OOPJ ASSIGNMENT – 3

Name – Nishant Nahar

Roll No – 241551078

Section – CSE-25

1. Create a Student class and store details of N students in an array of objects. Print the student having the highest average marks.

```
import java.util.*;
class Student {
    int roll;
    String name;
    int mar1, mar2, mar3;
    double avg() {
        return (mar1 + mar2 + mar3) / 3.0;
    }
    public static void main(String args[]) {
        System.out.println("Nishant Nahar -- 241551078");
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter Number of Student");
        int n = sc.nextInt();
        Student s[] = new Student[n];
        for (int i = 0; i < s.length; i++) {
            s[i] = new Student();
            System.out.print("Roll No ");
            s[i].roll = sc.nextInt();
            System.out.print("Name ");
            s[i].name = sc.next();
            System.out.print("Marks ( 3 Subs - Phy, Chem and Maths) :
");
            s[i].mar1 = sc.nextInt();
            s[i].mar2 = sc.nextInt();
            s[i].mar3 = sc.nextInt();
        }
        Student high = s[0];
        for (int i = 1; i < s.length; i++) {
            if (s[i].avg() > high.avg()) {
                high = s[i];
            }
        }
        System.out.println("The Student with Highest Average Marks " +
high.name);
        sc.close();
    }
}
```

OUTPUT

```
PS B:\java_lab\assignment_3> java .\assign_1.java
Nishant Nahar -- 241551078
Enter Number of Student 3
Roll No 101
Name Alice
Marks ( 3 Subs - Phy, Chem and Maths) : 80 90 70
Roll No 102
Name Bob
Marks ( 3 Subs - Phy, Chem and Maths) : 85 75 97
Roll No 103
Name Chary
Marks ( 3 Subs - Phy, Chem and Maths) : 90 8 78
The Student with Highest Average Marks Bob
```

2. Create an Employee class and sort employees by salary without using built-in sorting methods

```java
import java.util.*;
class Employee {
    int emp_id;
    float salary;
    public static void main(String args[]) {
        System.out.println("Nishant Nahar -- 241551078");
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter the Number of Employees: ");
        int n = sc.nextInt();
        Employee[] e = new Employee[n];
        for (int i = 0; i < e.length; i++) {
            e[i] = new Employee();
            System.out.print("Enter Employee ID: ");
            e[i].emp_id = sc.nextInt();
            System.out.print("Enter Salary: ");
            e[i].salary = sc.nextFloat();
        }
        for (int i = 0; i < e.length - 1; i++) {
            for (int j = 0; j < e.length - i - 1; j++) {
                if (e[j].salary > e[j + 1].salary) {
                    Employee temp = e[j];
                    e[j] = e[j + 1];
                    e[j + 1] = temp;
                }
            }
        }
        System.out.println("The Sorted List");
        for (int i = 0; i < e.length; i++) {
            System.out.println(e[i].emp_id + " -- " + e[i].salary);
        }
    }
}
```

OUTPUT

```
PS B:\java_lab\assignment_3> java .\assign_2.java
Nishant Nahar -- 241551078
Enter the Number of Employees: 3
Enter Employee ID: 1
Enter Salary: 50000
Enter Employee ID: 2
Enter Salary: 45000
Enter Employee ID: 3
Enter Salary: 55000
The Sorted List
2 -- 45000.0
1 -- 50000.0
3 -- 55000.0
```

3. Create a BankAccount class and find total balance of all savings accounts only

```java
import java.util.Scanner;
class BankAccount {
    double balance;

    public static void main(String[] args) {
        System.out.println("Nishant Nahar -- 241551078");
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter choice (a - Savings, b - Other): ");
        char choice = sc.next().charAt(0);
        System.out.print("Enter number of accounts: ");
        int n = sc.nextInt();
        BankAccount[] b = new BankAccount[n];
        for (int i = 0; i < n; i++) {
            b[i] = new BankAccount();
            b[i].balance = sc.nextDouble();
        }
        if (choice == 'a') {
            double total = 0;
            for (int i = 0; i < n; i++) {
                System.out.println(b[i].balance);
                total = total + b[i].balance;
            }
            System.out.println("Total = " + total);
        }
    }
}
```

OUTPUT

```
PS B:\java_lab\assignment_3> java .\assign_3.java
Nishant Nahar -- 241551078
Enter choice (a - Savings, b - Other): a
Enter number of accounts: 3
1000
2000
1230
1000.0
2000.0
1230.0
Total = 4230.0
```

4. Create a Book class and display books published after a given year

```java
import java.util.*;
class Books {
    String book_name;
    int year;
    public static void main(String[] args) {
        System.out.println("Nishant Nahar -- 241551078");
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter the number of books");
        int n = sc.nextInt();
        Books b[] = new Books[n];
        for (int i = 0; i < b.length; i++) {
            b[i] = new Books();
            System.out.println("Book Name - ");
            b[i].book_name = sc.next();
            System.out.println("Year of Publishing");
            b[i].year = sc.nextInt();
        }
        System.out.println("Enter the Year u want from");
        int y = sc.nextInt();
        for (int i = 0; i < b.length; i++) {
            if (b[i].year >= y) {
                System.out.println(b[i].book_name + " " + b[i].year);
            }
        }
    }
}
```

OUTPUT

```
PS B:\java_lab\assignment_3> java .\assign_4.java
Nishant Nahar -- 241551078
Enter the number of books
3
Book Name -
Java
Year of Publishing
2019
Book Name -
Python
Year of Publishing
2020
Book Name -
C
Year of Publishing
2015
Enter the Year u want from
2018
Java 2019
Python 2020
```

5. Create a Car class and count cars of a specific brand

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

```
        System.out.println("Nishant Nahar -- 241551078");
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter number of cars: ");
        int n = sc.nextInt();
        Cars[] c = new Cars[n];
        for (int i = 0; i < n; i++) {
            System.out.println("Enter brand for car " + (i + 1));
            c[i] = new Cars();
            c[i].brand = sc.next();
        }
        System.out.println("Enter the brand you want to search");
        String b = sc.next();
        int count = 0;
        for (int i = 0; i < n; i++) {
            if (b.equals(c[i].brand)) {
                count++;
            }
        }
        System.out.println("The Car Brand " + b + " appeared " + count +
" times");
    }
}
```

OUTPUT

```
PS B:\java_lab\assignment_3> java .\assign_5.java
Nishant Nahar -- 241551078
Enter number of cars: 3
Enter brand for car 1
kia
Enter brand for car 2
kia
Enter brand for car 3
honda
Enter the brand you want to search
kia
The Car Brand kia appeared 2 times
```

