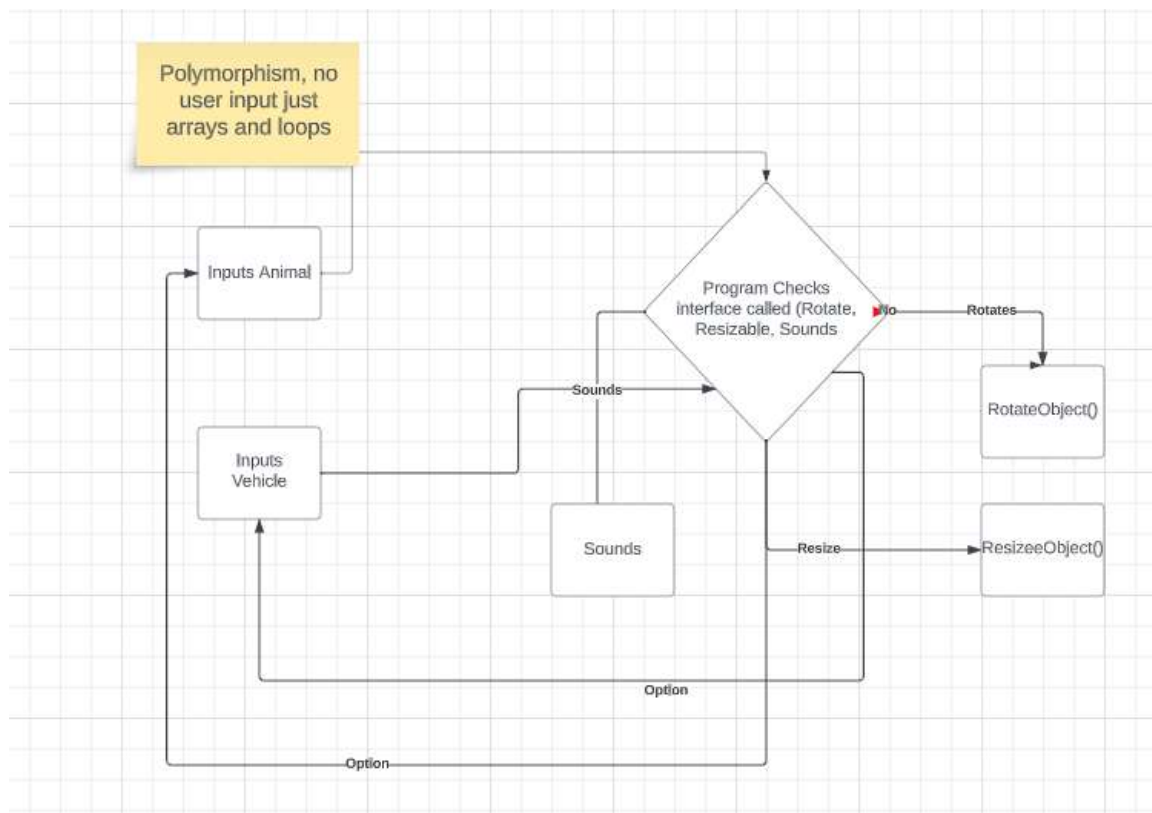//Design



//Code

**1. Interface Classes Design**

public interface Drawable {

   void drawObject();

}


public interface Rotatable {

   void rotateObject();

}


public interface Resizable {

   void resizeObject();

```java
}
```

```java
public interface Sounds {

   void playSound();

}
```

**2. Classes Design (Animal & Vehicle)**

```java
public class Animal implements Drawable, Rotatable, Resizable, Sounds {

   private String name;


   public Animal(String name) {

      this.name = name;

   }


   public String getName() {

      return name;

   }


   public void setName(String name) {

      this.name = name;

   }


   @Override
   public void drawObject() {

      System.out.println("Drawing an Animal");

   }
```

```java
    @Override

    public void rotateObject() {

        System.out.println("Rotating an Animal");

    }


    @Override

    public void resizeObject() {

        System.out.println("Resizing an Animal");

    }


    @Override

    public void playSound() {

        System.out.println("Animal sound");

    }

}


public class Vehicle implements Drawable, Rotatable, Resizable, Sounds {

    private String name;

    private int age;


    public Vehicle(String name, int age) {

        this.name = name;

        this.age = age;

    }
```

```java
public String getName() {

    return name;

}


public int getAge() {

    return age;

}


public void setName(String name) {

    this.name = name;

}


public void setAge(int age) {

    this.age = age;

}


@Override
public void drawObject() {

    System.out.println("Drawing a Vehicle");

}


@Override
public void rotateObject() {

    System.out.println("Rotating a Vehicle");
```

```java
    }


    @Override

    public void resizeObject() {

        System.out.println("Resizing a Vehicle");

    }


    @Override

    public void playSound() {

        System.out.println("Vehicle sound");

    }

}
```

**3. Manipulator Program**

```java
 public class Manipulator {

    public static void main(String[] args) {

        Drawable[] objects = new Drawable[4];

        objects[0] = new Animal("Lion");

        objects[1] = new Vehicle("Car", 5);

        objects[2] = new Vehicle("Bus", 10);

        objects[3] = new Animal("Elephant");


        for (Drawable object : objects) {

            object.drawObject();

            if (object instanceof Rotatable) {

                ((Rotatable) object).rotateObject();
```

```java
            }
            if (object instanceof Resizable) {
                ((Resizable) object).resizeObject();
            }
            if (object instanceof Sounds) {
                ((Sounds) object).playSound();
            }
            System.out.println();
        }
    }
}


//Output
```

```
C:\Users\rdcox\Documents\JAVA>cd EducationalTool

C:\Users\rdcox\Documents\JAVA\EducationalTool>dir
 Volume in drive C is Windows
 Volume Serial Number is 2080-E317

 Directory of C:\Users\rdcox\Documents\JAVA\EducationalTool

10/20/2023  10:29 AM    <DIR>          .
10/20/2023  10:29 AM    <DIR>          ..
10/20/2023  10:27 AM               734 Animal.java
10/20/2023  10:24 AM                54 Drawable.java
10/20/2023  10:29 AM               777 Manipulator.java
10/20/2023  10:25 AM                59 Resizable.java
10/20/2023  10:25 AM                57 Rotatable.java
10/20/2023  10:25 AM                51 Sounds.java
10/20/2023  10:28 AM               917 Vehicle.java
               7 File(s)          2,649 bytes
               2 Dir(s)  13,235,937,280 bytes free

C:\Users\rdcox\Documents\JAVA\EducationalTool>javac *.java

C:\Users\rdcox\Documents\JAVA\EducationalTool>java Manipulator
Drawing an Animal
Rotating an Animal
Resizing an Animal
Animal sound

Drawing a Vehicle
Rotating a Vehicle
Resizing a Vehicle
Vehicle sound

Drawing a Vehicle
Rotating a Vehicle
Resizing a Vehicle
Vehicle sound

Drawing an Animal
Rotating an Animal
Resizing an Animal
Animal sound


C:\Users\rdcox\Documents\JAVA\EducationalTool>
```