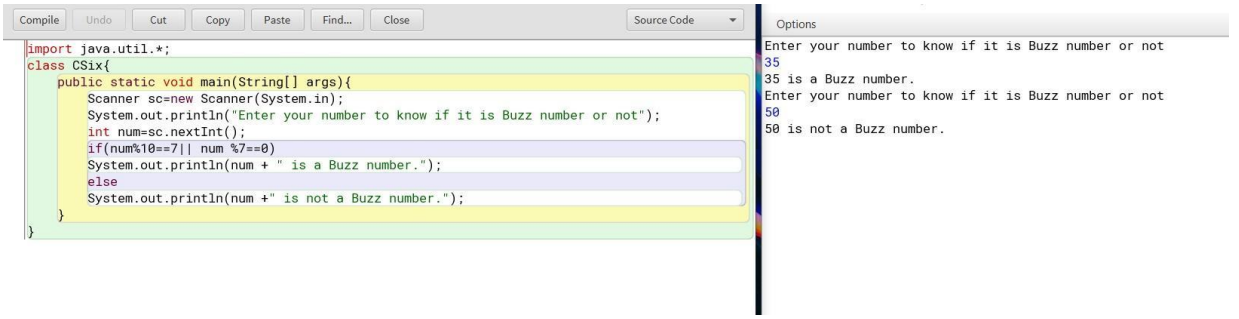
5. Write a Java program that allows the user to enter two integer values and displays the results with the following arithmetic operators applied to them. For example, if the user enters the values 7 and 5, the output would be:

    - Addition: 7 + 5 = 12
    - Subtraction: 7 – 5 = 2
    - Multiplication: 7 * 5 = 35
    - Division: 7 / 5 = 1.40
    - Modulus:

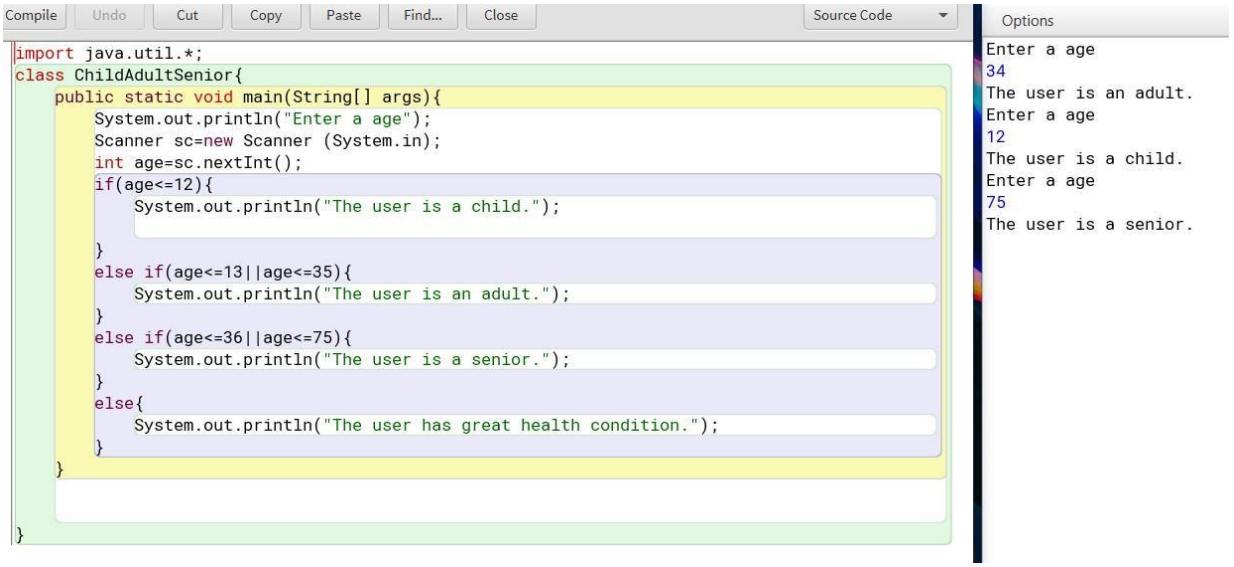
7 % 5 = 2 ○ Exponentiation: 7 ** 5 = 16,807 **[All floating-point results should be displayed with two decimal places of accuracy and with commas where appropriate.]**



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.