6. Create a Product class and detect duplicate product IDs using array of objects

```
import java.util.*;
class Product {
    int product_Id;
    public static void main(String[] args) {
        System.out.println("Nishant Nahar -- 241551078");
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter number of products: ");
        int n = sc.nextInt();
        Product[] p = new Product[n];
        for (int i = 0; i < p.length; i++) {
            p[i] = new Product();
            System.out.print("Enter Product ID: ");
            p[i].product_Id = sc.nextInt();
        }
```

```
        boolean Dup = false;
        for (int i = 0; i < p.length; i++) {
            for (int j = i + 1; j < p.length; j++) {
                if (p[i].product_Id == p[j].product_Id) {
                    System.out.println("Duplicate Product ID found: " +
p[i].product_Id);
                    Dup = true;
                    break;
                }
            }
        }
        if (!Dup) {
            System.out.println("No duplicate Product IDs found");
        }
    }
}
```

OUTPUT

```
PS B:\java_lab\assignment_3> java .\assign_6.java
Nishant Nahar -- 241551078
Enter number of products: 3
Enter Product ID: 102
Enter Product ID: 102
Enter Product ID: 101
Duplicate Product ID found: 102
```

7. Create a Rectangle class and find the rectangle with maximum area

```
import java.util.*;
class Rectangle {
    int length;
    int breadth;
    int area() {
        return length * breadth;
    }
    public static void main(String[] args) {
        System.out.println("Nishant Nahar -- 241551078");
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter number of rectangles: ");
        int n = sc.nextInt();
        Rectangle[] r = new Rectangle[n];
        for (int i = 0; i < r.length; i++) {
            r[i] = new Rectangle();
            System.out.print("Enter length: ");
            r[i].length = sc.nextInt();
            System.out.print("Enter breadth: ");
            r[i].breadth = sc.nextInt();
        }
        int maxArea = r[0].area();
        int loc = 0;
```

```
        for (int i = 1; i < r.length; i++) {
            if (r[i].area() > maxArea) {
                maxArea = r[i].area();
                loc = i;
            }
        }
        System.out.println("Rectangle - maximum area:");
        System.out.println("Length = " + r[loc].length);
        System.out.println("Breadth = " + r[loc].breadth);
        System.out.println("Area = " + maxArea);
    }
}
```

OUTPUT

```
PS B:\java_lab\assignment_3> java .\assign_7.java
Nishant Nahar -- 241551078
Enter number of rectangles: 3
Enter length: 4
Enter breadth: 5
Enter length: 3
Enter breadth: 6
Enter length: 5
Enter breadth: 5
Rectangle - maximum area:
Length = 5
Breadth = 5
Area = 25
```

8. Create a Student class and remove a student object based on roll number

```
import java.util.*;
class Student {
    int rollNo;
    String name;
    public static void main(String[] args) {
        System.out.println("Nishant Nahar -- 241551078");
        Scanner sc = new Scanner(System.in);
        int n = sc.nextInt();
        Student[] s = new Student[n];
        for (int i = 0; i < n; i++) {
            s[i] = new Student();
            System.out.println("Enter the RollNo and Name");
            s[i].rollNo = sc.nextInt();
            s[i].name = sc.next();
        }
        int remove_roll = sc.nextInt();
        Student[] s1 = new Student[n - 1];
        int j = 0;
        boolean found = false;
        for (int i = 0; i < n; i++) {
            if (s[i].rollNo == remove_roll) {
                found = true;
                continue;
```

```
            }
            if (j < s1.length) {
                s1[j] = s[i];
                j++;
            }
        }
        if (found) {
            for (int i = 0; i < s1.length; i++) {
                System.out.println(s1[i].rollNo + " " + s1[i].name);
            }
        } else {
            System.out.println("Student not found");
        }
    }
}
```

OUTPUT

```
PS B:\java_lab\assignment_3> java .\assign_8.java
Nishant Nahar -- 241551078
3
Enter the RollNo and Name
101
Aman
Enter the RollNo and Name
102
Amal
Enter the RollNo and Name
103
Anmol
102
101 Aman
103 Anmol
```

9. Create a Movie class and display movies with rating greater than 8.5

```
import java.util.*;
class Movie {
    String name;
    double rating;
    public static void main(String[] args) {
        System.out.println("Nishant Nahar -- 241551078");
        Scanner sc = new Scanner(System.in);
        int n = sc.nextInt();
        Movie[] m = new Movie[n];
        for (int i = 0; i < n; i++) {
            m[i] = new Movie();
            System.out.println("Movie Name and Rating");
            m[i].name = sc.next();
            m[i].rating = sc.nextDouble();
        }
        for (int i = 0; i < n; i++) {
            if (m[i].rating > 8.5) {
                System.out.println(m[i].name + " " + m[i].rating);
            }
```

```
        }
    }
}
```

OUTPUT

```
PS B:\java_lab\assignment_3> java .\assign_9.java
Nishant Nahar -- 241551078
3
Movie Name and Rating
ABCD
9
Movie Name and Rating
ABCD2
8.3
Movie Name and Rating
DDLJ
8.6
ABCD 9.0
DDLJ 8.6
```

10. Create a Laptop class and find the laptop with minimum price and maximum RAM

```
import java.util.*;
class Laptop {
    String brand;
    int ram;
    int price;
    public static void main(String[] args) {
        System.out.println("Nishant Nahar -- 241551078");
        Scanner sc = new Scanner(System.in);
        int n = sc.nextInt();
        Laptop[] l = new Laptop[n];
        for (int i = 0; i < n; i++) {
            l[i] = new Laptop();
            System.out.print("Enter Laptop Brand, Ram and Price");
            l[i].brand = sc.next();
            l[i].ram = sc.nextInt();
            l[i].price = sc.nextInt();
        }
        int minPrice = 0;
        int maxRam = 0;
        for (int i = 1; i < n; i++) {
            if (l[i].price < l[minPrice].price) {
                minPrice = i;
            }
            if (l[i].ram > l[maxRam].ram) {
                maxRam = i;
            }
        }
        System.out.println(l[minPrice].brand + " " + l[minPrice].ram + "
" + l[minPrice].price);
        System.out.println(l[maxRam].brand + " " + l[maxRam].ram + " " +
l[maxRam].price);
```

```
    }
}
```

OUTPUT

```
PS B:\java_lab\assignment_3> java .\assign_10.java
Nishant Nahar -- 241551078
3
Enter Laptop Brand, Ram and Price DELL 8 50000
Enter Laptop Brand, Ram and Price HP 16 60000
Enter Laptop Brand, Ram and Price LENOVO 14 45000
LENOVO 14 45000
HP 16 60000
```

