

Core Java

ASSIGNMENT 1

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ROLL NO:
CLASS: TYBBACA
GUIDE: PROF. DESHMUKH SHIVANI
ASSIGNMENT BASED ON: INTRODUCTION TO JAVA

ASSIGNMENT 1

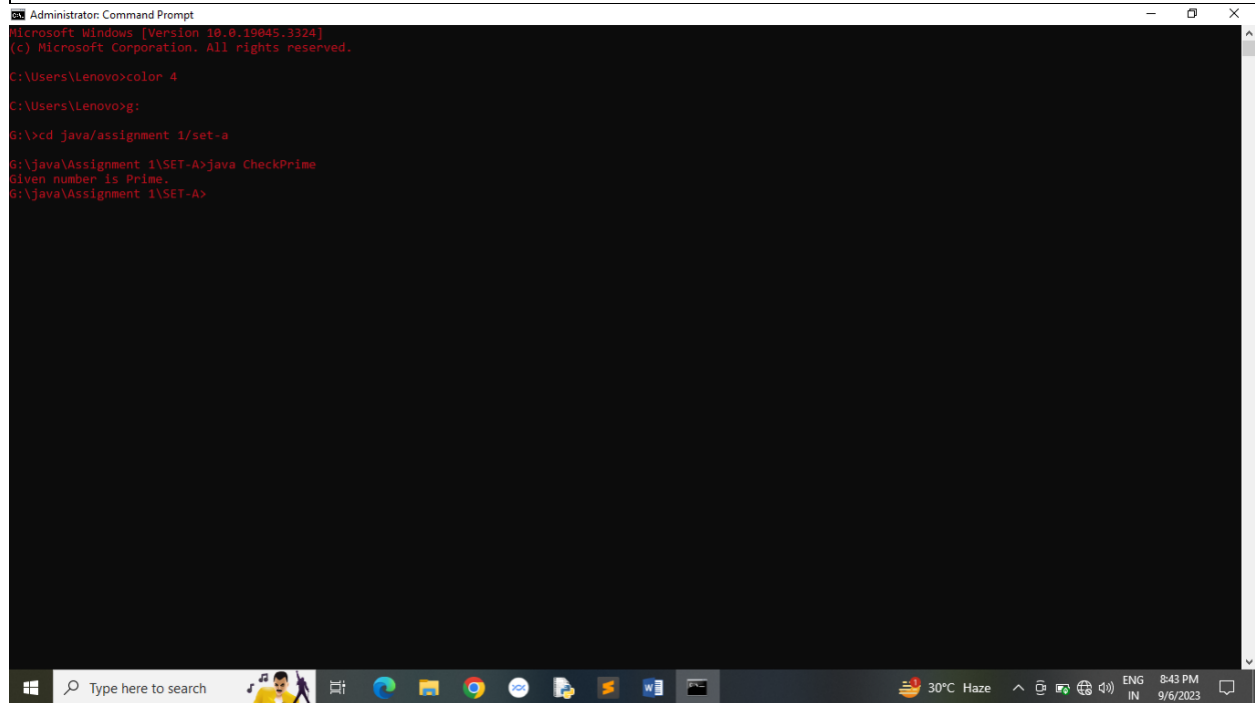
SET-A

Q.1 Write a java Program to check whether given number is Prime or Not.

Ans:

```
import java.util.Scanner;
class CheckPrime{
    public static void main(String []para)
    {
        Scanner scan=new Scanner(System.in);
        System.out.println("Enter the Number :");
        int num=scan.nextInt();
        if(num>1){
            if(num%2!=0){
                System.out.print("Given number is Prime.");
            }
            else{
                System.out.print("Given number is not Prime.");
            }
        }
    }
}
```

Output:



The screenshot shows a Windows Command Prompt window with the following text:

```
Administrator: Command Prompt
Microsoft Windows [Version 10.0.19045.3324]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Lenovo>color 4
C:\Users\Lenovo>g:
G:\>cd java/assignment 1/set-a
G:\java\Assignment 1\SET-A>java CheckPrime
Given number is Prime.
G:\java\Assignment 1\SET-A>
```

The window title bar indicates it is an Administrator Command Prompt. The taskbar at the bottom shows the search bar, task view, and several application icons. The system tray on the right shows the temperature (30°C), weather (Haze), and the date and time (8:43 PM, 9/6/2023).