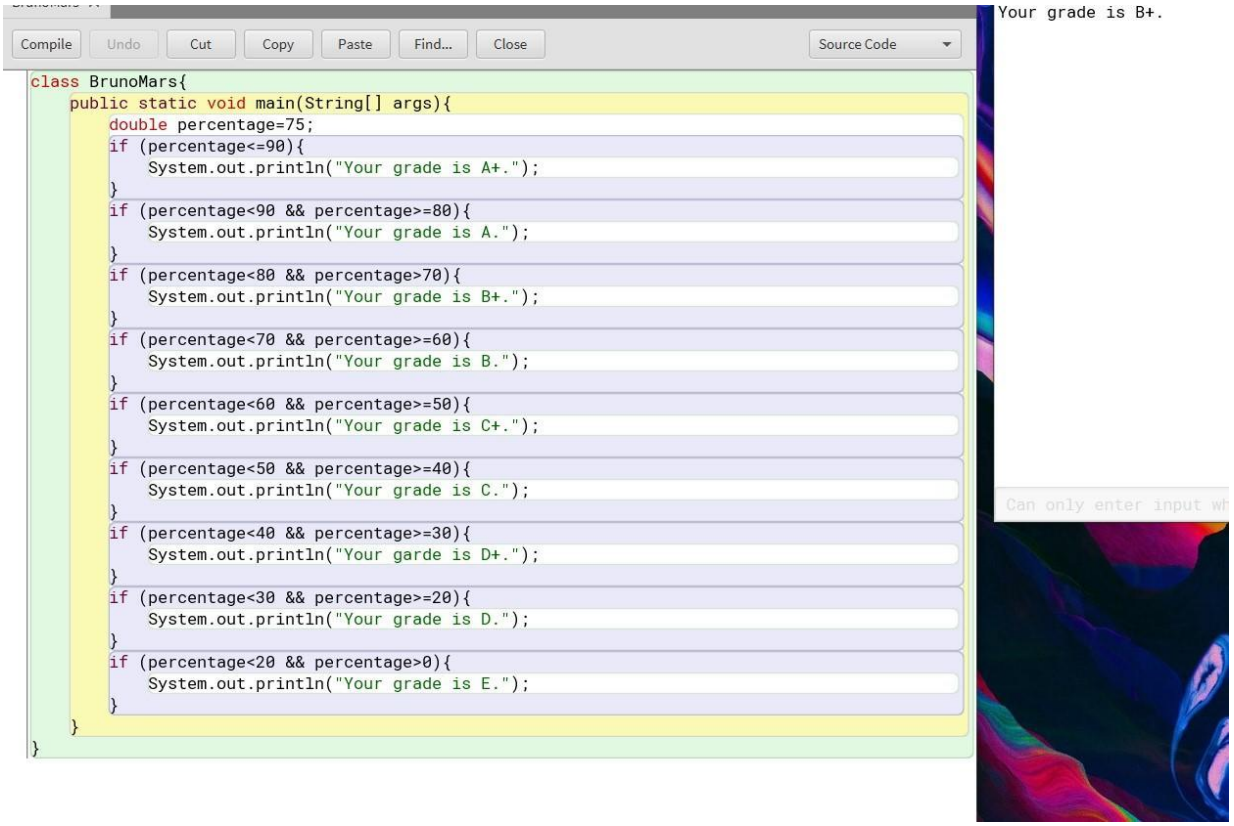


7. Let's take an example program where we will take the age of user as input and find whether he is a child, adult, or senior on the basis of age. Using Java if-else-if ladder statements



.

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.



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].

Compile | Undo | Cut | Copy | Paste | Find... | Close | Source Code

```java
import java.util.*;
class Tshirt{
    public static void main(String[] args){
        Scanner sc=new Scanner(System.in);
        System.out.println("Enter your size where 1 is small,2 is medium,3 is large, 4 is XL,5 is XXL and enter 6 for more");
        int size= sc.nextInt();
        switch(size){
            case 1:
            System.out.println("The small size is not available.");
            break;
            case 2:
            System.out.println("The medium has only 3 colors of tshirt.");
            break;
            case 3:
            System.out.println("Large size is available.");
            break;
            case 4:
            System.out.println("XL is available.");
            break;
            case 5:
            System.out.println(" We dont have any of your size:");
            break;
            default:
            System.out.println("Out of Stock");
        }

    }
}
```