11. Create a Person class and find the oldest and youngest person

```
import java.util.*;
class Person {
    String name;
    int age;
    public static void main(String[] args) {
        System.out.println("Nishant Nahar -- 241551078");
        Scanner sc = new Scanner(System.in);
        int n = sc.nextInt();
        Person[] p = new Person[n];
        for (int i = 0; i < n; i++) {
            System.out.println("Enter name and age");
            p[i] = new Person();
            p[i].name = sc.next();
            p[i].age = sc.nextInt();
        }
        int old = 0;
        int young = 0;
        for (int i = 1; i < n; i++) {
            if (p[i].age > p[old].age) {
                old = i;
            }
            if (p[i].age < p[young].age) {
                young = i;
            }
        }
        System.out.println(p[old].name + " " + p[old].age);
        System.out.println(p[young].name + " " + p[young].age);
    }}
```

OUTPUT

```
PS B:\java_lab\assignment_3> java .\assign_11.java
Nishant Nahar -- 241551078
3
Enter name and age
nishant 19
Enter name and age
doyel 17
Enter name and age
pankaj 34
pankaj 34
doyel 17
```

12. Create a Customer class and search customer by email ID

```java
import java.util.*;
class Customer {
    String name;
    String email;
    public static void main(String[] args) {
        System.out.println("Nishant Nahar -- 241551078");
        Scanner sc = new Scanner(System.in);
        int n = sc.nextInt();
        Customer[] c = new Customer[n];
        for (int i = 0; i < n; i++) {
            System.out.println("Enter name and email");
            c[i] = new Customer();
            c[i].name = sc.next();
            c[i].email = sc.next();
        }
        System.out.println("Enter the Email to be searched");
        String Email = sc.next();
        boolean found = false;
        for (int i = 0; i < n; i++) {
            if (c[i].email.equals(Email)) {
                System.out.println(c[i].name + " " + c[i].email);
                found = true;
                break;
            }
        }
        if (!found) {
            System.out.println("Customer not found");
        }
    }
}
```

OUTPUT

```
PS B:\java_lab\assignment_3> java .\assign_12.java
Nishant Nahar -- 241551078
3
Enter name and email
alice alice@mp.com
Enter name and email
bob bob@mp.com
Enter name and email
nishant nishu@mp.com
Enter the Email to be searched
nishu@mp.com
nishant nishu@mp.com
```

13. Create a Student class and compute class average, highest and lowest marks

```java
import java.util.*;
class Student {
    int rollNo;
```

```
    int marks;
    public static void main(String[] args) {
        System.out.println("Nishant Nahar -- 241551078");
        Scanner sc = new Scanner(System.in);
        int n = sc.nextInt();
        Student[] s = new Student[n];
        for (int i = 0; i < n; i++) {
            System.out.println("Enter roll number and marks");
            s[i] = new Student();
            s[i].rollNo = sc.nextInt();
            s[i].marks = sc.nextInt();
        }
        int total = 0;
        int highest = s[0].marks;
        int lowest = s[0].marks;
        for (int i = 0; i < n; i++) {
            total = total + s[i].marks;
            if (s[i].marks > highest) {
                highest = s[i].marks;
            }
            if (s[i].marks < lowest) {
                lowest = s[i].marks;
            }
        }
        double average = (double) total / n;
        System.out.println("Class Average: " + average);
        System.out.println("Highest Marks: " + highest);
        System.out.println("Lowest Marks: " + lowest);
    }
}
```

OUTPUT

```
PS B:\java_lab\assignment_3> java .\assign_13.java
Nishant Nahar -- 241551078
3
Enter roll number and marks
1 80
Enter roll number and marks
2 60
Enter roll number and marks
3 78
Class Average: 72.66666666666667
Highest Marks: 80
Lowest Marks: 60
```

14. Create a Train class and display trains between source and destination

```
import java.util.*;
class Train {
    String name;
    String source;
    String destination;
    public static void main(String[] args) {
```

```
        System.out.println("Nishant Nahar -- 241551078");
        Scanner sc = new Scanner(System.in);
        int n = sc.nextInt();
        Train[] t = new Train[n];
        for (int i = 0; i < n; i++) {
            System.out.println("Enter train name, source, and
destination");
            t[i] = new Train();
            t[i].name = sc.next();
            t[i].source = sc.next();
            t[i].destination = sc.next();
        }
        System.out.println("Enter Source and Destination");
        String Source = sc.next();
        String Destination = sc.next();
        boolean found = false;
        for (int i = 0; i < n; i++) {
            if (t[i].source.equals(Source) &&
t[i].destination.equals(Destination)) {
                System.out.println(t[i].name + " " + t[i].source + " " +
t[i].destination);
                found = true;
            }
        }
        if (!found) {
            System.out.println("No trains found between " + Source + "
and " + Destination);
        }
    }
}
```

OUTPUT

```
PS B:\java_lab\assignment_3> java .\assign_14.java
Nishant Nahar -- 241551078
3
Enter train name, source, and destination
rj delhi mumbai
Enter train name, source, and destination
sk mumbai delhi
Enter train name, source, and destination
dd delhi kolkata
Enter Source and Destination
delhi mumbai
rj delhi mumbai
```

15. Create a Mobile class and count mobiles in different price ranges

```
import java.util.*;
class Mobile {
    String brand;
    int price;
    public static void main(String[] args) {
```

```
        System.out.println("Nishant Nahar -- 241551078");
        Scanner sc = new Scanner(System.in);
        int n = sc.nextInt();
        Mobile[] m = new Mobile[n];
        for (int i = 0; i < n; i++) {
            System.out.println("Enter mobile brand and price");
            m[i] = new Mobile();
            m[i].brand = sc.next();
            m[i].price = sc.nextInt();
        }
        int count_25 = 0;
        int count_50 = 0;
        int count_75 = 0;
        int count_abv_75 = 0;
        for (int i = 0; i < n; i++) {
            if (m[i].price <= 25000) {
                count_25++;
            } else if (m[i].price <= 50000) {
                count_50++;
            } else if (m[i].price <= 75000) {
                count_75++;
            } else {
                count_abv_75++;
            }
        }
        System.out.println("Mobiles in price 0-25000: " + count_25);
        System.out.println("Mobiles in price 25001-50000: " + count_50);
        System.out.println("Mobiles in price 50001-75000: " + count_75);
        System.out.println("Mobiles in price 75001 and above: " +
count_abv_75);
    }
}
```

OUTPUT

```
PS B:\java_lab\assignment_3> java .\assign_15.java
Nishant Nahar -- 241551078
3
Enter mobile brand and price
samsung 20000
Enter mobile brand and price
apple 70000
Enter mobile brand and price
oppo 40000
Mobiles in price 0-25000: 1
Mobiles in price 25001-50000: 1
Mobiles in price 50001-75000: 1
Mobiles in price 75001 and above: 0
```

