

Report for Lab4
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1. In the first task I created an interface Shapes with volume() and surfaceArea() methods. Point, Cube, Cylinder and Sphere that implement it. Each class has its own fields and methods run differently. For example, for Cylinder:

```
public double volume() {  
    return Math.PI * radius * radius * height;  
}  
  
public double surfaceArea() {  
    return 2 * Math.PI * radius * (radius + height);  
}
```

2. In second problem I created abstract class Animal with an abstract method Eat() and its subclass Rabbit with specific field color and realization of it method. Also i created an interface Moveable. Classes Car and Person implement it, because both can move, but it is the only common thing of them.
3. Third problem is about Person and its subclass Employee. This class implements interfaces Comparable and Cloneable. I wrote methods compareTo() and clone().

```
public int compareTo(Object o) {  
    Employee e = (Employee) o;  
    if (salary > e.salary)  
        return 1;  
    if (salary < e.salary)  
        return -1;  
    return 0;  
}  
  
public Employee clone() throws CloneNotSupportedException {  
    Employee clone = (Employee) super.clone();  
    clone.hireDate = (Date) hireDate.clone();  
    return clone;  
}
```

4. In fourth task I created interface Moveable with methods moveUp(), moveDown(), moveRight() and moveLeft(). Interface MoveablePoint implements it and has fields x and y for coordinates. MoveableCircle extends interface MoveablePoint (center of a circle) and specific method for finding an area of this circle.
5. In fifth problem I created class MinMax with a method minmax. It returns minimum and maximum values of an array.