Assignment 4

1.

```
import java.util.*;
class Example{
	public static void main(String args[]){
		Scanner input=new Scanner(System.in);
		System.out.print("Input your number 1 : ");

		int x=input.nextInt();
		System.out.print("Input your number 2 : ");
		int y=input.nextInt();
		if(x>y){
			int z=x+y;
			System.out.println(z);
		}else{
			System.out.println(x+""+y);

		}
	}
}
```

2.

```
import java.util.*;
class Example{
	public static void main(String args[]){
		Scanner input=new Scanner(System.in);
		System.out.print("Enter an integer : ");

		int x=input.nextInt();
		int absoluteNumber = Math.abs(x);


			System.out.println(absoluteNumber);

	}
}
```

3.

```
import java.util.*;
class Example{
	public static void main(String args[]){
		Scanner input=new Scanner(System.in);
		System.out.print("Enter Chemistry Marks: ");
```

```
                int a=input.nextInt();
                System.out.print("Enter Physics Marks: ");
                int b=input.nextInt();
                System.out.print("Enter Combined Maths Marks: ");
                int c=input.nextInt();
                int total=a+b+c;
                double avg=total/3;
                if (avg>75){
                        System.out.println("Pass");
                }else{
                        System.out.println("Fail");
                }



        }
}
```

4.

```
import java.util.*;
class Example{
        public static void main(String args[]){
                Scanner input=new Scanner(System.in);
                System.out.print("Enter unit price: ");
                int a=input.nextInt();
                System.out.print("Enter Amount: ");
                int b=input.nextInt();

                int total=a*b;

                if (total>1500){
                        System.out.println("You are entitled to the super draw");
                }else{
                        System.out.println("Try again");
                }
        }




        }
```

5.

```
import java.util.*;
```

```
class Example{
	public static void main(String args[]){
		Scanner input=new Scanner(System.in);
		System.out.print("Enter unit price: ");
		int a=input.nextInt();
		System.out.print("Enter Amount: ");
		int b=input.nextInt();

		int total=a*b;
		double discount=total*0.05;
		double newtotal=total*0.95;

		if (total>500){
			System.out.println("Discount : "+discount+"\nNew Total : "+newtotal);
		}else{
			System.out.println("No discount given");
		}
	}




	}
```

6.

```
import java.util.*;
class Example{
	public static void main(String args[]){
		Scanner input=new Scanner(System.in);
		System.out.print("Enter year: ");
		int year=input.nextInt();

		if ((year%4==0 && year%100!=0) || year%400==0){
			System.out.println("Leap Year");
		}else{
			System.out.println("Not a Leap Year");
		}
	}




	}
```

7.

```
import java.util.*;
class Example{
	public static void main(String args[]){
		Scanner input=new Scanner(System.in);
		System.out.print("Enter number 1: ");
		int a=input.nextInt();
		System.out.print("Enter number 2: ");
		int b=input.nextInt();
		System.out.print("Enter number 3: ");
		int c=input.nextInt();
		int max=a;
		if (b>a){
			max=b;
		}if (c>max){
			max=c;

		}
		System.out.println("Maximum number is: "+max);
	}




	}
```

8.
C,E

9.
A,B,C,D,E

10.

```
import java.util.*;
class Example{
	public static void main(String args[]){
		Scanner input=new Scanner(System.in);
		System.out.print("Input number : ");
		int a=input.nextInt();



		if (a%2==0){
		System.out.println("The number is even");
		}
		else{
```

```
                System.out.println("The number is odd");

            }

        }




        }
```

11.
A-true
B-true
C-true
D-false
E-true
F-false
G-true

12.
A-9
B-true
C-error
D-false
E-true

13.
10
true
error
true
true
False

14.
2351.521.231ctrue
101001251.521.231ctrue
356.731true
Error
Error

15.
True

False
True
False
True
False
False

16.
123
 23
3
4123
4123
4123

17.
D

18.
A
B
C
D
E
F
H

19.
1
231
31
Wrong
Wrong
Wrong

20.
```
import java.util.*;
class Example{
	public static void main(String args[]){
		Scanner input=new Scanner(System.in);
		System.out.print("Input number : ");
		int x=input.nextInt();
```

```
                if(x>0){
                        System.out.println("positive integer");
                }else if (x<0){
                        System.out.println("negative integer");
                }else{
                        System.out.println("zero");
                }

 }
}
```