16. Create a Player class and find top scorer and average score

```
import java.util.*;
class Player {
    String name;
    int score;
    public static void main(String[] args) {
```

```
        System.out.println("Nishant Nahar -- 241551078");
        Scanner sc = new Scanner(System.in);
        int n = sc.nextInt();
        Player[] p = new Player[n];
        for (int i = 0; i < n; i++) {
            System.out.println("Enter player name and score");
            p[i] = new Player();
            p[i].name = sc.next();
            p[i].score = sc.nextInt();
        }
        int top = 0;
        int sum = 0;
        for (int i = 0; i < n; i++) {
            sum += p[i].score;
            if (p[i].score > p[top].score) {
                top = i;
            }
        }
        double avg = (double) sum / n;
        System.out.println("Top Scorer: " + p[top].name + " " +
p[top].score);
        System.out.println("Average Score: " + avg);
    }
}
```

OUTPUT

```
PS B:\java_lab\assignment_3> java .\assign_16.java
Nishant Nahar -- 241551078
3
Enter player name and score
prince 35
Enter player name and score
messi 70
Enter player name and score
ronaldo 90
Top Scorer: ronaldo 90
Average Score: 65.0
```

17. Create a Vehicle class and separate two-wheelers and four-wheelers

```
import java.util.*;
class Vehicle {
    String name;
    int wheels;
    public static void main(String[] args) {
        System.out.println("Nishant Nahar -- 241551078");
        Scanner sc = new Scanner(System.in);
        int n = sc.nextInt();
        Vehicle[] v = new Vehicle[n];
        for (int i = 0; i < n; i++) {
            System.out.println("Enter vehicle name and number of
wheels");
            v[i] = new Vehicle();
```

```
            v[i].name = sc.next();
            v[i].wheels = sc.nextInt();
        }
        System.out.println("Two-wheelers:");
        for (int i = 0; i < n; i++) {
            if (v[i].wheels == 2) {
                System.out.println(v[i].name);
            }
        }
        System.out.println("Four-wheelers:");
        for (int i = 0; i < n; i++) {
            if (v[i].wheels == 4) {
                System.out.println(v[i].name);
            }
        }
    }
}
```

OUTPUT

```
PS B:\java_lab\assignment_3> java .\assign_17.java
Nishant Nahar -- 241551078
3
Enter vehicle name and number of wheels
bike 2
Enter vehicle name and number of wheels
car 4
Enter vehicle name and number of wheels
scooty 2
Two-wheelers:
bike
scooty
Four-wheelers:
car
```

18. Create a Product class and apply discount to products above a given price

```
import java.util.*;
class Product {
    String name;
    double price;
    public static void main(String[] args) {
        System.out.println("Nishant Nahar -- 241551078");
        Scanner sc = new Scanner(System.in);
        int n = sc.nextInt();
        Product[] p = new Product[n];
        for (int i = 0; i < n; i++) {
            System.out.println("Enter product name and price");
            p[i] = new Product();
            p[i].name = sc.next();
            p[i].price = sc.nextDouble();
        }
        double limit = sc.nextDouble();
        double discount = sc.nextDouble();
```

```
        for (int i = 0; i < n; i++) {
            if (p[i].price > limit) {
                p[i].price = p[i].price - (p[i].price * discount / 100);
            }
        }
        for (int i = 0; i < n; i++) {
            System.out.println(p[i].name + " " + p[i].price);
        }
    }
}
```

OUTPUT

```
PS B:\java_lab\assignment_3> java .\assign_18.java
Nishant Nahar -- 241551078
3
Enter product name and price
tv 50000
Enter product name and price
laptop 79000
Enter product name and price
keyboard 10000
23000
10
tv 45000.0
laptop 71100.0
keyboard 10000.0
```

19. Create a Student class and rank students based on total marks

```
import java.util.*;
class Student {
    String name;
    int marks;
    public static void main(String[] args) {
        System.out.println("Nishant Nahar -- 241551078");
        Scanner sc = new Scanner(System.in);
        int n = sc.nextInt();
        Student[] s = new Student[n];
        for (int i = 0; i < n; i++) {
            System.out.println("Enter student name and marks");
            s[i] = new Student();
            s[i].name = sc.next();
            s[i].marks = sc.nextInt();
        }
        for (int i = 0; i < n - 1; i++) {
            for (int j = i + 1; j < n; j++) {
                if (s[i].marks < s[j].marks) {
                    Student temp = s[i];
                    s[i] = s[j];
                    s[j] = temp;
                }
            }
        }
        System.out.println("Ranked Students:");
```

```
        for (int i = 0; i < n; i++) {
            System.out.println((i + 1) + ". " + s[i].name + " " +
s[i].marks);
        }
    }
}
```

OUTPUT

```
PS B:\java_lab\assignment_3> java .\assign_19.java
Nishant Nahar -- 241551078
3
Enter student name and marks
prince 90
Enter student name and marks
ram 88
Enter student name and marks
kuhu 7
Ranked Students:
1. prince 90
2. ram 88
3. kuhu 7
```

20. Create an Employee class and find department-wise highest paid employee

```
import java.util.*;
class Employee {
    String name;
    String dept;
    int salary;
    public static void main(String[] args) {
        System.out.println("Nishant Nahar -- 241551078");
        Scanner sc = new Scanner(System.in);
        int n = sc.nextInt();
        Employee[] e = new Employee[n];
        for (int i = 0; i < n; i++) {
            System.out.println("Enter employee name, department, and
salary");
            e[i] = new Employee();
            e[i].name = sc.next();
            e[i].dept = sc.next();
            e[i].salary = sc.nextInt();
        }
        String[] depts = new String[n];
        int deptCount = 0;
        for (int i = 0; i < n; i++) {
            boolean exists = false;
            for (int j = 0; j < deptCount; j++) {
                if (depts[j].equals(e[i].dept)) {
                    exists = true;
                    break;
                }
            }
            if (!exists) {
```

```
                depts[deptCount] = e[i].dept;
                deptCount++;
            }
        }
        for (int i = 0; i < deptCount; i++) {
            int idx = -1;
            for (int j = 0; j < n; j++) {
                if (e[j].dept.equals(depts[i])) {
                    if (idx == -1 || e[j].salary > e[idx].salary) {
                        idx = j;
                    }
                }
            }
            System.out.println("Department: " + depts[i] + ", Highest
Paid: " + e[idx].name + " & " + e[idx].salary);
        }
    }
}
```

OUTPUT

```
PS B:\java_lab\assignment_3> java .\assign_20.java
Nishant Nahar -- 241551078
3
Enter employee name, department, and salary
nishant it 56000
Enter employee name, department, and salary
prince hr 23000
Enter employee name, department, and salary
karan it 45000
Department: it, Highest Paid: nishant & 56000
Department: hr, Highest Paid: prince & 23000
```

