

CDAC Hyderabad
PG-DAC March 2023
OOps With Java
Assignment 1.

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Q1)

The screenshot shows a Sublime Text editor window with the title bar "C:\Users\nikhi\Documents\Assignment 1\Hello.java (Documents) - Sublime Text (UNREGISTERED)". The editor has two tabs: "Trangle.java" and "Hello.java". The "Hello.java" tab is active, showing the following code:

```
1 public class Hello{
2
3
4 public static void main(String[] args) {
5
6     System.out.println("Hello World!!");
7 }
8
9 }
```

On the left side, there is a "FOLDERS" panel showing the project structure:

- Documents
 - Assignment 1
 - /* Addition.java
 - /* Area_c.java
 - /* Area_re.java
 - /* Ascii.java
 - /* Cl.java
 - /* Date_t.java
 - /* Default_value.java
 - /* Even.java
 - /* Fibonacci.java
 - /* First.java
 - /* Hello.java
 - /* Power_of.java
 - /* Sumof.java
 - /* Swap_no.java
 - /* Swap_var.java
 - /* Third.java
 - Assignment 2
 - Assignment 3
 - /* Trangle.java
 - Custom Office Templates
 - Extra Assignment
 - My Music
 - My Pictures
 - My Videos
 - /* Trangle.java

In the foreground, there is a Windows command prompt window titled "C:\Windows\System32\cmd.exe". It shows the following commands and output:

```
Microsoft Windows [Version 10.0.22000.1696]
(c) Microsoft Corporation. All rights reserved.

C:\Users\nikhi\Documents\Assignment 1>javac Hello.java

C:\Users\nikhi\Documents\Assignment 1>java Hello
Hello World!!

C:\Users\nikhi\Documents\Assignment 1>_
```

The Windows taskbar at the bottom shows the time as 21:04 on 29-03-2023, and the system language is set to ENG IN.

Q2)

C:\Users\nikhi\Documents\Assignment 1\Addition.java • (Documents) - Sublime Text (UNREGISTERED)

File Edit Selection Find View Goto Tools Project Preferences Help

FOLDERS

- Documents
 - Assignment 1
 - Addition.java
 - Area_c.java
 - Area_re.java
 - Ascii.java
 - Cl.java
 - Date_t.java
 - Default_value.java
 - Even.java
 - Fibonacci.java
 - First.java
 - Hello.java
 - Power_of.java
 - Sumof.java
 - Swap_no.java
 - Swap_var.java
 - Third.java
 - Assignment 2
 - Assignment 3
 - Trangle.java
 - Custom Office Template
 - Extra Assignment
 - My Music
 - My Pictures
 - My Videos
 - Trangle.java

Trangle.java Hello.java Addition.java

```
1 public class Addition{
2
3     public static void main(String[] args) {
4
5         int p =5, q =10;
6
7         System.out.println("Addition of p and q is = "+ (p+q));
8
9         char s = 'A', t = 'B';
10
11        System.out.println("Character Addition s and t = "+ (s+t));
12
13        int a= 1010, b =10;
14
15        String s1 = Integer.toString(a);
16        String s2 = Integer.toString(b);
17
18        int number0 = Integer.parseInt(s1, 2);
19        int number1 = Integer.parseInt(s2, 2);
20
21        int sum = number0 + number1;
22
23        System.out.println("Binary addition of a =1010 ,b = 10 is = "+ Integer.toBinaryString(sum));
24    }
25 }
```

C:\Windows\System32\cmd.exe

```
C:\Users\nikhi\Documents\Assignment 1>javac Addition.java
C:\Users\nikhi\Documents\Assignment 1>java Addition
Addition of p and q is = 15
Character Addition s and t = 131
Binary addition of a =1010 ,b = 10 is = 1100
```

Line 14, Column 1

Tab Size: 4 Java

21:10 29-03-2023

Q3)