21.

```
import java.util.*;
class Example{
        public static void main(String args[]){
                Scanner input=new Scanner(System.in);
                System.out.print("Input number 1 : ");
                int x=input.nextInt();
                System.out.print("Input number 2 : ");
                int y=input.nextInt();
                int z=Math.abs(x)-Math.abs(y);




                        System.out.println("absolute difference "+z);


 }
}
```

22.
A
G

23.

```
import java.util.*;
class Example{
        public static void main(String args[]){
                Scanner input=new Scanner(System.in);
                System.out.print("Input number 1 : ");
```

```
                int x=input.nextInt();
                System.out.print("Input number 2 : ");
                int y=input.nextInt();

                if (y>x){
                        System.out.println("The first number is less than the second number");

                }


                if  (x>y){
                        System.out.println("The first number is greater than the second number");
                }else{
                        System.out.println("Both are equal");
                }

        }
}
```

24.

```
import java.util.*;
class Example{
        public static void main(String args[]){
                Scanner input=new Scanner(System.in);
                System.out.print("Input positive integer : ");
                int x=input.nextInt();
                System.out.print("Input positive integer : ");
                int y=input.nextInt();
                System.out.print("Input positive integer : ");
                int z=input.nextInt();

                int digit1=x%10;
                int digit2=y%10;
                int digit3=z%10;
                boolean result=(digit1==digit2) || (digit2==digit3) || (digit1==digit3);{
                        System.out.println(" "+result);
                 }


        }
}
```

25.

```
import java.util.*;
class Example{
	public static void main(String args[]){
		Scanner input=new Scanner(System.in);
		System.out.print("Input positive integer : ");
		int x=input.nextInt();
		System.out.print("Input positive integer : ");
		int y=input.nextInt();
		System.out.print("Input positive integer : ");
		int z=input.nextInt();


		boolean result=(x>(y-z)) || (y>(x-z)) || (z>(x-y));{
			System.out.println(" "+result);
		 }


	}
}
```

26.

```
import java.util.*;
class Example{
	public static void main(String args[]){
		Scanner input=new Scanner(System.in);
		System.out.print("Selling Price : ");
		int x=input.nextInt();
		System.out.print("Cost : ");
		int y=input.nextInt();



		if (x>y){
			System.out.println("Profit");
		}else if (x<y) {
			System.out.println("Loss");
		}else {
			System.out.println("No Profit No Loss");
		}


	}
```

```
}
```

27.

```
import java.util.*;
class Example{
	public static void main(String args[]){
		Scanner input=new Scanner(System.in);
		System.out.print("number 1 : ");
		int x=input.nextInt();
		System.out.print("number 2 : ");
		int y=input.nextInt();
		System.out.print("number 3 : ");
		int z=input.nextInt();



		if (x>y && y>z){
			System.out.println("Decreasing");
		}else if (x<y && y<z) {
			System.out.println("Increasing");
		}else {
			System.out.println("Neither increasing nor decreasing order");
		}


	}
}
```

28.

```
import java.util.*;
class Example{
	public static void main(String args[]){
		Scanner input=new Scanner(System.in);
		System.out.print("weight : ");
		int x=input.nextInt();
		System.out.print("age : ");
		int y=input.nextInt();



		if (x>=50 && y>18){
```

```
                System.out.println("Eligible");
            }else {
                System.out.println("Not Eligible");
            }

        }
}
```

29.

```
import java.util.*;
class Example{
    public static void main(String args[]){
        Scanner input=new Scanner(System.in);
        System.out.print("Number 1 : ");
        int x=input.nextInt();
        System.out.print("Number 2 : ");
        int y=input.nextInt();




        if (x>0 || x<0){
            System.out.println("True");
        }else {
            System.out.println("False");
        }

    }
}
```

30.

```
import java.util.*;
class Example{
    public static void main(String args[]){
        Scanner input=new Scanner(System.in);
        System.out.print("Enter a character : ");
        char ch = input.next().charAt(0);
        if (ch >= 'A' && ch <= 'Z') {
      System.out.println(ch + " is an uppercase letter.");
    } else   {
      System.out.println(ch + " is a lowercase letter.");
    }
```

```
        }
}
```

31.

```
import java.util.*;
class Example{
        public static void main(String args[]){
                Scanner input=new Scanner(System.in);
                System.out.print("Enter a number : ");
                int num = input.nextInt();
                 if (num % 10 == 7 || num % 7 == 0) {
        System.out.println(num + " is a Buzz Number.");
      } else {
        System.out.println(num + " is not a Buzz Number.");
      }









        }
}
```

32.