21. Create a Book class and merge two arrays of books without duplicates

```
import java.util.*;
class Book {
    String name;
    public static void main(String[] args) {
        System.out.println("Nishant Nahar -- 241551078");
        Scanner sc = new Scanner(System.in);
        int n1 = sc.nextInt();
        Book[] b1 = new Book[n1];
        for (int i = 0; i < n1; i++) {
            System.out.println("Enter book name for array 1");
            b1[i] = new Book();
            b1[i].name = sc.next();
        }
        int n2 = sc.nextInt();
        Book[] b2 = new Book[n2];
        for (int i = 0; i < n2; i++) {
            System.out.println("Enter book name for array 2");
            b2[i] = new Book();
```

```
            b2[i].name = sc.next();
        }
        Book[] merged = new Book[n1 + n2];
        int m = 0;
        for (int i = 0; i < n1; i++) {
            merged[m++] = b1[i];
        }
        for (int i = 0; i < n2; i++) {
            boolean exists = false;
            for (int j = 0; j < m; j++) {
                if (b2[i].name.equals(merged[j].name)) {
                    exists = true;
                    break;
                }
            }
            if (!exists) {
                merged[m++] = b2[i];
            }
        }
        System.out.println("Merged books without duplicates:");
        for (int i = 0; i < m; i++) {
            System.out.println(merged[i].name);
        }
    }
}
```

OUTPUT

```
PS B:\java_lab\assignment_3> java .\assign_21.java
Nishant Nahar -- 241551078
3
Enter book name for array 1
java
Enter book name for array 1
python
Enter book name for array 1
c
3
Enter book name for array 2
python
Enter book name for array 2
go java
Enter book name for array 2
Merged books without duplicates:
java
python
c
go
```

22. Create a BankAccount class and remove all zero-balance accounts

```
import java.util.*;
class BankAccount {
    String name;
    double balance;
    public static void main(String[] args) {
```

```
        System.out.println("Nishant Nahar -- 241551078");
        Scanner sc = new Scanner(System.in);
        int n = sc.nextInt();
        BankAccount[] a = new BankAccount[n];
        for (int i = 0; i < n; i++) {
            System.out.println("Enter account holder name and balance");
            a[i] = new BankAccount();
            a[i].name = sc.next();
            a[i].balance = sc.nextDouble();
        }
        int count = 0;
        for (int i = 0; i < n; i++) {
            if (a[i].balance != 0) {
                count++;
            }
        }
        BankAccount[] nonZero = new BankAccount[count];
        int j = 0;
        for (int i = 0; i < n; i++) {
            if (a[i].balance != 0) {
                nonZero[j++] = a[i];
            }
        }
        System.out.println("Accounts with non-zero balance:");
        for (int i = 0; i < nonZero.length; i++) {
            System.out.println(nonZero[i].name + " " +
nonZero[i].balance);
        }
    }
}
```

OUTPUT

```
PS B:\java_lab\assignment_3> java .\assign_22.java
Nishant Nahar -- 241551078
3
Enter account holder name and balance
nishant 1000
Enter account holder name and balance
prince 0
Enter account holder name and balance
charlie 10
Accounts with non-zero balance:
nishant 1000.0
charlie 10.0
```

23. Create a Hotel class and find highest-rated hotel city-wise

```
import java.util.*;
class Hotel {
    String name;
    String city;
    double rating;
    public static void main(String[] args) {
```

```
        System.out.println("Nishant Nahar -- 241551078");
        Scanner sc = new Scanner(System.in);
        int n = sc.nextInt();
        Hotel[] h = new Hotel[n];
        for (int i = 0; i < n; i++) {
            System.out.println("Enter hotel name, city, and rating");
            h[i] = new Hotel();
            h[i].name = sc.next();
            h[i].city = sc.next();
            h[i].rating = sc.nextDouble();
        }
        String[] cities = new String[n];
        int cityCount = 0;
        for (int i = 0; i < n; i++) {
            boolean exists = false;
            for (int j = 0; j < cityCount; j++) {
                if (cities[j].equals(h[i].city)) {
                    exists = true;
                    break;
                }
            }
            if (!exists) {
                cities[cityCount++] = h[i].city;
            }
        }
        for (int i = 0; i < cityCount; i++) {
            int idx = -1;
            for (int j = 0; j < n; j++) {
                if (h[j].city.equals(cities[i])) {
                    if (idx == -1 || h[j].rating > h[idx].rating) {
                        idx = j;
                    }
                }
            }
            System.out.println("City: " + cities[i] + ", Highest Rated
Hotel: " + h[idx].name + " " + h[idx].rating);
        }
    }
}
```

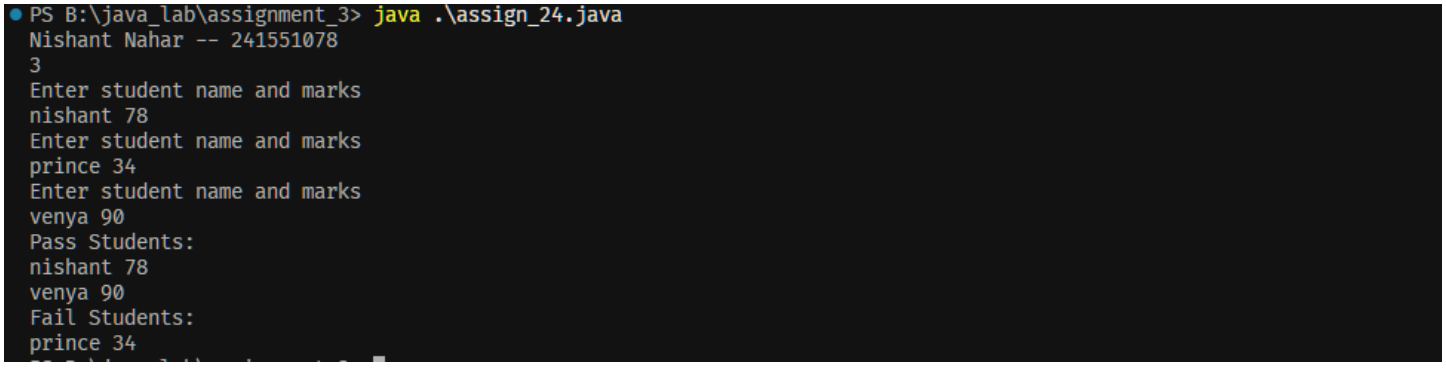
OUTPUT

```
PS B:\java_lab\assignment_3> java .\assign_23.java
Nishant Nahar -- 241551078
3
Enter hotel name, city, and rating
hotela mumbai 4.5
Enter hotel name, city, and rating
hotelb delhi 4.3
Enter hotel name, city, and rating
hotelc mumbai 5
City: mumbai, Highest Rated Hotel: hotelc 5.0
City: delhi, Highest Rated Hotel: hotelb 4.3
```