The screenshot shows the Sublime Text editor interface with the file `C:\Users\nikhi\Documents\Assignment 1\CI.java` open. The editor displays the following Java code:

```
1 public class CI{
2
3     public static void main(String[] args) {
4
5         //int a = Integer.parseInt(args[0]);
6
7         double principal = 100000;
8         double time = 5;
9         double interest = 8;
10
11         // find compund interest
12
13         // ci = amount - principal
14         // amount = p(1+ r/100)^t
15
16         double CompIn = principal*(Math.pow((1+(interest/100)),time))- principal;
17
18
19
20     }
21
22 }
```

On the left, the 'FOLDERS' panel shows the project structure, including `Assignment 1` and its sub-files. A terminal window titled `C:\Windows\System32\cmd.exe` is open, showing the execution of the program:

```
C:\Users\nikhi\Documents\Assignment 1>java CI.java
The Compund Interest on 100000 over 5 years is = 46932.807680000056

C:\Users\nikhi\Documents\Assignment 1>javac CI.java

C:\Users\nikhi\Documents\Assignment 1>java CI
The Compund Interest on 100000 over 5 years is = 46932

C:\Users\nikhi\Documents\Assignment 1>
```

The status bar at the bottom indicates 'Line 20, Column 82', 'Tab Size: 4', and the language is set to 'Java'. The system tray shows the date and time as '29-03-2023 21:12'.

Q4)

The screenshot shows a Windows desktop environment. In the foreground, a Sublime Text editor window is open, displaying a Java file named `Power_of.java`. The code is as follows:

```
1 public class Power_of{
2
3
4     public static void main(String[] args) {
5
6         int base = 3, exponent = 4;
7
8         // double result = Math.pow(base, exponent);
9         Long sum = 1;
10
11         while (exponent != 0) {
12             sum *= base;
13             --exponent;
14         }
15
16         System.out.println("Answer = " + sum);
17
18     }
19 }
```

To the right of the IDE, a Windows Command Prompt window is open, showing the following commands and output:

```
C:\Windows\System32\cmd.exe
C:\Users\nikhi\Documents\Assignment 1>javac Power_of.java
C:\Users\nikhi\Documents\Assignment 1>java Power_of
Answer = 81
C:\Users\nikhi\Documents\Assignment 1>_
```

The Windows taskbar at the bottom shows the Start button, a search bar, and several application icons including File Explorer, Settings, Microsoft Edge, and others. The system tray on the right indicates the date and time as 21:13 on 29-03-2023.

Q5)

C:\Users\nikhi\Documents\Assignment 1\Swap_no.java (Documents) - Sublime Text (UNREGISTERED)

File Edit Selection Find View Goto Tools Project Preferences Help

FOLDERS

- Documents
 - Assignment 1
 - /* Addition.java
 - /* Area_c.java
 - /* Area_re.java
 - /* Ascii.java
 - /* Cl.java
 - /* Date_t.java
 - /* Default_value.java
 - /* Even.java
 - /* Fibonacci.java
 - /* First.java
 - /* Hello.java
 - /* Power_of.java
 - /* Sumof.java
 - /* Swap_no.java
 - /* Swap_var.java
 - /* Third.java
 - Assignment 2
 - Assignment 3
 - /* Trangle.java
 - Custom Office Template
 - Extra Assignment
 - My Music
 - My Pictures
 - My Videos
 - /* Trangle.java

```
1 public class Swap_no{
2
3
4
5     public static void main(String[] args) {
6
7         int temp;
8         int a = 5;
9         int b = 10;
10
11     System.out.println("Values of a and b before swap = "+(a+" "+b));
12     temp = a;
13     a = b;
14     b = temp;
15
16
17     System.out.println("Values of a and b after awap = "+(a+" "+b));
18 }
19 }
```

C:\Windows\System32\cmd.exe

```
C:\Users\nikhi\Documents\Assignment 1>javac Power_of.java
C:\Users\nikhi\Documents\Assignment 1>java Power_of
Answer = 81
C:\Users\nikhi\Documents\Assignment 1>javac Swap_no.java
C:\Users\nikhi\Documents\Assignment 1>java Swap_no
Values of a and b before swap = 5 10
Values of a and b after awap = 10 5
C:\Users\nikhi\Documents\Assignment 1>
```