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

```
        System.out.print("Enter the number of classes held: ");
        int classesHeld = input.nextInt();

        System.out.print("Enter the number of classes attended: ");
        int classesAttended = input.nextInt();


        double attendancePercentage = ((double) classesAttended / classesHeld) * 100;


        System.out.println("Attendance Percentage: " + attendancePercentage + "%");


        if (attendancePercentage >= 70) {
            System.out.println("You are eligible to sit for the exam.");
        } else {

            System.out.print("Your attendance is less than 70%. Do you have a medical cause?
(Y/N): ");
            char medicalCause = input.next().charAt(0);


            if (medicalCause == 'Y' || medicalCause == 'y') {
                System.out.println("You are eligible to sit for the exam due to medical reasons.");
            } else {
                System.out.println("You are not eligible to sit for the exam.");
            }
        }


    }
}
```

33.

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

```
        System.out.print("Enter your salary: ");
        double salary = input.nextDouble();

        System.out.print("Enter your years of service: ");
        int yearsOfService = input.nextInt();


        double bonusPercentage = 0;

        if (yearsOfService < 5) {
            bonusPercentage = 10;
        } else if (yearsOfService < 10) {
            bonusPercentage = 15;
        } else {
            bonusPercentage = 25;
        }


        double bonusAmount = (salary * bonusPercentage) / 100;


        double totalSalary = salary + bonusAmount;


        System.out.println("Bonus Percentage: " + bonusPercentage + "%");
        System.out.println("Bonus Amount: " + bonusAmount);
        System.out.println("Total Salary with Bonus: " + totalSalary);



    }
}
```

34.

```
import java.util.*;
class Example{
        public static void main(String args[]){
                Scanner input=new Scanner(System.in);
                double bookPrice = 100.0;


        System.out.print("Enter the number of books: ");
        int numberOfBooks = input.nextInt();
```

```
        double subtotal = numberOfBooks * bookPrice;


        double discount = 0.0;


        if (subtotal > 5000) {
            discount = subtotal * 0.10;
        }


        double total = subtotal - discount;


        System.out.printf("Subtotal : %.2f%n", subtotal);
        if (discount > 0) {
            System.out.printf("Discount : %.2f%n", discount);
        } else {
            System.out.println("Discount : -");
        }
        System.out.printf("TOTAL : %.2f%n", total);




    }
}
```

35.

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

        System.out.print("Enter the current temperature: ");
        int temp = input.nextInt();


        if (temp >= 80) {
            System.out.println("The activity for guests is Swimming.");
        } else if (temp >= 60 && temp < 80) {
```

```
            System.out.println("The activity for guests is Tennis.");
        } else if (temp >= 40 && temp < 60) {
            System.out.println("The activity for guests is Golf.");
        } else if (temp < 40) {
            System.out.println("The activity for guests is Skiing.");
        }




    }
}
```

36.

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

        System.out.print("Enter an alphabet: ");
        char ch = input.next().toLowerCase().charAt(0);


        if (ch >= 'a' && ch <= 'z') {

            if (ch == 'a' || ch == 'e' || ch == 'i' || ch == 'o' || ch == 'u') {
                System.out.println(ch + " is a vowel.");
            } else {

                System.out.println(ch + " is a consonant.");
            }
        } else {
            System.out.println("Invalid input. Please enter a letter.");
        }




    }
}
```

37.