ASSIGNMENT 1

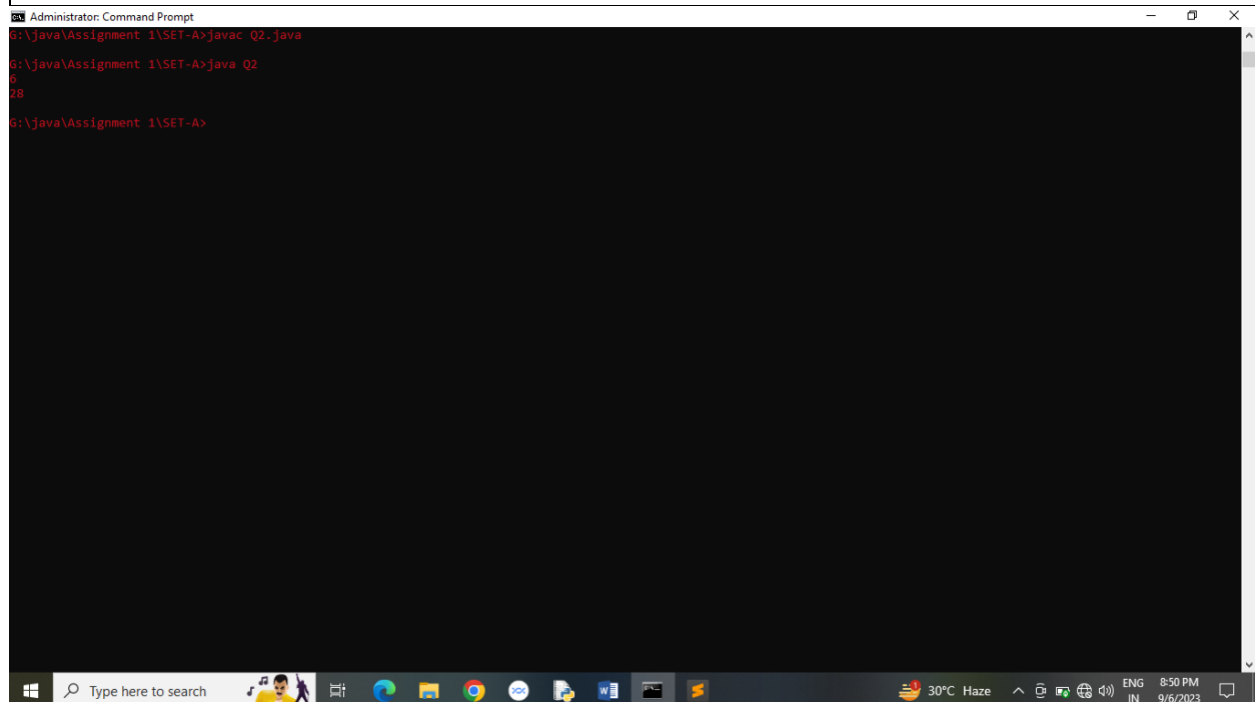
SET-A

Q.2 Write a java Program to display all the perfect numbers between 1 to n.

Ans:

```
class Q2{
    public static void main(String []para)
    {
        int n=100;
        for(int i=1;i<=n;i++){
            int sum=0;
            for(int j=1;j<i;j++){
                if(i%j==0){
                    sum+=j;
                }
            }
            if(sum==i){
                System.out.println(i);
            }
        }
    }
}
```

Output:



```
Administrator: Command Prompt
G:\java\Assignment 1\SET-A>javac Q2.java
G:\java\Assignment 1\SET-A>java Q2
6
28
G:\java\Assignment 1\SET-A>
```

ASSIGNMENT 1

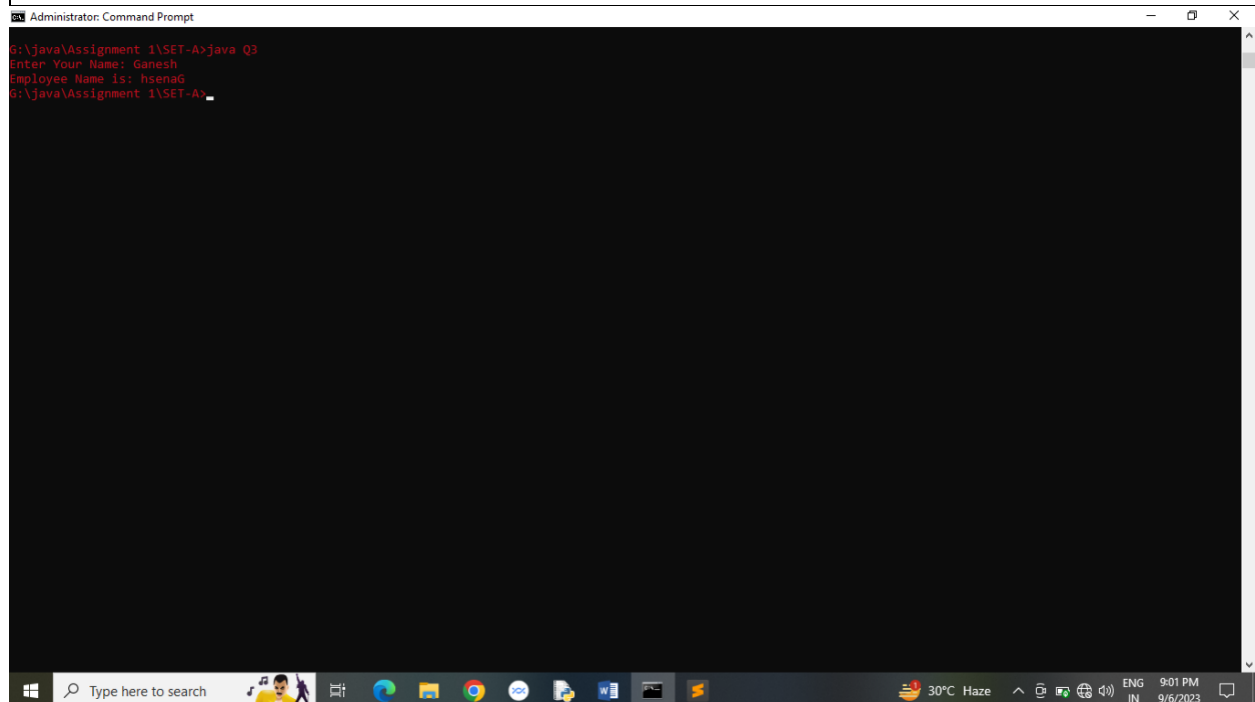
SET-A

Q.3 Write a java Program to accept employee name from a user and display it in reverse order.