Line 1, Column 1

Tab Size: 4

Java

21:13 29-03-2023

Q6)

C:\Users\nikhi\Documents\Assignment 1\Area_re.java (Documents) - Sublime Text (UNREGISTERED)

File Edit Selection Find View Goto Tools Project Preferences Help

FOLDERS

- Documents
 - Assignment 1
 - /* Addition.java
 - /* Area_c.java
 - /* Area_re.java
 - /* Ascii.java
 - /* Cl.java
 - /* Date_t.java
 - /* Default_value.java
 - /* Even.java
 - /* Fibonacci.java
 - /* First.java
 - /* Hello.java
 - /* Power_of.java
 - /* Sumof.java
 - /* Swap_no.java
 - /* Swap_var.java
 - /* Third.java
 - Assignment 2
 - Assignment 3
 - /* Trangle.java
 - Custom Office Template
 - Extra Assignment
 - My Music
 - My Pictures
 - My Videos
 - /* Trangle.java

```
1 public class Area_re{
2
3
4     public static void main(String[] args) {
5
6         int width = Integer.parseInt(args[0]);
7         int height = Integer.parseInt(args[1]);
8
9         double area = width*2 + height*2;
10
11         System.out.println("Area of Rectangle is = "+(int)area);
12     }
13 }
```

C:\Windows\System32\cmd.exe

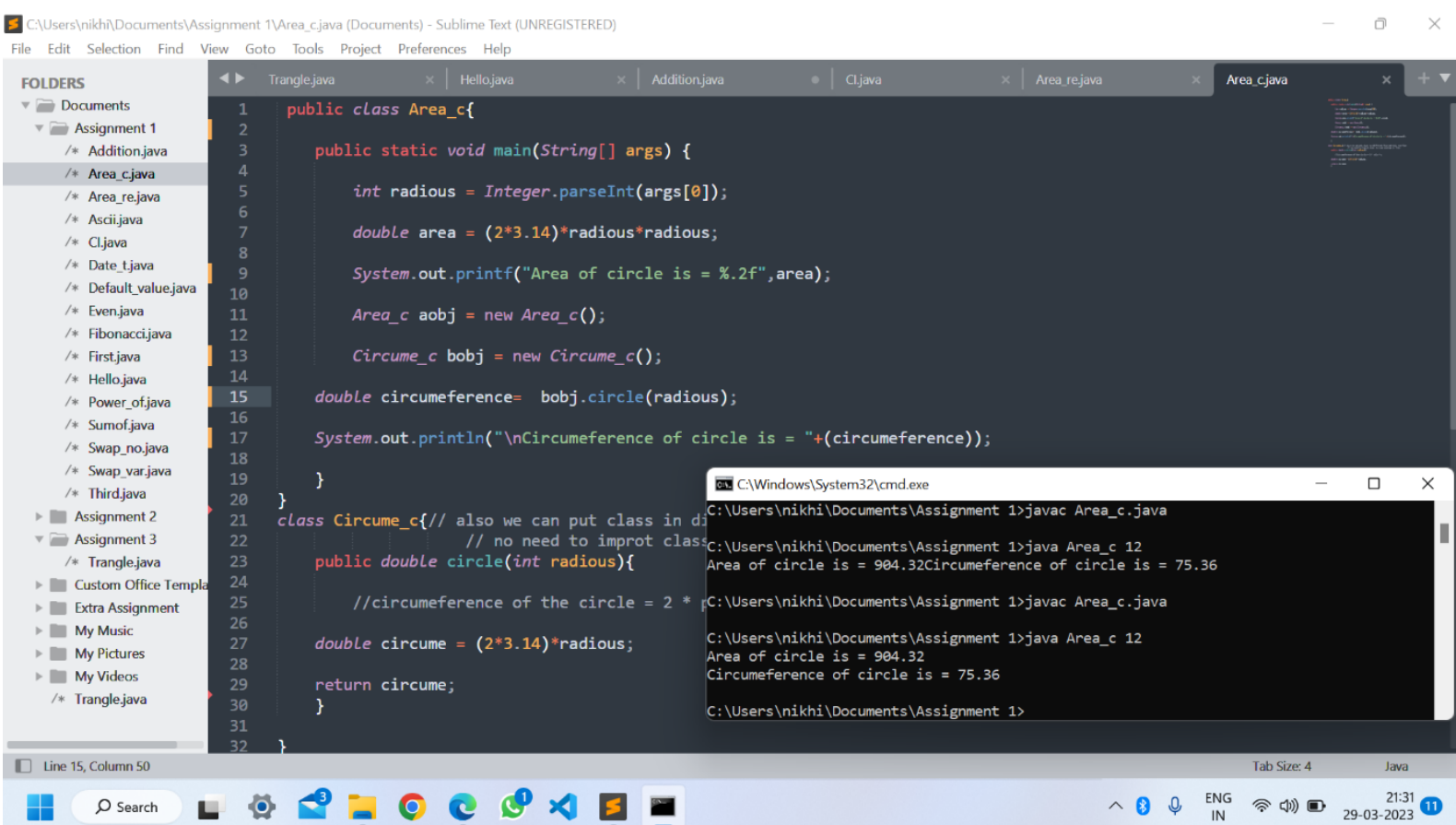
```
C:\Users\nikhi\Documents\Assignment 1>javac Area_re.java
C:\Users\nikhi\Documents\Assignment 1>java Area_re
Exception in thread "main" java.lang.ArrayIndexOutOfBoundsException: Index 0 out of bounds for length 0
    at Area_re.main(Area_re.java:7)
C:\Users\nikhi\Documents\Assignment 1>java Area_re 10 5
Area of Rectangle is = 30.0
C:\Users\nikhi\Documents\Assignment 1>
```