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


	System.out.print("Enter the current annual salary: ");
	double currentSalary = input.nextDouble();


	System.out.print("Enter the performance rating (1=excellent, 2=good, 3=poor): ");
	int rating = input.nextInt();


	double raisePercentage = 0;


	switch (rating) {
	   case 1:
	      raisePercentage = 6.0;
	      break;
	   case 2:
	      raisePercentage = 4.0;
	      break;
	   case 3:
	      raisePercentage = 1.5;
	      break;
	   default:
	      System.out.println("Invalid rating. Please enter 1, 2, or 3.");


	}


	double raiseAmount = (currentSalary * raisePercentage) / 100;


	double newSalary = currentSalary + raiseAmount;


	System.out.printf("Current Salary: %.2f%n", currentSalary);
	System.out.printf("Raise Percentage: %.2f%%%n", raisePercentage);
	System.out.printf("Raise Amount: %.2f%n", raiseAmount);
	System.out.printf("New Salary: %.2f%n", newSalary);
```

```
   }
}
```

38.

```
import java.util.*;
class Example{
        public static void main(String args[]){
                Scanner input=new Scanner(System.in);
                System.out.print("Enter your attendance percentage: ");
      double attendancePercentage = input.nextDouble();


      System.out.print("Enter your average marks for the final term test: ");
      double averageMarks = input.nextDouble();


      if (attendancePercentage > 80 && averageMarks > 50) {
         System.out.println("You are eligible to sit for the O/L examination.");
      } else {
         System.out.println("You are not eligible to sit for the O/L examination.");
      }
    }
}
```

39.

```
import java.util.*;
class Example{
        public static void main(String args[]){
                Scanner input=new Scanner(System.in);
                System.out.print("Enter the time (HH:MM): ");
      String timeInput = input.next();


      int hours = Integer.parseInt(timeInput.substring(0, 2));
      int minutes = Integer.parseInt(timeInput.substring(3, 5));
```

```
        if (hours >= 0 && hours < 12) {
            System.out.println("Good morning");
        } else if (hours >= 12 && hours < 16) {
            System.out.println("Good afternoon");
        } else if (hours >= 16 && hours < 19) {
            System.out.println("Good evening");
        } else if (hours >= 19 && hours < 24) {
            System.out.println("Good night");
        } else {
            System.out.println("Invalid time input");
        }
    }
}
```

40.

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

        System.out.print("Enter the year: ");
        int year = input.nextInt();


        System.out.print("Enter the month (e.g., January, February): ");
        String month = input.next().toLowerCase();


        boolean isLeapYear = (year % 4 == 0 && year % 100 != 0) || (year % 400 == 0);


        if (isLeapYear) {
            System.out.println(year + " is a leap year.");
        } else {
            System.out.println(year + " is not a leap year.");
        }


        int days = 0;
        switch (month) {
            case "january":
            case "march":
            case "may":
```

```
            case "july":
            case "august":
            case "october":
            case "december":
                days = 31;
                break;
            case "april":
            case "june":
            case "september":
            case "november":
                days = 30;
                break;
            case "february":
                if (isLeapYear) {
                    days = 29;
                } else {
                    days = 28;
                }
                break;
            default:
                System.out.println("Invalid month entered.");

        }


        System.out.println("The number of days in " + month.substring(0, 1).toUpperCase() +
month.substring(1) + " is " + days + ".");



    }
}
```

41.

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

        System.out.print("Enter the number of copies to be printed: ");
        int numberOfCopies = input.nextInt();
```

```
        double pricePerCopy = 0.0;
        double totalPrice;


        if (numberOfCopies >= 0 && numberOfCopies <= 99) {
            pricePerCopy = 30.00;
        } else if (numberOfCopies >= 100 && numberOfCopies <= 499) {
            pricePerCopy = 28.00;
        } else if (numberOfCopies >= 500 && numberOfCopies <= 799) {
            pricePerCopy = 27.00;
        } else if (numberOfCopies >= 800 && numberOfCopies <= 1000) {
            pricePerCopy = 26.00;
        } else if (numberOfCopies > 1000) {
            pricePerCopy = 25.00;
        } else {
            System.out.println("Invalid number of copies.");


        }


        totalPrice = numberOfCopies * pricePerCopy;


        System.out.printf("Price per copy: Rs.%.2f%n", pricePerCopy);
        System.out.printf("Total price: Rs.%.2f%n", totalPrice);



    }
}
```

42.