Ans:

```
import java.util.*;
class Q3{
    public static void main(String[] para)
    {
        Scanner sc=new Scanner(System.in);
        System.out.print("Enter Your Name: ");
        String name=sc.nextLine();
        char ch;
        String rev="";
        for(int i=0;i<name.length();i++){
            ch=name.charAt(i);
            rev=ch+rev;
        }
        System.out.print("Employee Name is: "+rev);
    }
}
```

Output:



```
Administrator: Command Prompt
G:\java\Assignment 1\SET-A>java Q3
Enter Your Name: Ganesh
Employee Name is: hsenag
G:\java\Assignment 1\SET-A>
```

ASSIGNMENT 1

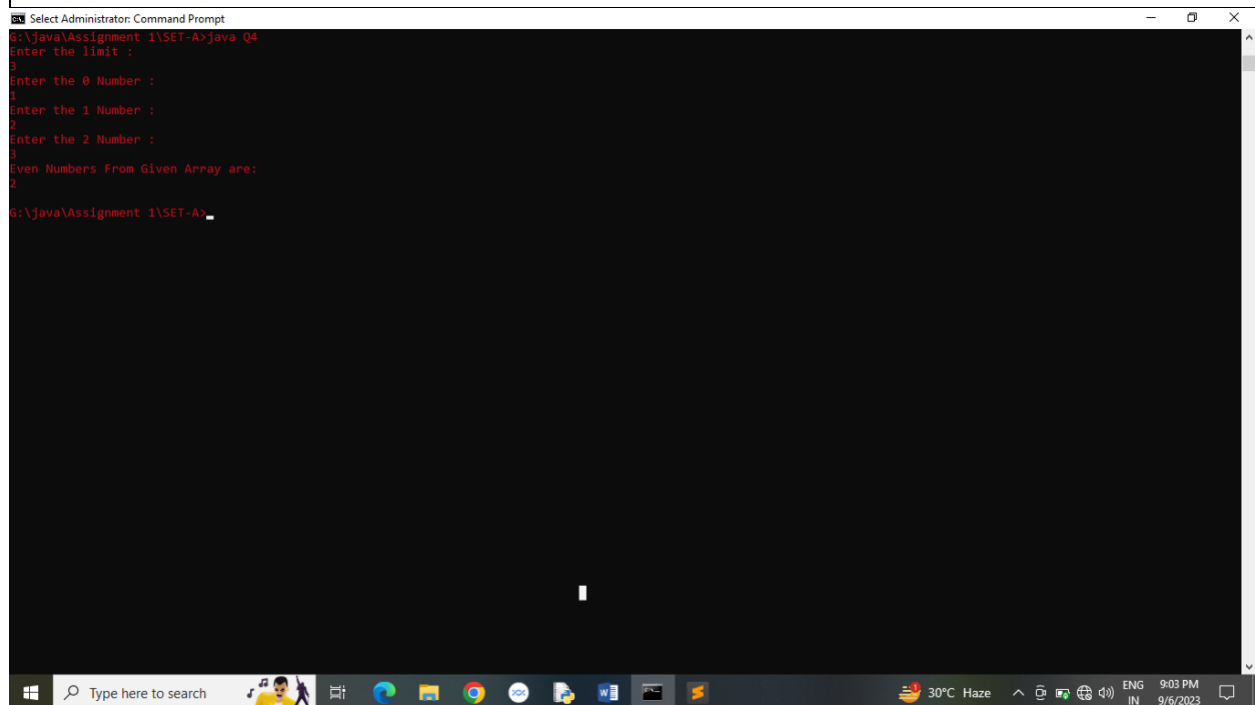
SET-A

Q.4 Write a java program to display all the even numbers from an array. (Use Command Line arguments)

Ans:

```
import java.util.*;
class Q4{
    public static void main(String []para){
        Scanner scan=new Scanner(System.in);
        System.out.println("Enter the limit :");
        int n=scan.nextInt();
        int[] array;
        array = new int[n];
        for(int i=0;i<n;i++){
            System.out.println("Enter the "+i+" Number :");
            array[i]=scan.nextInt();
        }
        System.out.println("Even Numbers From Given Array are: ");
        for(int i=0;i<array.length;i++){
            if(array[i]%2==0){
                System.out.println(array[i]);
            }
        }
    }
}
```

Output:



```
Select Administrator: Command Prompt
G:\Java\Assignment_1\SET-A>java Q4
Enter the limit :
3
Enter the 0 Number :
1
Enter the 1 Number :
2
Enter the 2 Number :
3
Even Numbers From Given Array are:
2
G:\Java\Assignment_1\SET-A>
```

