

CSA09 Programming in Java
Debugging Questions – Day 1 Assignment

1. Write a program to find the number of composite numbers in an array of elements

Sample Input::

Array of elements = { 16, 18, 27, 16, 23, 21, 19 }

Sample Output:

Number of Composite Numbers = 5

Test cases:

1. Array of elements = { 26, 28, 37, 26, 33, 31, 29 }

2. Array of elements = { 1.6, 1.8, 2.7, 1.6, 2.3, 2.1, .19 }

3. Array of elements = { 0, 160, 180, 270, 160, 230, 210, 190, 0 }

4. Array of elements = { 200, 180, 180, 270, 270, 270, 190, 200 }

```
import java.util.Scanner;
public class composite
{
public static void main(String[] args)
{
try
{
int[] arr=new int[10];
Scanner sc=new Scanner(System.in);
System.out.print("enter number of elements in array:");
int n=sc.nextInt();
System.out.print("enter the elements in array:");
for(int i=0;i<n;i++)
{
arr[i]=sc.nextInt();
}
int count=0;
for(int i=0;i<n;i++)
{
int c=0;
for(int j=1;j<100;j++)
{
if(arr[i]%j==0)
{
c++;
}
}
if(c>2)
count++;
}
System.out.println("number of composite number:"+count);
}
catch(Exception e)
{
System.out.print("invalid due to floating value");
}
```

```

}
}
}

```

The screenshot shows the OnlineGDB website interface. The code editor contains the following Java code:

```

2 public class Main
3 {
4     public static void main(String[] args)
5     {
6         try
7         {
8             int[] arr=new int[10];
9             Scanner sc=new Scanner(System.in);
10            System.out.print("enter number of elements in array:");
11            int n=sc.nextInt();
12            System.out.print("enter the elements in array:");
13            for(int i=0;i<n;i++)
14            {
15                arr[i]=sc.nextInt();
16            }
17            int count=0;
18            for(int i=0;i<n;i++)
19            {

```

The output console shows the following input and output:

```

enter number of elements in array:7
enter the elements in array:16
18
27
16
14
87
91
number of composite number:7
...Program finished with exit code 0
Press ENTER to exit console.

```

2. Write a program for matrix addition?

Sample Input:

Mat1 = 1 2
 5 3

Mat2 = 2 3
 4 1

Sample Output:

Mat Sum = 3 5
 9 4

```

import java.util.Scanner;
public class matrixaddition
{
    public static void main(String[] args)
    {
        int p, q, m, n;
        Scanner s = new Scanner(System.in);
        System.out.print("Enter number of rows in first matrix:");
        p = s.nextInt();
        System.out.print("Enter number of columns in first matrix:");
        q = s.nextInt();
        System.out.print("Enter number of rows in second matrix:");
        m = s.nextInt();
        System.out.print("Enter number of columns in second matrix:");
        n = s.nextInt();
        if (p == m && q == n)
        {

```

```

int a[][] = new int[p][q];
int b[][] = new int[m][n];
int c[][] = new int[m][n];
System.out.println("Enter all the elements of first matrix:");
for (int i = 0; i < p; i++)
{
    for (int j = 0; j < q; j++)
    {
        a[i][j] = s.nextInt();
    }
}
System.out.println("Enter all the elements of second matrix:");
for (int i = 0; i < m; i++)
{
    for (int j = 0; j < n; j++)
    {
        b[i][j] = s.nextInt();
    }
}
System.out.println("First Matrix:");
for (int i = 0; i < p; i++)
{
    for (int j = 0; j < q; j++)
    {
        System.out.print(a[i][j]+" ");
    }
    System.out.println("");
}
System.out.println("Second Matrix:");
for (int i = 0; i < m; i++)
{
    for (int j = 0; j < n; j++)
    {
        System.out.print(b[i][j]+" ");
    }
    System.out.println("");
}
for (int i = 0; i < p; i++)
{
    for (int j = 0; j < n; j++)
    {
        for (int k = 0; k < q; k++)
        {
            c[i][j] = a[i][j] + b[i][j];
        }
    }
}
System.out.println("Matrix after addition:");
for (int i = 0; i < p; i++)
{

```

```

        for (int j = 0; j < n; j++)
        {
            System.out.print(c[i][j]+" ");
        }
        System.out.println("");
    }
}
else
{
    System.out.println("Addition would not be possible");
}
}
}