```
import java.util.*;
class Example{
        public static void main(String args[]){
                Scanner input=new Scanner(System.in);
                 System.out.print("Enter your waist size in inches: ");
        int waistSize = input.nextInt();


        if (waistSize >= 28 && waistSize <= 29) {
            System.out.println("Your size is XS.");
```

```
        } else if (waistSize >= 30 && waistSize <= 31) {
            System.out.println("Your size is S.");
        } else if (waistSize >= 32 && waistSize <= 34) {
            System.out.println("Your size is M.");
        } else if (waistSize >= 36 && waistSize <= 38) {
            System.out.println("Your size is L.");
        } else if (waistSize >= 40 && waistSize <= 42) {
            System.out.println("Your size is XL.");
        } else {
            System.out.println("Waist size out of range. Please enter a valid size.");
        }




    }
}
```

43.

```
import java.util.*;
class Example{
        public static void main(String args[]){
                Scanner input=new Scanner(System.in);
                 System.out.print("Enter the first number: ");
        double firstNumber = input.nextDouble();


        System.out.print("Enter the second number: ");
        double secondNumber = input.nextDouble();


        System.out.print("Enter the operator (+,-,*,/,%,^): ");
        char operator = input.next().charAt(0);


        double result = 0;
        boolean validOperation = true;


        switch (operator) {
            case '+':
                result = firstNumber + secondNumber;
```

```
            break;
        case '-':
            result = firstNumber - secondNumber;
            break;
        case '*':
            result = firstNumber * secondNumber;
            break;
        case '/':
            if (secondNumber != 0) {
                result = firstNumber / secondNumber;
            } else {
                System.out.println("Error: Division by zero.");
                validOperation = false;
            }
            break;
        case '%':
            if (secondNumber != 0) {
                result = firstNumber % secondNumber;
            } else {
                System.out.println("Error: Division by zero.");
                validOperation = false;
            }
            break;
        case '^':
            result = Math.pow(firstNumber, secondNumber);
            break;
        default:
            System.out.println("Invalid operator.");
            validOperation = false;
            break;
    }


    if (validOperation) {
        System.out.printf("%.2f %c %.2f = %.2f%n", firstNumber, operator, secondNumber,
result);
    }




}
}
```

44.

```
import java.util.*;
class Example{
        public static void main(String args[]){
                Scanner input=new Scanner(System.in);
                  System.out.print("Enter a day number (1 to 28) for February 2022: ");
      int day = input.nextInt();


      if (day < 1 || day > 28) {
         System.out.println("Invalid day number. Please enter a number between 1 and 28.");

      }


      int baseDayOfWeek = 2;


      int dayOfWeek = (baseDayOfWeek + (day - 1)) % 7;


      String[] daysOfWeek = {"Sunday", "Monday", "Tuesday", "Wednesday", "Thursday",
"Friday", "Saturday"};
      String dayOfWeekName = daysOfWeek[dayOfWeek];


      System.out.println("The day of the week for February " + day + ", 2022 is: " +
dayOfWeekName);









    }
}
```

45.

```
import java.util.*;
class Example{
        public static void main(String args[]){
```

```
                Scanner input=new Scanner(System.in);

        System.out.print("Enter the row number (1 to 8): ");
        int row = input.nextInt();
        System.out.print("Enter the column number (1 to 8): ");
        int column = input.nextInt();


        if (row < 1 || row > 8 || column < 1 || column > 8) {
            System.out.println("Invalid input. Please enter row and column numbers between 1 and
8.");
        } else {

            if ((row % 2 == column % 2)) {
                System.out.println("The color of the square at (" + row + ", " + column + ") is White.");
            } else {
                System.out.println("The color of the square at (" + row + ", " + column + ") is Black.");
            }
        }
```

46.

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

        System.out.print("Enter the first integer: ");
        int a = input.nextInt();
        System.out.print("Enter the second integer: ");
        int b = input.nextInt();
        System.out.print("Enter the third integer: ");
        int c = input.nextInt();




        if (isPythagoreanTriple(a, b, c)) {
            System.out.println("The integers " + a + ", " + b + ", " + c + " form a Pythagorean triple.");
        } else {
            System.out.println("The integers " + a + ", " + b + ", " + c + " do not form a Pythagorean
triple.");
        }
```

```
    }


    private static boolean isPythagoreanTriple(int a, int b, int c) {

        int max = Math.max(a, Math.max(b, c));
        int min1, min2;

        if (max == a) {
            min1 = b;
            min2 = c;
        } else if (max == b) {
            min1 = a;
            min2 = c;
        } else {
            min1 = a;
            min2 = b;
        }


        return (min1 * min1 + min2 * min2 == max * max);
    }
}
```