ASSIGNMENT 1

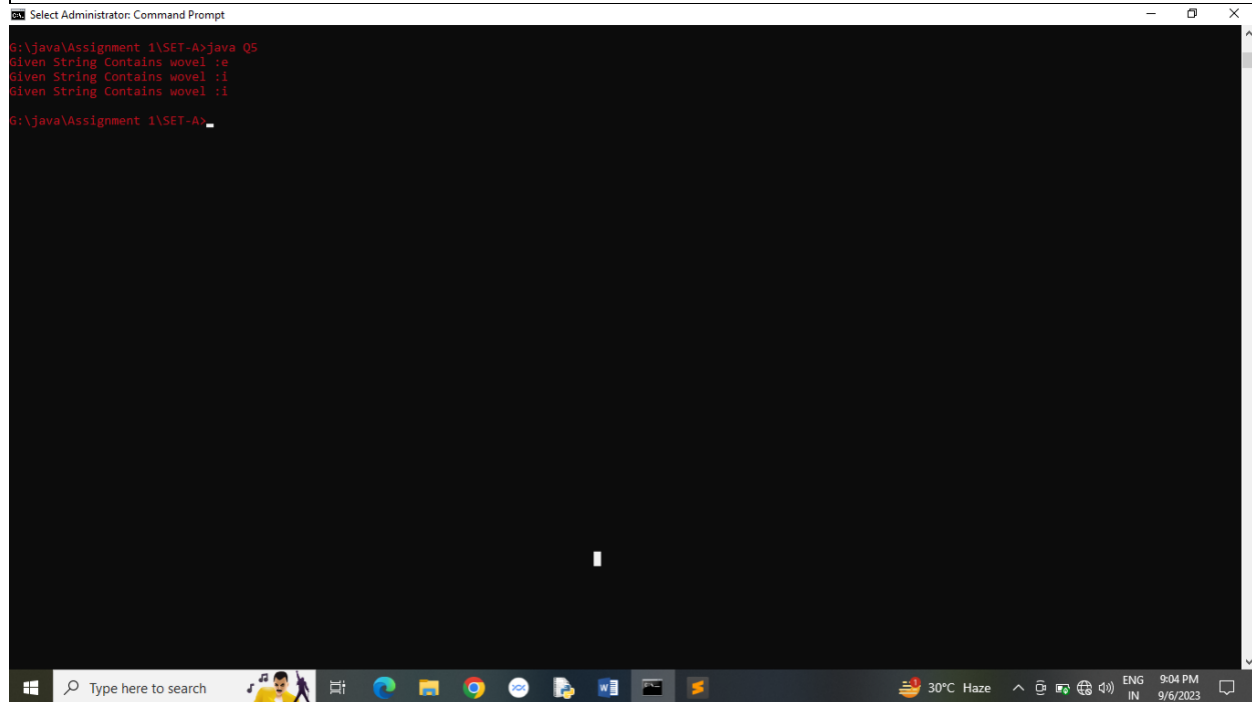
SET-A

Q.5 Write a java program to display the vowels from a given string.

Ans:

```
class Q5{
    public static void main(String[] args) {
        String str="Hey This is GT";
        for(int i=0;i<str.length();i++){
            if(str.charAt(i)=='a' || str.charAt(i)=='e' ||
               str.charAt(i)=='i' || str.charAt(i)=='o' || str.charAt(i)=='u' ||
               str.charAt(i)=='A' || str.charAt(i)=='E' ||
               str.charAt(i)=='I' || str.charAt(i)=='O' || str.charAt(i)=='U'){
                System.out.println("Given String Contains wovel :"+str.charAt(i));
            }
        }
    }
}
```

Output:



```
Select Administrator: Command Prompt

G:\java\Assignment 1\SET-A>java Q5
Given String Contains wovel :e
Given String Contains wovel :i
Given String Contains wovel :i
G:\java\Assignment 1\SET-A>
```

ASSIGNMENT 1

SET-B

Q.1 Write a java program to accept n city names and display them in ascending order.

Ans:

```
import java.util.Arrays.*;
import java.util.*;
class Q1{
    public static void main(String []para){
        Scanner sc=new Scanner(System.in);
        System.out.println("Enter how many Cities: ");
        int n=sc.nextInt();
        String[] cities;
        cities=new String[n];
        for(int i=0;i<n;i++){
            cities[i]=sc.nextLine();
            System.out.println("Enter the "+i+" city name: ");
            cities[i]=sc.nextLine();
        }
        Arrays.sort(cities);
        System.out.println(Arrays.toString(cities));
    }
}
```

Output:

```
Administrator: Command Prompt
G:\java\Assignment 1\SET-B>java Q1
Enter how many Cities:
3
Enter the 0 city name:
Ganeshnagar
Enter the 1 city name:
Wakadi
Enter the 2 city name:
Shrirampur
[Ganeshnagar, Shrirampur, Wakadi]
G:\java\Assignment 1\SET-B>
```

ASSIGNMENT 1

SET-B

Q.2 Write a java program to accept n numbers from a user store only Armstrong numbers in an array and display it.

Ans:

```
import java.util.*;
class Q2{
    public static void main(String[] args) {
        Scanner scan=new Scanner(System.in);
        System.out.println("Enter the value of n: ");
        int n=scan.nextInt();
        int[] numbers=new int[n];
        int[] armstrongnum=new int[n];
        int count=0;
        System.out.println("Enter "+n+" number :");
        for (int i=0; i<n;i++ ) {
            numbers[i]=scan.nextInt();
            if(armstrong(numbers[i])){
                armstrongnum[count]=numbers[i];
                count++;
            }
        }
        System.out.println("Armstrong Numbers: ");
        for (int i=0;i<n;i++ ) {
            System.out.println(armstrongnum[i]);
        }
    }
    public static boolean armstrong(int num){
        int original=num;
        double sum=0;
        while(num!=0){
            int digit=num%10;
            sum=sum+Math.pow(digit,3);
            num=num/10;
        }
        return sum==original;
    }
}
```

Output:


```
Administrator: Command Prompt
G:\java\Assignment 1\SET-B>java Q2
Enter the value of n:
2
Enter 2 number :
8
407
Armstrong Numbers:
407
0
G:\java\Assignment 1\SET-B>
```

ASSIGNMENT 1

SET-B

Q.3 Write a java program to search given name into the array, if it is found then display its index otherwise display appropriate message.