```

The screenshot shows the OnlineGDB website interface. The code editor contains a Java program that takes two matrices as input and prints their sum. The console output shows the input matrices and the resulting sum matrix.

```

Main.java
1 public class Main
2 {
3     public static void main(String[] args)
4     {
5         int p, q, m, n;
6         Scanner s = new Scanner(System.in);
7         System.out.print("Enter number of rows in first matrix:");
8         p = s.nextInt();
9         System.out.print("Enter number of columns in first matrix:");
10        q = s.nextInt();
11        System.out.print("Enter number of rows in second matrix:");
12
13        Enter number of rows in second matrix:2
14        Enter number of columns in second matrix:2
15        Enter all the elements of first matrix:
16        1
17        2
18        5
19        3
20        Enter all the elements of second matrix:
21        1
22        2
23        3
24        4
25        First Matrix:
26        1 2
27        5 3
28        Second Matrix:
29        2 3
30        4 1
31        Matrix after addition:
32        3 5
33        9 4
34        ...Program finished with exit code 0
35        Press ENTER to exit console.

```

3. Given a non-negative integer x , return the square root of x rounded down to the nearest integer. The returned integer should be non-negative as well.

You must not use any built-in exponent function or operator.

For example, do not use `pow(x, 0.5)` in c++ or `x ** 0.5` in python.

Example 1:

Input: $x = 4$

Output: 2

Explanation: The square root of 4 is 2, so we return 2.

Example 2:

Input: $x = 8$

Output: 2

Explanation: The square root of 8 is 2.82842..., and since we round it down to the nearest integer, 2 is returned.

```
import java.util.Scanner; class rootsq
```

```
{
```

```
public static void main(String[] args)
```

```
System.out.print ("Enter a number: "); Scanner sc = new Scanner(System.in);
```

```
int n = sc. nextInt(); if (n<=0)
```

```
{
```

```
if (n==0)
```

```
{
```

```
System.out.println("zero doesn't have any square root value");
```

```
}
```

```
else
```

```
{
```

```
System.out.println("Due to negative value ");
```

```
}
```

```
}
```

```
else
```

```
{
```

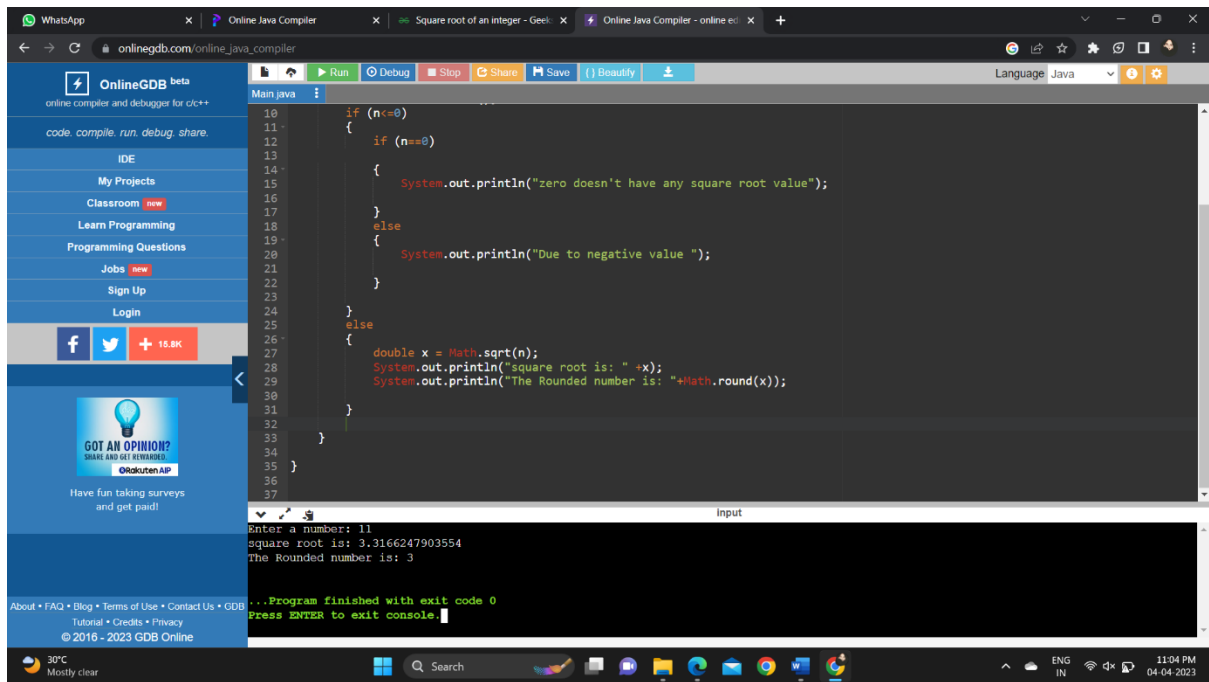
```
double x = Math.sqrt(n); System.out.println("square root is: " +x);
```

```
System.out.println("The Rounded number is: "+Math.round(x));
```

```
}
```

```
}
```

```
}
```