47.

```
import java.util.*;
class Example{
          public static void main(String args[]){
                    Scanner input=new Scanner(System.in);
                     System.out.print("Enter the month (1 to 12): ");
        int month = input.nextInt();
        System.out.print("Enter the day (1 to 31): ");
        int day = input.nextInt();




        String season = getSeason(month, day);
        System.out.println("The season for " + month + "/" + day + " is: " + season);
    }

    private static String getSeason(int month, int day) {
```

```
        if (month < 1 || month > 12 || day < 1 || day > 31) {
            return "Invalid date";
        }


        if (month == 12 && day >= 21 || month == 1 || month == 2 || (month == 3 && day <= 19)) {
            return "Winter";
        } else if (month == 3 && day >= 20 || month == 4 || month == 5 || (month == 6 && day <=
20)) {
            return "Spring";
        } else if (month == 6 && day >= 21 || month == 7 || month == 8 || (month == 9 && day <=
21)) {
            return "Summer";
        } else if (month == 9 && day >= 22 || month == 10 || month == 11 || (month == 12 && day
<= 20)) {
            return "Autumn";
        } else {
            return "Invalid date";
        }
    }
}
```

48.

```
import java.util.*;
class Example{
        public static void main(String args[]){
                Scanner input=new Scanner(System.in);
                 System.out.print("Enter the month (1 to 12): ");
        int month = input.nextInt();
        System.out.print("Enter the day (1 to 31): ");
        int day = input.nextInt();




        String sign = getAstrologicalSign(month, day);
        System.out.println("The astrological sign for " + month + "/" + day + " is: " + sign);
    }

    private static String getAstrologicalSign(int month, int day) {

        if (month < 1 || month > 12 || day < 1 || day > 31) {
            return "Invalid date";
```

```
        }


        switch (month) {
            case 1:
                return (day >= 20) ? "Aquarius" : "Capricornus";
            case 2:
                return (day <= 18) ? "Aquarius" : "Pisces";
            case 3:
                return (day <= 20) ? "Pisces" : "Aries (Ram)";
            case 4:
                return (day <= 19) ? "Aries (Ram)" : "Taurus";
            case 5:
                return (day <= 20) ? "Taurus" : "Gemini";
            case 6:
                return (day <= 21) ? "Gemini" : "Cancer";
            case 7:
                return (day <= 22) ? "Cancer" : "Leo";
            case 8:
                return (day <= 22) ? "Leo" : "Virgo";
            case 9:
                return (day <= 22) ? "Virgo" : "Libra";
            case 10:
                return (day <= 23) ? "Libra" : "Scorpius";
            case 11:
                return (day <= 21) ? "Scorpius" : "Sagittarius";
            case 12:
                return (day <= 21) ? "Sagittarius" : "Capricornus";
            default:
                return "Invalid date";
        }
    }
}
```

49.

```
import java.util.*;
class Example{
        public static void main(String args[]){
                Scanner input=new Scanner(System.in);
                  System.out.print("Enter the basic salary of the employee: ");
        double basicSalary = input.nextDouble();
```

```
        double housingAllowance;
        double travelAllowance;


        if (basicSalary <= 10000) {
            housingAllowance = 0.20 * basicSalary;
            travelAllowance = 0.60 * basicSalary;
        } else if (basicSalary <= 20000) {
            housingAllowance = 0.25 * basicSalary;
            travelAllowance = 0.70 * basicSalary;
        } else {
            housingAllowance = 0.30 * basicSalary;
            travelAllowance = 0.75 * basicSalary;
        }


        double grossSalary = basicSalary + housingAllowance + travelAllowance;


        System.out.println("Basic Salary: " + basicSalary);
        System.out.println("Housing Allowance: " + housingAllowance);
        System.out.println("Travel Allowance: " + travelAllowance);
        System.out.println("Gross Salary: " + grossSalary);


    }
}
```