Ans:

```
import java.util.Scanner;
public class Q3
{
    public static void main(String[] args)
    {
        int n, x, flag = 0, i = 0;
        Scanner s = new Scanner(System.in);
        System.out.print("Enter Array Limit:");
        n = s.nextInt();
        int a[] = new int[n];
        System.out.println("Enter the elements:");
        for(i = 0; i < n; i++)
        {
            a[i] = s.nextInt();
        }
        System.out.print("Find Element:");
        x = s.nextInt();
        for(i = 0; i < n; i++)
        {
            if(a[i] == x)
            {
                flag = 1;
                break;
            }
            else
            {
                flag = 0;
            }
        }
        if(flag == 1)
        {
            System.out.println("Element found at position:"+i);
        }
        else
        {
            System.out.println("Element not found");
        }
    }
}
```

Output:

```
Administrator: Command Prompt
G:\java\Assignment 1\SET-B>java Q3
Enter Array Limit:3
Enter the elements:
2
5
7
Find Element:5
Element found at position:1
G:\java\Assignment 1\SET-B>
```

ASSIGNMENT 1

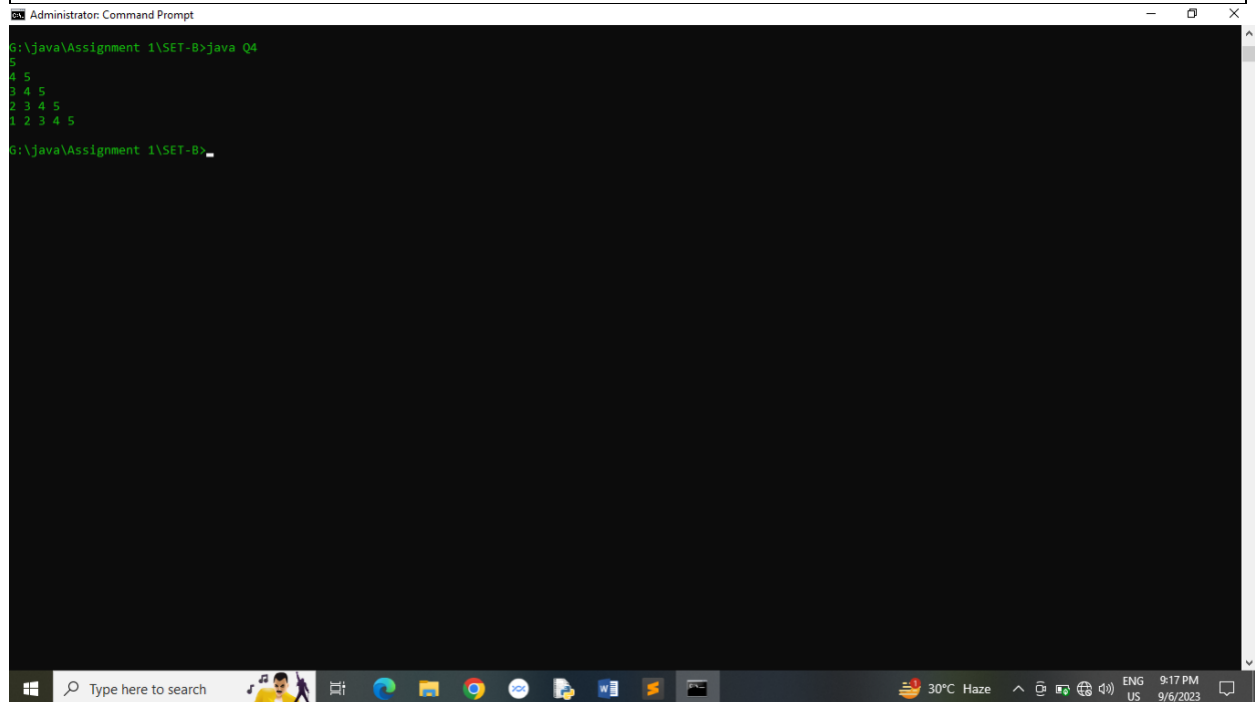
SET-B

Q.4 Write a java program to display following pattern: 5 4 5 3 4 5 2 3 4 5 1 2 3 4 5

Ans:

```
public class Q4
{
    public static void main(String[] Arg) {
        for (int i = 5; i >= 1; i--) {
            for (int j = i; j <= 5; j++) {
                System.out.print(j + " ");
            }
            System.out.println();
        }
    }
}
```

Output:



```
G:\java\Assignment 1\SET-B>java Q4
5
5 4
5 4 3
5 4 3 2
5 4 3 2 1
G:\java\Assignment 1\SET-B>
```