4. Given an integer x, return true if x is a Palindrome , and false otherwise.

Example 1:

Input: x = 121

Output: true

Explanation: 121 reads as 121 from left to right and from right to left.

Example 2:

Input: x = -121

Output: false

Explanation: From left to right, it reads -121. From right to left, it becomes 121-. Therefore it is not a palindrome.

Example 3:

Input: x = 10

Output: false

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

```
class Main {
public static void main(String[] args)
{
    Scanner sc=new Scanner(System.in);
    int num, reversedNum = 0, remainder;
    System.out.println("Enter the number :");
    num=sc.nextInt();
    int originalNum = num;
```

```

while (num != 0) {
    remainder = num % 10;
    reversedNum = reversedNum*10+ remainder;

    num /= 10;

}

if (originalNum == reversedNum) {
    System.out.println(original Num+" is Palindrome.");
}

else {
    System.out.println(originalNum + " is not Palindrome.");
}
}
}

```

The screenshot shows a web browser with the OnlineGDB website. The code editor contains the following Java code:

```

1 import java.util.Scanner;
2 class Main{
3     public static void main(String[] args)
4     {
5         Scanner sc=new Scanner(System.in);
6         int num, reversedNum = 0, remainder;
7         System.out.println("Enter the number :");
8         num=sc.nextInt();
9         int originalNum = num;
10
11         while (num != 0) {
12             remainder = num % 10;
13             reversedNum = reversedNum*10+ remainder;
14             num /= 10;
15         }
16
17         if (originalNum == reversedNum){
18             System.out.println(originalNum+" is Palindrome.");
19         }
20         else
21         {
22             System.out.println(originalNum + " is not Palindrome.");
23         }
24     }
25 }
26
27
28

```

The output console shows the following text:

```

Enter the number :
12321
12321 is Palindrome.
...Program finished with exit code 0
Press ENTER to exit console.

```

5. Find the error and Debug the code

```

import java.util.*;
class age{

public static void main(string arcs[]){

Scanner scan=new scanner (System.in);

System.out.println("Enter the age of person");

```

```

int user_age=scan.next Int();

System.out.println("The age of person is"+user_age);

if(user_age>18)

{

System.out.println("You are eligible to Vote");

}

else{
System.out.println("You are not eligible to vote and ..for you  " + (18 - user_age) + " years
are left to be eligible");

}

}

}

```

```

import java.util.*;
import java.io.*;

class vote
{
public static void main(String args[])
{
try
{
Scanner sc=new Scanner(System.in);
int age,y;
System.out.println("enter the age");
age=sc.nextInt();
y=18-age;
if(age<18)
{
System.out.println("not elligible " +y);
}
else
{
System.out.println("elligible to vote");
}
}
catch(Exception e)
{
System.out.println("invalid input");
}
}

```


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Main.java

```
1- import java.util.*;
2- import java.io.*;
3-
4- class Main
5- {
6-     public static void main(String args[])
7-     {
8-         try
9-         {
10-             Scanner sc=new Scanner(System.in);
11-             int age,y;
12-             System.out.println("enter the age");
13-             age=sc.nextInt();
14-             y=18-age;
15-             if(age<18)
16-             {
17-                 System.out.println("not eligible " +y);
18-             }
19-             else
20-             {
21-                 System.out.println("eligible to vote");
22-             }
23-         }
24-         catch(Exception e)
25-         {
26-             System.out.println("invalid input");
27-         }
28-     }
29- }
```

input

```
enter the age
12
not eligible 6

...Program finished with exit code 0
Press ENTER to exit console.
```

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