50.

```
import java.util.*;
class Example{
        public static void main(String args[]){
                Scanner input=new Scanner(System.in);
                  System.out.print("Enter the first angle in degrees: ");
        double angle1 = input.nextDouble();
        System.out.print("Enter the second angle in degrees: ");
        double angle2 = input.nextDouble();
        System.out.print("Enter the third angle in degrees: ");
        double angle3 = input.nextDouble();
```

```
        if (isValidTriangle(angle1, angle2, angle3)) {
            System.out.println("The angles can form a valid triangle.");
        } else {
            System.out.println("The angles cannot form a valid triangle.");
        }
    }

    private static boolean isValidTriangle(double a, double b, double c) {

        return (a > 0 && b > 0 && c > 0) && (a + b + c == 180);
    }
}
```

51.

```
import java.util.*;
class Example{
        public static void main(String args[]){
                Scanner input=new Scanner(System.in);
                  System.out.print("Enter your age: ");
        int age = input.nextInt();




        String classification = classifyAge(age);
        System.out.println("You are classified as: " + classification);
    }

    private static String classifyAge(int age) {

        if (age > 65) {
            return "Senior";
        } else if (age > 20) {
            return "Adult";
        } else if (age > 13) {
            return "Teenager";
        } else if (age > 1) {
            return "Child";
        } else {
            return "Infant";
        }
```

```
   }
}
```

52.

```
import java.util.*;
class Example{
        public static void main(String args[]){
                Scanner input=new Scanner(System.in);
                 System.out.print("Enter the X coordinate: ");
      double x = input.nextDouble();

      System.out.print("Enter the Y coordinate: ");
      double y = input.nextDouble();


      if (x == 0 && y == 0) {
         System.out.println("The point is at the Origin.");
      } else if (x == 0) {
         System.out.println("The point is on the Y-axis.");
      } else if (y == 0) {
         System.out.println("The point is on the X-axis.");
      } else if (x > 0 && y > 0) {
         System.out.println("The point is in Quadrant I.");
      } else if (x < 0 && y > 0) {
         System.out.println("The point is in Quadrant II.");
      } else if (x < 0 && y < 0) {
         System.out.println("The point is in Quadrant III.");
      } else if (x > 0 && y < 0) {
         System.out.println("The point is in Quadrant IV.");
      }

   }
}
```

53.

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

      System.out.print("Enter systolic blood pressure (SBP): ");
      int sbp = input.nextInt();
```

```
        System.out.print("Enter diastolic blood pressure (DBP): ");
        int dbp = input.nextInt();


        if (sbp >= 130 || dbp >= 90) {
            System.out.println("Status: High Pressure");
        } else if (sbp <= 100 || dbp <= 70) {
            System.out.println("Status: Low Pressure");
        } else if (sbp > 100 && sbp < 130 && dbp > 70 && dbp < 90) {
            System.out.println("Status: Normal");
        } else {
            System.out.println("Invalid readings");
        }


    }
}
```

54.

```
import java.util.*;
class Example{
        public static void main(String args[]){
                Scanner input=new Scanner(System.in);
                 System.out.print("Enter the website URL: ");
        String url = input.nextLine();


        String websiteType;
        if (url.endsWith(".com")) {
            websiteType = "Commercial website";
        } else if (url.endsWith(".org")) {
            websiteType = "Organization website";
        } else if (url.endsWith(".lk")) {
            websiteType = "Sri Lankan website";
        } else {
            websiteType = "Unknown website type";
        }


        System.out.println("The type of website is: " + websiteType);


    }
}
```

55.

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

      System.out.print("Enter the number: ");
      int number = input.nextInt();

      System.out.print("Enter the lower bound of the range: ");
      int lowerBound = input.nextInt();

      System.out.print("Enter the upper bound of the range: ");
      int upperBound = input.nextInt();


      if (number >= lowerBound && number <= upperBound) {
         System.out.println("The number " + number + " is within the range [" + lowerBound + ", "
+ upperBound + "].");
      } else {
         System.out.println("The number " + number + " is outside the range [" + lowerBound + ",
" + upperBound + "].");
      }


   }
}
```

56.

```
import java.util.*;
class Example{
        public static void main(String args[]){
                Scanner input=new Scanner(System.in);
                  System.out.print("Enter the value for a: ");
      int a = input.nextInt();

      System.out.print("Enter the value for b: ");
      int b = input.nextInt();


      boolean item = (a >= 10) && (b < 50);
```

```
        System.out.println("The value of item is: " + item);


    }
}
```

57.