Line 11, Column 64

Tab Size: 4 Java

21:16 29-03-2023

Q7)



C:\Users\nikhi\Documents\Assignment 1\Area_c.java (Documents) - Sublime Text (UNREGISTERED)

File Edit Selection Find View Goto Tools Project Preferences Help

FOLDERS

- Documents
 - Assignment 1
 - /* Addition.java
 - /* Area_c.java
 - /* Area_re.java
 - /* Ascii.java
 - /* Cl.java
 - /* Date_t.java
 - /* Default_value.java
 - /* Even.java
 - /* Fibonacci.java
 - /* First.java
 - /* Hello.java
 - /* Power_of.java
 - /* Sumof.java
 - /* Swap_no.java
 - /* Swap_var.java
 - /* Third.java
 - Assignment 2
 - Assignment 3
 - /* Trangle.java
 - Custom Office Template
 - Extra Assignment
 - My Music
 - My Pictures
 - My Videos
 - /* Trangle.java

```
1 public class Area_c{
2
3     public static void main(String[] args) {
4
5         int radius = Integer.parseInt(args[0]);
6
7         double area = (2*3.14)*radius*radius;
8
9         System.out.printf("Area of circle is = %.2f", area);
10
11         Area_c aobj = new Area_c();
12
13         Circume_c bobj = new Circume_c();
14
15         double circumference = bobj.circle(radius);
16
17         System.out.println("\nCircumference of circle is = "+(circumference));
18
19     }
20 }
21 class Circume_c{// also we can put class in d
22     // no need to import class
23     public double circle(int radius){
24
25         //circumference of the circle = 2 *
26
27         double circume = (2*3.14)*radius;
28
29         return circume;
30     }
31 }
32 }
```

C:\Windows\System32\cmd.exe

```
C:\Users\nikhi\Documents\Assignment 1>javac Area_c.java
C:\Users\nikhi\Documents\Assignment 1>java Area_c 12
Area of circle is = 904.32Circumference of circle is = 75.36
C:\Users\nikhi\Documents\Assignment 1>javac Area_c.java
C:\Users\nikhi\Documents\Assignment 1>java Area_c 12
Area of circle is = 904.32
Circumference of circle is = 75.36
C:\Users\nikhi\Documents\Assignment 1>
```