24. Create a Student class and separate pass and fail students

```java
import java.util.*;
class Student {
    String name;
    int marks;
    public static void main(String[] args) {
        System.out.println("Nishant Nahar -- 241551078");
        Scanner sc = new Scanner(System.in);
        int n = sc.nextInt();
        Student[] s = new Student[n];
        for (int i = 0; i < n; i++) {
            System.out.println("Enter student name and marks");
            s[i] = new Student();
            s[i].name = sc.next();
            s[i].marks = sc.nextInt();
        }
        System.out.println("Pass Students:");
        for (int i = 0; i < n; i++) {
            if (s[i].marks >= 40) {
                System.out.println(s[i].name + " " + s[i].marks);
            }
        }
        System.out.println("Fail Students:");
        for (int i = 0; i < n; i++) {
            if (s[i].marks < 40) {
                System.out.println(s[i].name + " " + s[i].marks);
            }
        }
    }
}
```

OUTPUT



```
PS B:\java_lab\assignment_3> java .\assign_24.java
Nishant Nahar -- 241551078
3
Enter student name and marks
nishant 78
Enter student name and marks
prince 34
Enter student name and marks
venya 90
Pass Students:
nishant 78
venya 90
Fail Students:
prince 34
```

25. Create an Item class and find most expensive item using object comparison

```java
import java.util.*;
class Item {
    String name;
    double price;
```

```
    public static void main(String[] args) {
        System.out.println("Nishant Nahar -- 241551078");
        Scanner sc = new Scanner(System.in);
        int n = sc.nextInt();
        Item[] it = new Item[n];
        for (int i = 0; i < n; i++) {
            System.out.println("Enter item name and price");
            it[i] = new Item();
            it[i].name = sc.next();
            it[i].price = sc.nextDouble();
        }
        Item max = it[0];
        for (int i = 1; i < n; i++) {
            if (it[i].price > max.price) {
                max = it[i];
            }
        }
        System.out.println("Most Expensive Item: " + max.name + " " +
max.price);
    }
}
```

OUTPUT

```
PS B:\java_lab\assignment_3> java .\assign_25.java
Nishant Nahar -- 241551078
3
Enter item name and price
pc 150000
Enter item name and price
tv 90000
Enter item name and price
phone 45000
Most Expensive Item: pc 150000.0
```

26. Create an Employee class and update salary based on years of experience

```
import java.util.*;
class Employee {
    String name;
    int salary;
    int exp;
    public static void main(String[] args) {
        System.out.println("Nishant Nahar -- 241551078");
        Scanner sc = new Scanner(System.in);
        int n = sc.nextInt();
        Employee[] e = new Employee[n];
        for (int i = 0; i < n; i++) {
            System.out.println("Enter employee name, salary and
experience");
            e[i] = new Employee();
            e[i].name = sc.next();
            e[i].salary = sc.nextInt();
```

```
            e[i].exp = sc.nextInt();
        }
        System.out.println("Enter the increment");
        int incr = sc.nextInt();
        for (int i = 0; i < n; i++) {
            e[i].salary += e[i].exp * incr;
        }
        System.out.println("Updated Employee Salaries:");
        for (int i = 0; i < n; i++) {
            System.out.println(e[i].name + " " + e[i].salary);
        }
    }
}
```

OUTPUT

```
PS B:\java_lab\assignment_3> java .\assign_26.java
Nishant Nahar -- 241551078
3
Enter employee name, salary and experience
nishant 67000 8
Enter employee name, salary and experience
prince 34000 3
Enter employee name, salary and experience
ram 40000 1
Enter the increment
2300
Updated Employee Salaries:
nishant 85400
prince 40900
ram 42300
```

27. Create a Library class and implement search, issue, and return using array of objects

```
import java.util.*;
class Library {
    String bookName;
    boolean issued;
    public static void main(String[] args) {
        System.out.println("Nishant Nahar -- 241551078");
        Scanner sc = new Scanner(System.in);
        int n = sc.nextInt();
        Library[] lib = new Library[n];
        for (int i = 0; i < n; i++) {
            System.out.println("Enter book name");
            lib[i] = new Library();
            lib[i].bookName = sc.next();
            lib[i].issued = false;
        }
        while (true) {
            System.out.println("1.Search 2.Issue 3.Return 4.Exit");
            int choice = sc.nextInt();
            if (choice == 4)
                break;
            System.out.println("Enter book name");
```

```
            String name = sc.next();
            if (choice == 1) {
                searchBook(lib, name);
            } else if (choice == 2) {
                issueBook(lib, name);
            } else if (choice == 3) {
                returnBook(lib, name);
            }
        }
    }
    static void searchBook(Library[] lib, String name) {
        boolean found = false;
        for (int i = 0; i < lib.length; i++) {
            if (lib[i].bookName.equals(name)) {
                System.out.println("Book found: " + lib[i].bookName + ",
Issued: " + lib[i].issued);
                found = true;
                break;
            }
        }
        if (!found)
            System.out.println("Book not found");
    }
    static void issueBook(Library[] lib, String name) {
        boolean found = false;
        for (int i = 0; i < lib.length; i++) {
            if (lib[i].bookName.equals(name)) {
                if (!lib[i].issued) {
                    lib[i].issued = true;
                    System.out.println("Book issued: " +
lib[i].bookName);
                } else {
                    System.out.println("Book already issued");
                }
                found = true;
                break;
            }
        }
        if (!found)
            System.out.println("Book not found");
    }
    static void returnBook(Library[] lib, String name) {
        boolean found = false;
        for (int i = 0; i < lib.length; i++) {
            if (lib[i].bookName.equals(name)) {
                if (lib[i].issued) {
                    lib[i].issued = false;
```

```
                    System.out.println("Book returned: " +
lib[i].bookName);
                } else {
                    System.out.println("Book was not issued");
                }
                found = true;
                break;
            }
        }
        if (!found)
            System.out.println("Book not found");
    }
}
```

OUTPUT

```
PS B:\java_lab\assignment_3> java .\assign_27.java
Nishant Nahar -- 241551078
3
Enter book name
java
Enter book name
python
Enter book name
go
1.Search 2.Issue 3.Return 4.Exit
1
Enter book name
go
Book found: go, Issued: false
1.Search 2.Issue 3.Return 4.Exit
3
Enter book name
java
Book was not issued
1.Search 2.Issue 3.Return 4.Exit
3
Enter book name
python
Book was not issued
1.Search 2.Issue 3.Return 4.Exit
4
```