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

        System.out.println("Enter the first date:");
        System.out.print("Month: ");
        int month1 = input.nextInt();
        System.out.print("Day: ");
        int day1 = input.nextInt();
        System.out.print("Year: ");
        int year1 = input.nextInt();


        System.out.println("Enter the second date:");
        System.out.print("Month: ");
        int month2 = input.nextInt();
        System.out.print("Day: ");
        int day2 = input.nextInt();
        System.out.print("Year: ");
        int year2 = input.nextInt();


        if (year1 < year2) {
            System.out.println("The first date comes first.");
        } else if (year1 > year2) {
            System.out.println("The second date comes first.");
        } else {

            if (month1 < month2) {
                System.out.println("The first date comes first.");
            } else if (month1 > month2) {
                System.out.println("The second date comes first.");
            } else {

                if (day1 < day2) {
```

```
                System.out.println("The first date comes first.");
            } else if (day1 > day2) {
                System.out.println("The second date comes first.");
            } else {

                System.out.println("Both dates are the same.");
            }
        }
    }


  }
}
```

58.

```
import java.util.*;
class Example{
        public static void main(String args[]){
                Scanner input=new Scanner(System.in);
                System.out.print("Enter year: ");
    int year = input.nextInt();

    System.out.print("Enter month: ");
    int month = input.nextInt();

    System.out.print("Enter day: ");
    int day = input.nextInt();


    int yo = year - ((14 - month) / 12);


    int x = yo + (yo / 4) - (yo / 100) + (yo / 400);


    int mo = month + (12 * ((14 - month) / 12)) - 2;


    int dof = (day + x + (31 * mo) / 12) % 7;


    String[] daysOfWeek = {"Sunday", "Monday", "Tuesday", "Wednesday", "Thursday",
"Friday", "Saturday"};
    String dayOfWeek = daysOfWeek[dof];
```

```
        System.out.println("On what day of the week was " + getMonthName(month) + " " + day +
", " + year + "?");
        System.out.println("Day of the week: " + dayOfWeek);

    }


    private static String getMonthName(int month) {
        String[] months = {"January", "February", "March", "April", "May", "June",
                           "July", "August", "September", "October", "November", "December"};
        return months[month - 1];
    }
}
```

59.

```
import java.util.*;
class Example{
          public static void main(String args[]){
                    Scanner input=new Scanner(System.in);
                    System.out.print("Enter the red value (0-255): ");
        int r = input.nextInt();

        System.out.print("Enter the green value (0-255): ");
        int g = input.nextInt();

        System.out.print("Enter the blue value (0-255): ");
        int b = input.nextInt();


        double rNorm = r / 255.0;
        double gNorm = g / 255.0;
        double bNorm = b / 255.0;


        double w = Math.max(rNorm, Math.max(gNorm, bNorm));


        double c, m, y, k;

        if (w == 0) {
            c = 0;
```

```
            m = 0;
            y = 0;
            k = 1;
        } else {
            c = (w - rNorm) / w;
            m = (w - gNorm) / w;
            y = (w - bNorm) / w;
            k = 1 - w;
        }


        System.out.printf("Cyan (C): %.2f%n", c);
        System.out.printf("Magenta (M): %.2f%n", m);
        System.out.printf("Yellow (Y): %.2f%n", y);
        System.out.printf("Black (K): %.2f%n", k);
    }
}
```

60.

```
import java.util.*;
class Example{
        public static void main(String args[]){
                Scanner input=new Scanner(System.in);
                System.out.print("Enter the weight of the parcel (kg): ");
        double weight = input.nextDouble();


        double baseCharge = 500.0;
        double additionalChargePerKg = 100.0;


        double totalCharge;
        if (weight <= 5) {
            totalCharge = baseCharge;
        } else {
            double extraWeight = weight - 5;
            totalCharge = baseCharge + (extraWeight * additionalChargePerKg);
        }


        System.out.printf("The courier charge for a parcel weighing %.2f kg is Rs.%.2f%n", weight,
totalCharge);

    }
```

```
}
```