ASSIGNMENT 1

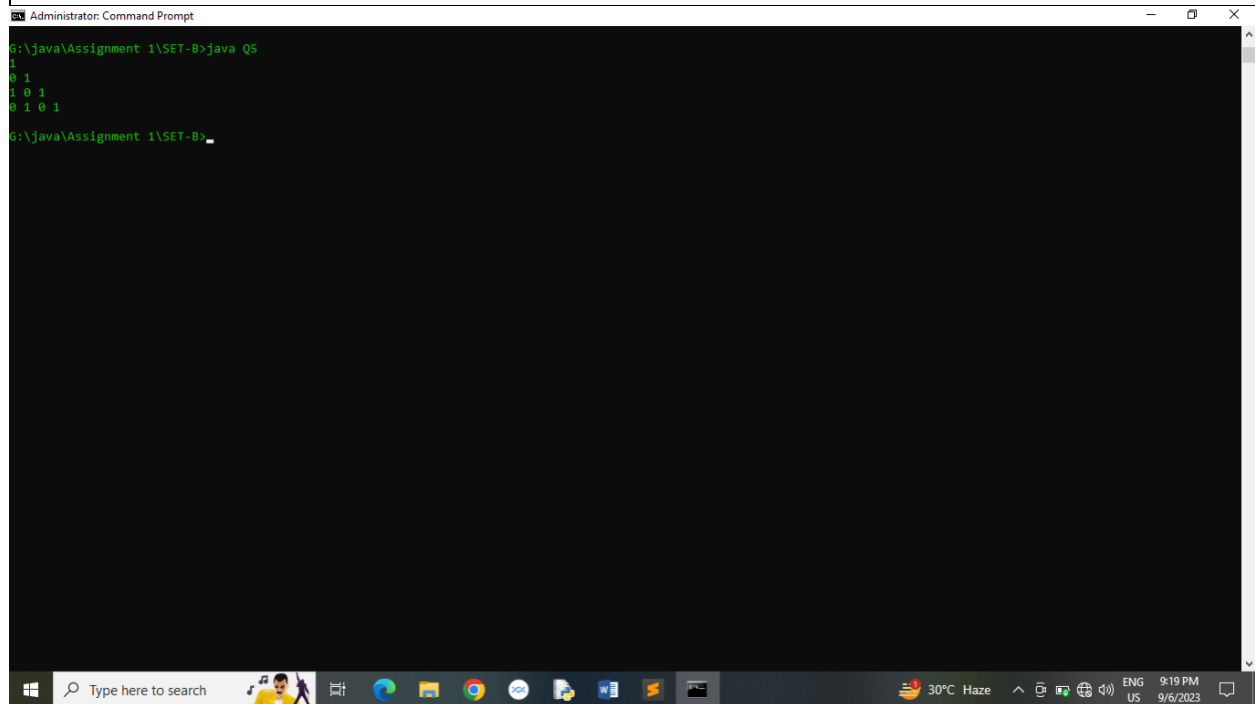
SET-B

Q.5 Write a java program to display following pattern: 1 0 1 0 1 0 1 0

Ans:

```
class Q5{
    public static void main(String[] para){
        for (int i = 1; i <= 4; i++) {
            for (int j = 1; j <= i; j++) {
                if ((i + j) % 2 == 0) {
                    System.out.print("1 ");
                } else {
                    System.out.print("0 ");
                }
            }
            System.out.println();
        }
    }
}
```

Output:



```
Administrator: Command Prompt
G:\java\Assignment 1\SET-B>java Q5
1
0 1
1 0 1
0 1 0 1
G:\java\Assignment 1\SET-B>
```

ASSIGNMENT 1

SET-C

Q.1 Write a java program to count the frequency of each character in a given string.

Ans:

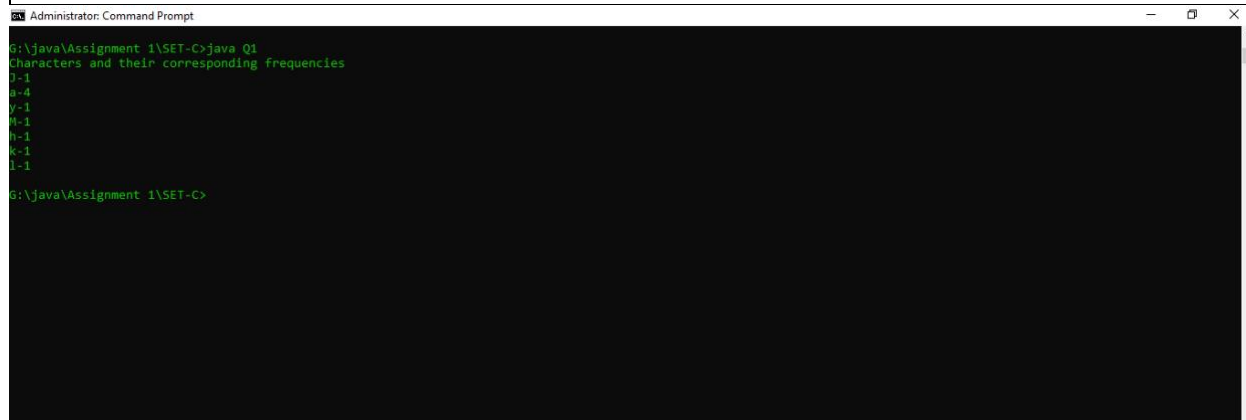
```
public class Q1
{
    public static void main(String[] args) {
        String str = "Jay Mahakal";
        int[] freq = new int[str.length()];
        int i, j;

        char string[] = str.toCharArray();

        for(i = 0; i < str.length(); i++) {
            freq[i] = 1;
            for(j = i+1; j < str.length(); j++) {
                if(string[i] == string[j]) {
                    freq[i]++;
                    string[j] = '0';
                }
            }
        }

        System.out.println("Characters and their corresponding frequencies");
        for(i = 0; i < freq.length; i++) {
            if(string[i] != ' ' && string[i] != '0')
                System.out.println(string[i] + "-" + freq[i]);
        }
    }
}
```

Output:



```
Administrator: Command Prompt
G:\java\Assignment 1\SET-C>java Q1
Characters and their corresponding frequencies
J-1
a-4
y-1
M-1
h-1
k-1
l-1
G:\java\Assignment 1\SET-C>
```