Options

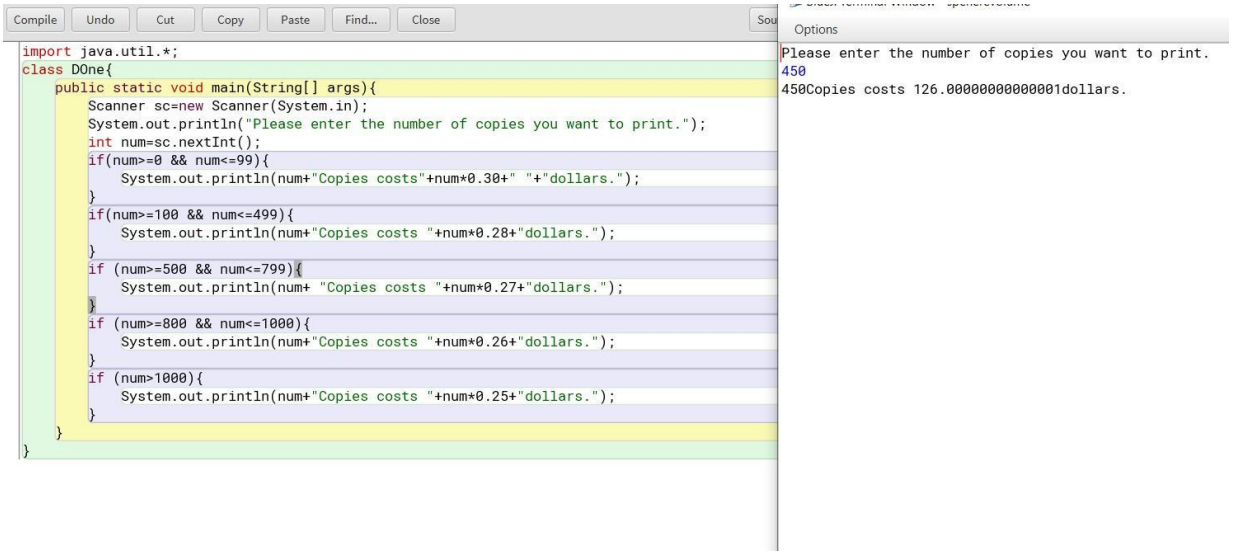
```
Enter your size where 1 is small,2 is medium,3 is large, 4 is XL,5 is XXL and enter 6 for more
3
Large size is available.
Enter your size where 1 is small,2 is medium,3 is large, 4 is XL,5 is XXL and enter 6 for more
2
The medium has only 3 colors of tshirt.
Enter your size where 1 is small,2 is medium,3 is large, 4 is XL,5 is XXL and enter 6 for more
1
The small size is not available.
Enter your size where 1 is small,2 is medium,3 is large, 4 is XL,5 is XXL and enter 6 for more
6
Out of Stock
```

Group D

1. Let's create a printing application program where we will take the numberof copies to be printed as input from the user and then prints the price per copy and the total price for the printing copies.

The chart price to print the number of copies is given below:

- 0 – 99 : $0.30 per copy
- 100 – 499 : $0.28 per copy
- 500 – 799 : $0.27 per copy
- 800 – 1000 : $0.26 per copy
- over 1000 : $0.25 per copy



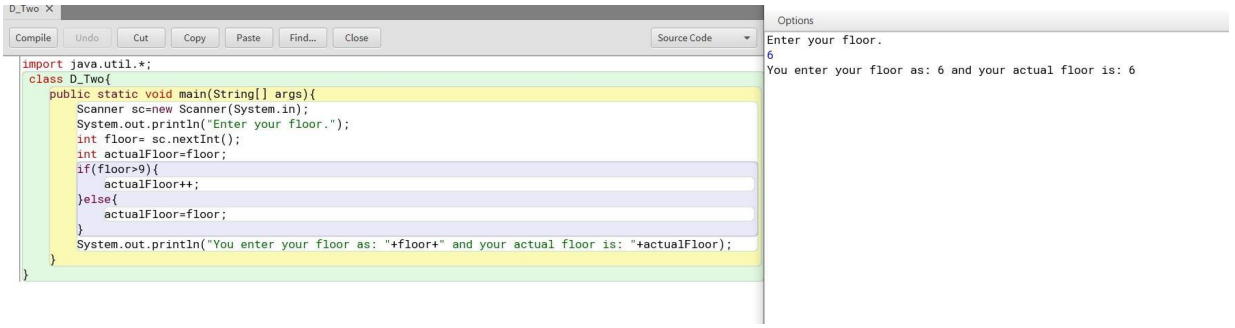
Compile | Undo | Cut | Copy | Paste | Find... | Close

```
import java.util.*;
class DOne{
    public static void main(String[] args){
        Scanner sc=new Scanner(System.in);
        System.out.println("Please enter the number of copies you want to print.");
        int num=sc.nextInt();
        if(num>=0 && num<=99){
            System.out.println(num+"Copies costs"+num*0.30+" "+"dollars.");
        }
        if(num>=100 && num<=499){
            System.out.println(num+"Copies costs "+num*0.28+"dollars.");
        }
        if (num>=500 && num<=799){
            System.out.println(num+ "Copies costs "+num*0.27+"dollars.");
        }
        if (num>=800 && num<=1000){
            System.out.println(num+"Copies costs "+num*0.26+"dollars.");
        }
        if (num>1000){
            System.out.println(num+"Copies costs "+num*0.25+"dollars.");
        }
    }
}
```

Options

```
Please enter the number of copies you want to print.
450
450Copies costs 126.00000000000001dollars.
```

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.



3. [Scenario] You're waiting at a station and the announcer has justbroadcast 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.