28. Create a Student class and assign grades (A/B/C/F) based on marks

```
import java.util.*;
class Student {
    String name;
    int marks;
    char grade;
    public static void main(String[] args) {
        System.out.println("Nishant Nahar -- 241551078");
        Scanner sc = new Scanner(System.in);
        int n = sc.nextInt();
        Student[] s = new Student[n];
        for (int i = 0; i < n; i++) {
            System.out.println("Enter student name and marks");
            s[i] = new Student();
            s[i].name = sc.next();
            s[i].marks = sc.nextInt();
        }
        for (int i = 0; i < n; i++) {
            if (s[i].marks >= 80) {
```

```
                s[i].grade = 'A';
            } else if (s[i].marks >= 60) {
                s[i].grade = 'B';
            } else if (s[i].marks >= 40) {
                s[i].grade = 'C';
            } else {
                s[i].grade = 'F';
            }
        }
        System.out.println("Student Grades:");
        for (int i = 0; i < n; i++) {
            System.out.println(s[i].name + " " + s[i].marks + " " +
s[i].grade);
        }
    }
}
```

OUTPUT

```
PS B:\java_lab\assignment_3> java .\assign_28.java
Nishant Nahar -- 241551078
3
Enter student name and marks
nishant 88
Enter student name and marks
venya 78
Enter student name and marks
prince 45
Student Grades:
nishant 88 A
venya 78 B
prince 45 C
```

29. Create an Employee class and find employees with same salary but different roles

```
import java.util.*;
class Employee {
    String name;
    String role;
    int salary;
    public static void main(String[] args) {
        System.out.println("Nishant Nahar -- 241551078");
        Scanner sc = new Scanner(System.in);
        int n = sc.nextInt();
        Employee[] e = new Employee[n];
        for (int i = 0; i < n; i++) {
            System.out.println("Enter employee name, role and salary");
            e[i] = new Employee();
            e[i].name = sc.next();
            e[i].role = sc.next();
            e[i].salary = sc.nextInt();
        }
        System.out.println("Employees with same salary but different
roles:");
```

```
        for (int i = 0; i < n - 1; i++) {
            for (int j = i + 1; j < n; j++) {
                if (e[i].salary == e[j].salary &&
!e[i].role.equals(e[j].role)) {
                    System.out.println(e[i].name + " (" + e[i].role + ")
and " + e[j].name + " (" + e[j].role + ") - Salary: " + e[i].salary);
                }
            }
        }
    }
}
```

OUTPUT

```
PS B:\java_lab\assignment_3> java .\assign_29.java
Nishant Nahar -- 241551078
3
Enter employee name, role and salary
nishant manager 50000
Enter employee name, role and salary
prince analyst 45000
Enter employee name, role and salary
doyel engineer 45000
Employees with same salary but different roles:
prince (analyst) and doyel (engineer) - Salary: 45000
```

30. Create a Hotel class and sort hotels by rating and then by price

```
import java.util.*;
class Hotel {
    String name;
    double rating;
    double price;
    public static void main(String[] args) {
        System.out.println("Nishant Nahar -- 241551078");
        Scanner sc = new Scanner(System.in);
        int n = sc.nextInt();
        Hotel[] h = new Hotel[n];
        for (int i = 0; i < n; i++) {
            System.out.println("Enter hotel name, rating and price");
            h[i] = new Hotel();
            h[i].name = sc.next();
            h[i].rating = sc.nextDouble();
            h[i].price = sc.nextDouble();
        }
        for (int i = 0; i < n - 1; i++) {
            for (int j = i + 1; j < n; j++) {
                if (h[i].rating < h[j].rating) {
                    Hotel temp = h[i];
                    h[i] = h[j];
                    h[j] = temp;
                }
```

```
            }
        }
        System.out.println("Hotels sorted by rating (descending):");
        for (int i = 0; i < n; i++) {
            System.out.println(h[i].name + " Rating: " + h[i].rating + "
Price: " + h[i].price);
        }
        for (int i = 0; i < n - 1; i++) {
            for (int j = i + 1; j < n; j++) {
                if (h[i].price > h[j].price) {
                    Hotel temp = h[i];
                    h[i] = h[j];
                    h[j] = temp;
                }
            }
        }
        System.out.println("Hotels sorted by price (ascending):");
        for (int i = 0; i < n; i++) {
            System.out.println(h[i].name + " Rating: " + h[i].rating + "
Price: " + h[i].price);
        }
    }
}
```

OUTPUT

```
PS B:\java_lab\assignment_3> java .\assign_30.java
Nishant Nahar -- 241551078
3
Enter hotel name, rating and price
hotela 4.5 2300
Enter hotel name, rating and price
hotelb 4.7 7000
Enter hotel name, rating and price
hotelc 3.5 4000
Hotels sorted by rating (descending):
hotelb Rating: 4.7 Price: 7000.0
hotela Rating: 4.5 Price: 2300.0
hotelc Rating: 3.5 Price: 4000.0
Hotels sorted by price (ascending):
hotela Rating: 4.5 Price: 2300.0
hotelc Rating: 3.5 Price: 4000.0
hotelb Rating: 4.7 Price: 7000.0
```

31. Write a Java program that accepts N integers using command line arguments and prints the largest and smallest number

```
class Numbers {
    public static void main(String[] args) {
        System.out.println("Nishant Nahar -- 241551078");
        int n = args.length;
        int[] a = new int[n];
        for (int i = 0; i < n; i++) {
            a[i] = Integer.parseInt(args[i]);
        }
        int max = a[0], min = a[0];
        for (int i = 1; i < n; i++) {
            if (a[i] > max)
```

```
                max = a[i];
            if (a[i] < min)
                min = a[i];
        }
        System.out.println("Largest: " + max);
        System.out.println("Smallest: " + min);
    }
}
```

OUTPUT

```
PS B:\java_lab\assignment_3> java .\assign_31.java 10 20 30
Nishant Nahar -- 241551078
Largest: 30
Smallest: 10
```

32. Write a program to calculate the sum and average of numbers passed through command line arguments

```
class SumAvg {
    public static void main(String[] args) {
        System.out.println("Nishant Nahar -- 241551078");
        int n = args.length;
        int sum = 0;
        for (int i = 0; i < n; i++) {
            sum += Integer.parseInt(args[i]);
        }
        double avg = (double) sum / n;
        System.out.println("Sum: " + sum);
        System.out.println("Average: " + avg);
    }
}
```

OUTPUT

```
PS B:\java_lab\assignment_3> java .\assign_32.java 10 20 35
Nishant Nahar -- 241551078
Sum: 65
Average: 21.666666666666668
PS B:\java_lab\assignment_3>
```