ASSIGNMENT 1

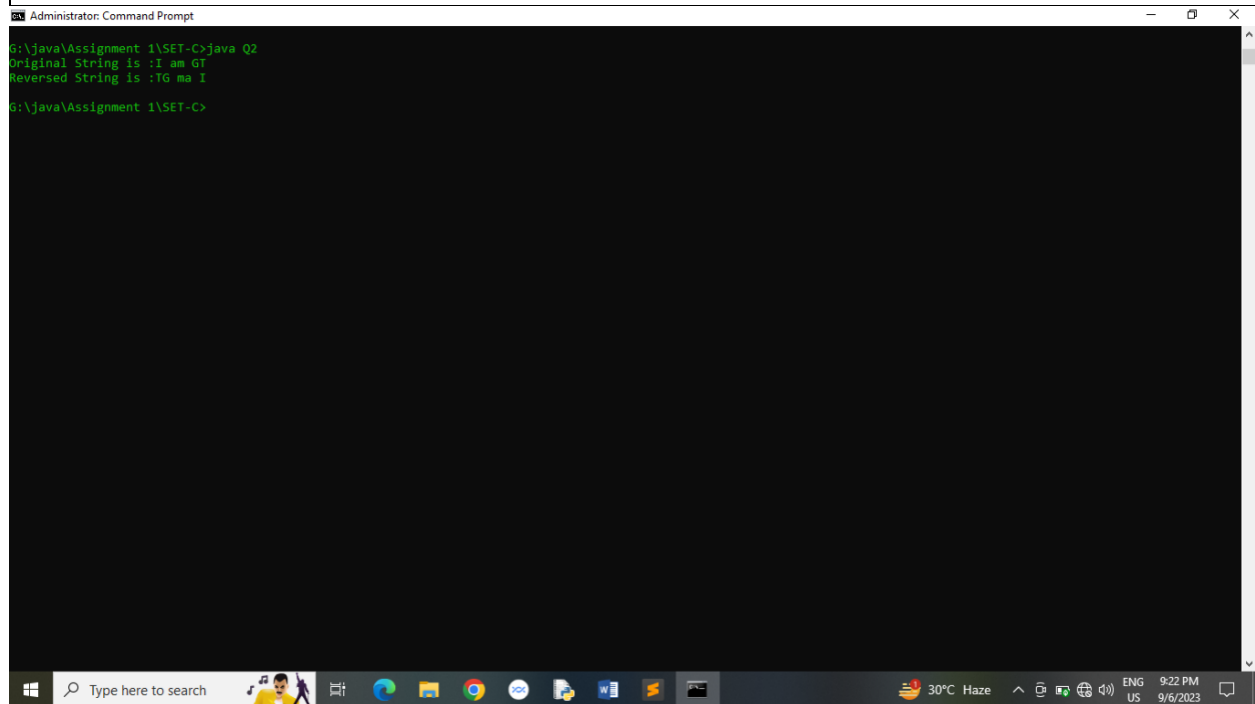
SET-C

Q.2 Write a java program to display each word in reverse order from a string array.

Ans:

```
class Q2{
    public static void main(String[] args) {
        String str;
        String revstr="";
        char ch;
        str=new String("I am GT");
        for(int i=0;i<str.length();i++){
            ch=str.charAt(i);
            revstr=ch+revstr;
        }
        System.out.println("Original String is :"+str);
        System.out.println("Reversed String is :"+revstr);
    }
}
```

Output:



```
Administrator: Command Prompt
G:\java\Assignment 1\SET-C>java Q2
Original String is :I am GT
Reversed String is :TG ma I
G:\java\Assignment 1\SET-C>
```

ASSIGNMENT 1

SET-C

Q.3 Write a java program for union of two integer array.

Ans:

```
class Q3{
    public static void main(String[] args) {
        int[] arr= {1,3,5,8};
        int[] arr2={2,4,6,7};
        int x=arr.length;
        int y=arr2.length;
        System.out.println("Union of arr and arr2 is : ");
        union(arr,arr2,x,y);
    }
    public static void union(int[] arr,int[] arr2,int x,int y){
        int i=0,j=0;
        while(i<x && j<y){
            if(arr[i]<arr2[j]){
                System.out.println(arr[i++]+" ");
            }
            else if(arr[i]>arr2[j]){
                System.out.println(arr2[j++]+" ");
            }
            else{
                System.out.println(arr[i++]+" ");
                j++;
            }
        }
        while(i<x){
            System.out.println(arr[i++]+" ");
        }
        while(j<y){
            System.out.println(arr2[j++]+" ");
        }
    }
}
```

Output:

Administrator: Command Prompt

```
G:\java\Assignment 1\SET-C>java Q3
Union of arr and arr2 is :
1
2
3
4
5
6
7
8
G:\java\Assignment 1\SET-C>
```


ASSIGNMENT 1

SET-C

Q.4 Write a java program to display transpose of given matrix.

