KALINGA INSTITUTE OF INDUSTRIAL TECHNOLOGY (KIIT)

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School of Computer Engineering

WT LAB - 7

Submitted By :

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Section: IT-04

Branch : Information Technology

Q-1 A plastic manufacturer sells plastic in different shapes like 2D sheet and 3D box. The cost of sheet is Rs 40/ per square ft. and the cost of box is Rs 60/ per cubic ft. Implement it in Java to calculate the cost of plastic as per the dimensions given by the user where 3D inherits from 2D.

CODE:

```
package lab7;
import java.util.Scanner;

class Sheet2D {
int length, breadth; void get2D(int l, int b) {
length = l; breadth = b;
}
void calculate() {
System.out.println("2D Sheet Price = " + (length * breadth * 40));
}}
class Box3D extends Sheet2D { int height;
void get3D() { height = 6;
}
void calculate() {
System.out.println("3D Sheet Price = " + (length * breadth * height * 60));
}}
class q1 {
public static void main(String[] args) { Scanner input = new Scanner(System.in);
Sheet2D s2 = new Sheet2D(); s2.get2D(8, 5);
s2.calculate();
Box3D b3 = new Box3D(); b3.get2D(10, 4);
b3.get3D(); b3.calculate(); input.close();
}
}
```

OUTPUT:

```
run:
2D Sheet Price = 1600
3D Sheet Price = 14400
BUILD SUCCESSFUL (total time: 0 seconds)
```

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Q2 : Write a java program to create a class plate. Class box extends from the class plate. Class wood_box extends from the class box. Show the order of constructors called.

CODE:

```
 class plate {

plate() {
      System.out.println("Grandfather Class Constructor Called");
}
 }


 class box extends plate {

box() {
      System.out.println("Father Class Constructor Called");
}
 }


 class wood_box extends box {

wood_box() {
      System.out.println("Child Class Constructor Called");
}
 }


 class q2 {
   public static void
      main(String[] args) {
      wood_box obj = new
      wood_box();

}
 }
```

OUTPUT:

```
run:
Grandfather Class Constructor Called
Father Class Constructor Called
Child Class Constructor Called
BUILD SUCCESSFUL (total time: 0 seconds)
```

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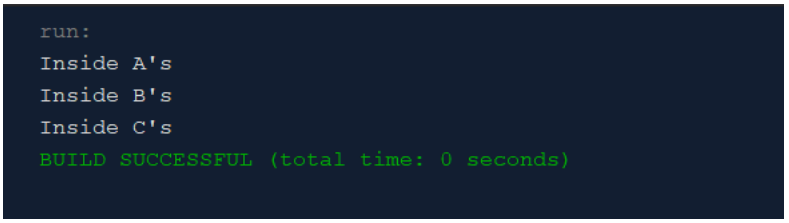
Q-3 :Write a java program to create a class “A”. Class B extends from class A. Class C also extends from class A. Assign the object of class A to all the other classes and call the “callMe” member function one by one.

CODE:

```
package lab7;
class A {
void callme() { System.out.println("Inside A's ");
}
}
class B extends A { void callme() {
System.out.println("Inside B's ");
}
}
class C extends A { void callme() {
System.out.println("Inside C's ");
}
}
public class Q3 {
public static void main(String[] args) { A a = new A();
B b = new B(); C c = new C(); A r;
r = a; r.callme(); r = b; r.callme(); r = c; r.callme();
}
}
```

OUTPUT:



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Q-4 Write a program in java to define a class Shape which has data member „area‟ and a
member function showArea(). Derive two classes Circle and Rectangle from Shape
class. Add appropriate data members and member functions to calculate and display
the area of Circle and Rectangle.
import java.util.Scanner;

CODE: **ISHU KUMAR 2006270**

```
package lab7;
import java.util.Scanner; class shape {
double area;

void showArea() { System.out.println("Area = " + area);
}
}
class circle extends shape { float radius;

void get(int r) { radius = r;
}

void calcArea() {
area = 3.14159 * radius * radius;
}
}
class rectangle extends shape { int length, breadth;

void get(int l,int r) { length = l; breadth = r;
}
void calcArea() {
area = length * breadth;
}
}
class Q4 {
public static void main(String[] args) { Scanner input = new Scanner(System.in);
circle c = new circle();
c.get(10);
c.calcArea();
c.showArea();
rectangle r = new rectangle(); r.get(4,5);
r.calcArea();
r.showArea(); input.close();
```

```
}
}
```

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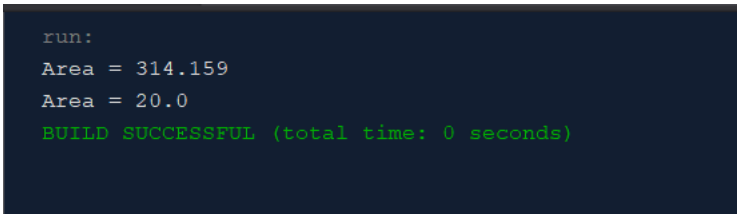
OUTPUT:



Q5 : Write a java program to create a class “account” with parameters balance and acc_no. Person class with parameters name and aadhar_no extends account. Implement functionalities to create a bank account using constructors.

CODE:

```
package lab7;
import java.util.Scanner;

class account {
int acc_no, balance;

account(int a, int b) { acc_no = a; balance = b;
}


void disp() {
System.out.println("Account no. = " + acc_no); System.out.println("Balance = " +
balance);
}
}

class person extends account { String name;
int aadhaar_no;

person(int a, int b, String n, int ad) { super(a, b);
name = n; aadhaar_no = ad;
}

void disp() { super.disp();
System.out.println("Name = " + name); System.out.println("Aadhaar No. = " +
aadhaar_no); System.out.println();
}
}
```

```
class q5 {
public static void main(String[] args) { Scanner input = new Scanner(System.in);
person obj = new person(1,10,"A",100); person obj1 = new person(2,11,"B",101);
person obj2 = new person(3,12,"C",102); person obj3 = new person(4,13,"D",103);
person obj4 = new person(5,14,"E",104); obj.disp();
obj1.disp();
obj2.disp();
obj3.disp();
obj4.disp(); input.close();
}}
```

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OUTPUT:

```
run:
Account no. = 1
Balance = 10
Name = A
Aadhaar No. = 100

Account no. = 2
Balance = 11
Name = B
Aadhaar No. = 101

Account no. = 3
Balance = 12
Name = C
Aadhaar No. = 102

Account no. = 4
Balance = 13
Name = D
Aadhaar No. = 103

Account no. = 5
Balance = 14
Name = E
Aadhaar No. = 104

BUILD SUCCESSFUL (total time: 0 seconds)
```

Q6 : Write a java program to implement a class “abc”. Class “def” extends from “abc”. Change the values of parent class from child class using super().

CODE:

```
package lab7;
import java.util.Scanner;

class abc {
abc(int a, int b) {
System.out.println("Base Class Parameterized"); System.out.println("a = " + a + " b =
```

```
" + b);
}
}

class def extends abc { def(int a, int b, int c) {
super(a, b);
System.out.println("Derived Class Parameterized");

System.out.println("a = " + a + " b = " + b + " c = " + c);
}
}

class Q6 {
public static void main(String[] args) { Scanner input = new Scanner(System.in); def
obj = new def(1, 2, 3);
input.close();
}
}
```

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OUTPUT:

```
run:
Base Class Parameterized
a = 1 b = 2
Derived Class Parameterized
a = 1 b = 2 c = 3
BUILD SUCCESSFUL (total time: 0 seconds)
```