33. Write a Java program that accepts student name, roll number, and marks using command line arguments and prints the student result

```
class Student {
    String name;
    int roll;
    int marks;
    public static void main(String[] args) {
        System.out.println("Nishant Nahar -- 241551078");
        Student s = new Student();
        s.name = args[0];
        s.roll = Integer.parseInt(args[1]);
```

```
        s.marks = Integer.parseInt(args[2]);
        System.out.println("Name: " + s.name);
        System.out.println("Roll: " + s.roll);
        System.out.println("Marks: " + s.marks);
        if (s.marks >= 40)
            System.out.println("Result: Pass");
        else
            System.out.println("Result: Fail");
    }
}
```

OUTPUT

```
PS B:\java_lab\assignment_3> java .\assign_33.java nishant 1 87
Nishant Nahar -- 241551078
Name: nishant
Roll: 1
Marks: 87
Result: Pass
```

34. Write a program that accepts two numbers and an operator (+, -, ×, /) using command line arguments and performs the operation

```
class Calc {
    public static void main(String[] args) {
        System.out.println("Nishant Nahar -- 241551078");
        double n1 = Double.parseDouble(args[0]);
        double n2 = Double.parseDouble(args[1]);
        char op = args[2].charAt(0);
        double res = 0;
        if (op == '+')
            res = n1 + n2;
        else if (op == '-')
            res = n1 - n2;
        else if (op == '*')
            res = n1 * n2;
        else if (op == '/')
            res = n1 / n2;
        System.out.println("Result: " + res);
    }
}
```

OUTPUT

```
PS B:\java_lab\assignment_3> java .\assign_34.java 10 5 *
Nishant Nahar -- 241551078
Result: 50.0
```

35. Write a Java program that accepts multiple numbers via command line arguments and prints only prime numbers

```
class PrimeNumbers {
    public static void main(String[] args) {
        System.out.println("Nishant Nahar -- 241551078");
```

```
        int n = args.length;
        for (int i = 0; i < n; i++) {
            int num = Integer.parseInt(args[i]);
            boolean prime = true;
            if (num < 2)
                prime = false;
            for (int j = 2; j <= num / 2; j++) {
                if (num % j == 0) {
                    prime = false;
                    break;
                }
            }
            if (prime)
                System.out.println(num);
        }
    }
}
```

OUTPUT

```
PS B:\java_lab\assignment_3> java .\assign_35.java 10 7 14
Nishant Nahar -- 241551078
7
PS B:\java_lab\assignment_3> java .\assign_35.java 10 7 13
Nishant Nahar -- 241551078
7
13
```

36. Write a program that takes a string using command line arguments and counts uppercase, lowercase, digits, and special character

```
class CharCount {
    public static void main(String[] args) {
        System.out.println("Nishant Nahar -- 241551078");
        String s = args[0];
        int u = 0, l = 0, d = 0, sp = 0;
        for (int i = 0; i < s.length(); i++) {
            char c = s.charAt(i);
            if (Character.isUpperCase(c))
                u++;
            else if (Character.isLowerCase(c))
                l++;
            else if (Character.isDigit(c))
                d++;
            else
                sp++;
        }
        System.out.println("Uppercase: " + u);
        System.out.println("Lowercase: " + l);
        System.out.println("Digits: " + d);
        System.out.println("Special: " + sp);
```

```
    }
}
```

OUTPUT

```
PS B:\java_lab\assignment_3> java .\assign_36.java Abc231$%#
Nishant Nahar -- 241551078
Uppercase: 1
Lowercase: 2
Digits: 3
Special: 3
```

37. Write a Java program that accepts employee salaries via command line arguments and displays salaries above the average salary

```
class Salary {
    public static void main(String[] args) {
        System.out.println("Nishant Nahar -- 241551078");
        int n = args.length;
        double[] s = new double[n];
        double sum = 0;
        for (int i = 0; i < n; i++) {
            s[i] = Double.parseDouble(args[i]);
            sum += s[i];
        }
        double avg = sum / n;
        System.out.println("Salaries above average:");
        for (int i = 0; i < n; i++) {
            if (s[i] > avg)
                System.out.println(s[i]);
        }
    }
}
```

OUTPUT

```
PS B:\java_lab\assignment_3> java .\assign_37.java 30000 50000 10000
Nishant Nahar -- 241551078
Salaries above average:
50000.0
PS B:\java_lab\assignment_3> java .\assign_37.java 40000 50000 10000
Nishant Nahar -- 241551078
Salaries above average:
40000.0
50000.0
```

38. Write a program that accepts array size and elements via command line arguments, stores them in an array of objects, and prints the detail

```
class Item {
    String name;
    int val;
    public static void main(String[] args) {
```

```
        System.out.println("Nishant Nahar -- 241551078");
        int n = Integer.parseInt(args[0]);
        Item[] it = new Item[n];
        for (int i = 0; i < n; i++) {
            it[i] = new Item();
            it[i].name = args[1 + i * 2];
            it[i].val = Integer.parseInt(args[2 + i * 2]);
            System.out.println(it[i].name + " " + it[i].val);
        }
    }
}
```

OUTPUT

```
PS B:\java_lab\assignment_3> java .\assign_38.java 3 nishant 10 prince 20 ram 28
Nishant Nahar -- 241551078
nishant 10
prince 20
ram 28
```

39. Write a Java program that accepts file name and word via command line arguments and counts how many times the word appears in the file

```
import java.io.*;
class WordCount {
    public static void main(String[] args) throws Exception {
        String fname = args[0];
        String word = args[1];
        BufferedReader br = new BufferedReader(new FileReader(fname));
        String line;
        int count = 0;
        while ((line = br.readLine()) != null) {
            String[] w = line.split("\\s+");
            for (int i = 0; i < w.length; i++) {
                if (w[i].equals(word))
                    count++;
            }
        }
        br.close();
        System.out.println("Word count: " + count);
    }
}
```

OUTPUT

```
PS B:\java_lab\assignment_3> java .\assign_39.java sample.txt hello
Word count: 7
```

assignment_3 > sample.txt

```
hello
hello
hello
hello
hello
hello
hello
```

40. Write a Java program that accepts student marks using command line arguments and prints grade distribution (A/B/C/F)

```java
public static void main(String[] args) {
    System.out.println("Nishant Nahar -- 241551078");
    int A = 0, B = 0, C = 0, F = 0;
    for (int i = 0; i < args.length; i++) {
        int m = Integer.parseInt(args[i]);
        if (m >= 80) {
            A++;
        } else if (m >= 60) {
            B++;
        } else if (m >= 40) {
            C++;
        } else {
            F++;
        }
    }
    System.out.println("A: " + A);
    System.out.println("B: " + B);
    System.out.println("C: " + C);
    System.out.println("F: " + F);
}
```

OUTPUT

```
PS B:\java_lab\assignment_3> java .\assign_40.java 85 70 34
Nishant Nahar -- 241551078
A: 1
B: 1
C: 0
F: 1
```