WEEK 4:

Develop a Java program to create an abstract class named Shape that contains two integers and an empty method named printArea(). Provide three classes named Rectangle, Triangle and Circle such that each one of the classes extends the class Shape. Each one of the classes contain only the method printArea() that prints the area of the given shape.

Source Code:

```
abstract class Shape {
    int dim1;
    int dim2;
    abstract void printArea();
class Rectangle extends Shape {
    public Rectangle(int length, int width) {
        this.dim1 = length;
        this.dim2 = width;
    void printArea() {
        int area = dim1 * dim2;
        System.out.println("Area of Rectangle: " + area);
class Triangle extends Shape {
    public Triangle(int base, int height) {
        this.dim1 = base;
        this.dim2 = height;
    void printArea() {
        double area = 0.5 * dim1 * dim2;
        System.out.println("Area of Triangle: " + area);
class Circle extends Shape {
   public Circle(int radius) {
        this.dim1 = radius;
        this.dim2 = 0;
```

```
void printArea() {
    double area = Math.PI * dim1 * dim1;
    System.out.println("Area of Circle: " + area);
}

public class Main {
    public static void main(String[] args) {
        Shape rectangle = new Rectangle(8,9);
        Shape triangle = new Triangle(8, 6);
        Shape circle = new Circle(14);

        rectangle.printArea();
        triangle.printArea();
        circle.printArea();
}
```

Output:

```
Area of Rectangle: 72
Area of Triangle: 24.0
Area of Circle: 615.7521601035994
```

Written code and output:

```
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that contains two integers rectangle, Triangle, circle such that each provide it extends claus shape one of it extends clauses
    # import java; util kanner
abitratt class shape f
                      Cashindard op Cilledard I maring.
    abstract clay shape of
       int dimension 1;
       int dimension 2;
      public shape (int dim1, int dim2)
          dimension1 = dim1;
          dimension2 = dim 2;
      public abstract void printAreal);
   class rectangle extrends shape f
      public rectangle (int length, int width) {
          superlangth, width)
      public void printArealls
        int area = dimensions + dimension2;
       System out. println ("Area of rectangle" + Area)
  class triangle extends shape f
     public triangle (int base, int height)?
            super (base, height);
    public void printAreal ) f
       int area : dimension 1 * dimension 2 * 7.5;
       System.out.println("Area of triangle" + Area)
class circle extends shape &
   public circle(int radius) = }
        Super (radiu, 0);
```

public void print Area(){ double area + math.PI * dimension1 * dimension1; System.out. println ("Area of circle"+ Area); s, to partid describilities this I'm I'm is exteriory lines in fronder there has no integer. General account public days umain! public static, void main (string args) { reclargle = new reclargle (10,5); triangle = new triangle (3,6); circle = new circle (7); rectangle.printAreall; triangle. printAreal? Circle printhread inded dabys has lauration the maintain balance, impose penditty output Area of rectangle: 50 Lawy Heart Area of Triangle: 24 Area of circle: 153.9380400. imparameter parts String account thembers to death, upt a party man party some a top i death to Manuamo Danab Mingab H tanone - 1 od til bottogro") allang how (willing at hum brogn") altring to am of the state humped you bear how