Line 15, Column 50

Tab Size: 4 Java

Q8)

The screenshot shows a Sublime Text editor window with the file `C:\Users\nikh\Documents\Assignment 1\Default_value.java` open. The editor displays the following Java code:

```
1 public class Default_value{
2
3     static byte b;
4     static short s;
5     static int i;
6     static long l;
7     static float f;
8     static double d;
9     static boolean bo;
10    static char c;
11
12    public static void main(String[] args) {
13        // finding the size of wrapper classes BYT
14        //System.out.println("Size of boolean : De
15        // System.out.println("Size of byte: " + (
16        // System.out.println("Size of short: " + (
17        // System.out.println("Size of int: " + (
18        // System.out.println("Size of long: " + (
19        // System.out.println("Size of char: " + (
20        // System.out.println("Size of float: " + (
21        // System.out.println("Size of double: "+
22
23        System.out.println("Defalut value of byte is :"+b);
24        System.out.println("Defalut value of short is :"+s);
25        System.out.println("Defalut value of int is :"+i);
26        System.out.println("Defalut value of long is :"+f);
27        System.out.println("Defalut value of float is :"+d);
28        System.out.println("Defalut value of double is :"+bo);
29        System.out.println("Defalut value of char is :"+c);
30    }
31
32 }
```

A command prompt window is open, showing the execution of the program:

```
C:\Windows\System32\cmd.exe
C:\Users\nikh\Documents\Assignment 1>javac Default_value.java
C:\Users\nikh\Documents\Assignment 1>java Default_value
Defalut value of byte is :0
Defalut value of short is :0
Defalut value of int is :0
Defalut value of long is :0.0
Defalut value of float is :0.0
Defalut value of double is :false
Defalut value of char is :
C:\Users\nikh\Documents\Assignment 1>
```

The taskbar at the bottom shows the Windows Start button, a search bar, and several application icons. The system tray on the right indicates the date and time as 21:35 on 29-03-2023.

Q9)

C:\Users\nikhi\Documents\Assignment 1\Default_value.java • (Documents) - Sublime Text (UNREGISTERED)

File Edit Selection Find View Goto Tools Project Preferences Help

FOLDERS

- Documents
 - Assignment 1
 - Addition.java
 - Area_c.java
 - Area_re.java
 - Ascii.java
 - Cl.java
 - Date_t.java
 - Default_value.java
 - Even.java
 - Fibonacci.java
 - First.java
 - Hello.java
 - Power_of.java
 - Sumof.java
 - Swap_no.java
 - Swap_var.java
 - Third.java
 - Assignment 2
 - Assignment 3
 - Trangle.java
 - Custom Office Template
 - Extra Assignment
 - My Music
 - My Pictures
 - My Videos
 - Trangle.java

```
1 public class Default_value{
2
3     static byte b;
4     static short s;
5     static int i;
6     static long l;
7     static float f;
8     static double d;
9     static boolean bo;
10    static char c;
11
12    public static void main(String[] args) {
13        // finding the size of wrapper classes BYT
14        //System.out.println("Size of boolean : De
15        // System.out.println("Size of byte: " + (
16        // System.out.println("Size of short: " + (
17        // System.out.println("Size of int: " + (
18        // System.out.println("Size of long: " + (
19        // System.out.println("Size of char: " + (
20        // System.out.println("Size of float: " + (
21        // System.out.println("Size of double: " +
22
23        System.out.println("Defalut value of byte is :"+b);
24        System.out.println("Defalut value of short is :"+s);
25        System.out.println("Defalut value of int is :"+i);
26        System.out.println("Defalut value of long is :"+f);
27        System.out.println("Defalut value of float is :"+d);
28        System.out.println("Defalut value of double is :"+bo);
29        System.out.println("Defalut value of char is :"+c);
30    }
31
32 }
```