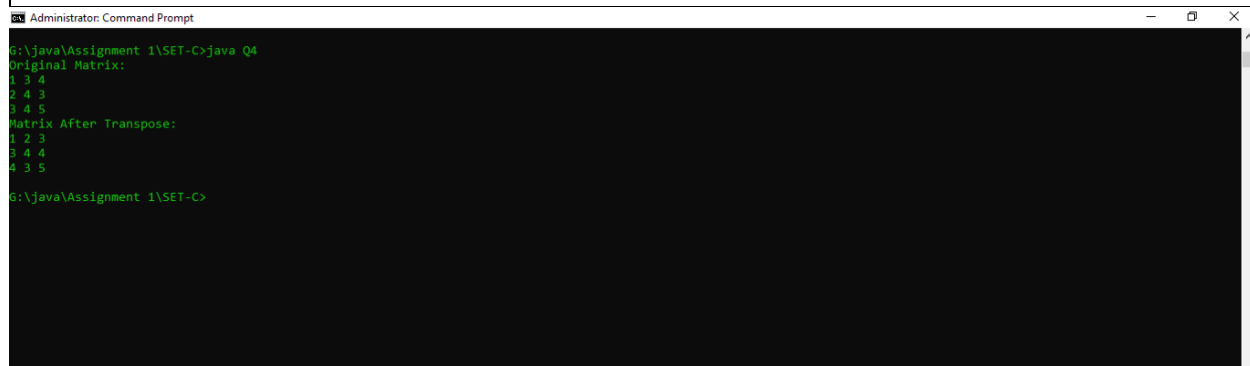
Ans:

```
class Q4{
public static void main(String args[]){
int original[][]={{1,3,4},{2,4,3},{3,4,5}};
int transpose[][]=new int[3][3]; //3 rows and 3 columns

for(int i=0;i<3;i++){
for(int j=0;j<3;j++){
transpose[i][j]=original[j][i];
}
}

System.out.println("Original Matrix:");
for(int i=0;i<3;i++){
for(int j=0;j<3;j++){
System.out.print(original[i][j]+" ");
}
System.out.println();
}
System.out.println("Matrix After Transpose:");
for(int i=0;i<3;i++){
for(int j=0;j<3;j++){
System.out.print(transpose[i][j]+" ");
}
System.out.println();
}
}}
```

Output:



```
Administrator: Command Prompt
G:\java\Assignment 1\SET-C>java Q4
Original Matrix:
1 3 4
2 4 3
3 4 5
Matrix After Transpose:
1 2 3
3 4 4
4 3 5
G:\java\Assignment 1\SET-C>
```

ASSIGNMENT 1

SET-C

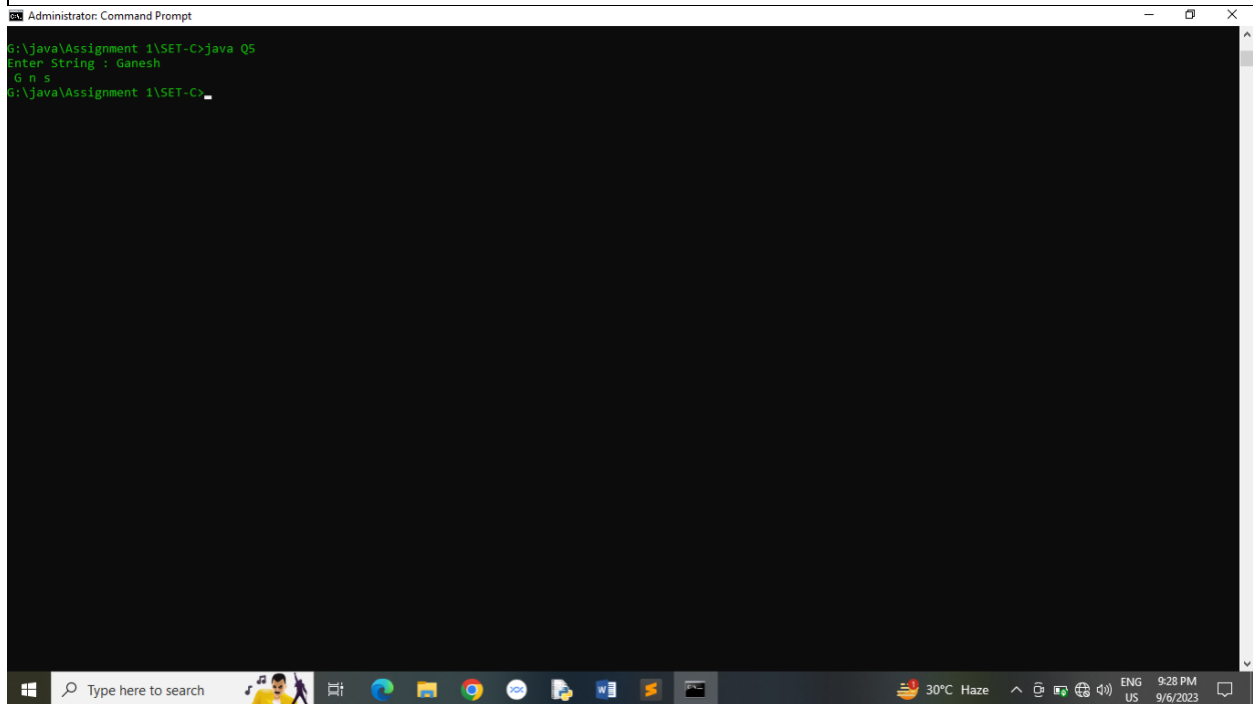
Q.5 Write a java program to display alternate character from a given string.

Ans:

```
import java.util.Scanner;
class Q5{
    public static void main(String args[]){
        Scanner scan=new Scanner(System.in);

        try {
            System.out.print("Enter String : ");
            String str = scan.nextLine();
            for(int i=0;i<str.length();i+=2) {
                System.out.print(" " + str.charAt(i));
            }
        } catch (Exception e) {}
    }
}
```

Output:



```
G:\java\Assignment 1\SET-C>java Q5
Enter String : Ganesh
G n s
G:\java\Assignment 1\SET-C>
```

Thank You..!

GT