C:\Windows\System32\cmd.exe

```
C:\Users\nikhi\Documents\Assignment 1>javac Default_value.java
C:\Users\nikhi\Documents\Assignment 1>java Default_value
Defalut value of byte is :0
Defalut value of short is :0
Defalut value of int is :0
Defalut value of long is :0.0
Defalut value of float is :0.0
Defalut value of double is :false
Defalut value of char is :
```

Line 30, Column 6

Spaces: 4 Java

21:35 29-03-2023

Q10)

C:\Users\nikhi\Documents\Assignment 1\Swap_var.java (Documents) - Sublime Text (UNREGISTERED)

File Edit Selection Find View Goto Tools Project Preferences Help

FOLDERS

- Documents
 - Assignment 1
 - /* Addition.java
 - /* Area_c.java
 - /* Area_re.java
 - /* Ascii.java
 - /* Cl.java
 - /* Date_t.java
 - /* Default_value.java
 - /* Even.java
 - /* Fibonacci.java
 - /* First.java
 - /* Hello.java
 - /* Power_of.java
 - /* Sumof.java
 - /* Swap_no.java
 - /* Swap_var.java
 - /* Third.java
 - Assignment 2
 - Assignment 3
 - /* Trangle.java
 - Custom Office Template
 - Extra Assignment
 - My Music
 - My Pictures
 - My Videos
 - /* Trangle.java

```
1 public class Swap_var{
2
3
4 public static void main(String[] args) {
5
6     int a, b;
7
8     a = Integer.parseInt(args[0]);
9     b = Integer.parseInt(args[1]);
10
11     System.out.println("Numbers before swap a and b = "+(a+" "+b));
12
13     a = a + b;
14     b = a - b;
15     a = a - b;
16
17     System.out.println("Numbers after swap a and b = "+(a+" "+b));
18 }
19 }
```

C:\Windows\System32\cmd.exe

```
C:\Users\nikhi\Documents\Assignment 1>javac Swap_var.java
C:\Users\nikhi\Documents\Assignment 1>java Swap_var 10 50
Numbers before swap a and b = 10 50
Numbers after swap a and b = 50 10
C:\Users\nikhi\Documents\Assignment 1>
```

Line 19, Column 2

Tab Size: 4 Java

21:37 29-03-2023

Q11)

C:\Users\nikhi\Documents\Assignment 1\Fibonacci.java (Documents) - Sublime Text (UNREGISTERED)

File Edit Selection Find View Goto Tools Project Preferences Help

FOLDERS

- Documents
 - Assignment 1
 - /* Addition.java
 - /* Area_c.java
 - /* Area_re.java
 - /* Ascii.java
 - /* Cl.java
 - /* Date_t.java
 - /* Default_value.java
 - /* Even.java
 - /* Fibonacci.java**
 - /* First.java
 - /* Hello.java
 - /* Power_of.java
 - /* Sumof.java
 - /* Swap_no.java
 - /* Swap_var.java
 - /* Third.java
 - Assignment 2
 - Assignment 3
 - /* Trangle.java
 - Custom Office Template
 - Extra Assignment
 - My Music
 - My Pictures
 - My Videos
 - /* Trangle.java

```
1 public class Fibonacci{
2
3
4
5     public static void main(String[] args) {
6
7         int n = Integer.parseInt(args[0]);
8         int first = 0;
9         int second = 1;
10        int nextTerm;
11
12        System.out.println("Fibonacci Series till " + n + " terms = ");
13
14        for (int i =1;i<=n ;++i ) {
15
16            System.out.print((first+", ");
17
18            nextTerm= first+second;
19
20            first = second;
21            second= nextTerm;
22
23        }
24
25
26
27
28
29    }
30 }
```

C:\Windows\System32\cmd.exe

```
C:\Users\nikhi\Documents\Assignment 1>javac Fibonacci.java
C:\Users\nikhi\Documents\Assignment 1>java Fibonacci 15
Fibonacci Series till 15 terms =
0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144, 233, 377,
C:\Users\nikhi\Documents\Assignment 1>
```

Line 1, Column 1

Tab Size: 4 Java

21:38 29-03-2023