Assignment-11

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UML class diagram:

<<interface>> Recolorable
- +void recolor(ShapeColor sc)

<<interface>> Shape
- +double area()

<<interface>> Resizable
- +void resize(double percentage)

<> TwoD
- #ShapeColor sc
- #int a
- #int b
- #int c
- #int d
- +TwoD()
- +TwoD(ShapeColor sc, int a)
- +TwoD(ShapeColor sc, int a, int b)
- +TwoD(ShapeColor sc, int a, int b, int c)
- +TwoD(ShapeColor sc, int a, int b, int c, int d)
- +TwoD(TwoD td)
- +int getA()
- +int getB()
- +int getC()
- +int getD()
- +ShapeColor getShapeColor()
- +void set(ShapeColor sc, int a, int b, int c, int d)
- +void recolor(ShapeColor sc)
- +String toString()

<<enumeration>> ShapeColor
- Blue
- Yellow
- Red
- Green
- White

<> ThreeD
- #ShapeColor sc
- #double a
- +ThreeD()
- +ThreeD(ShapeColor sc, double a)
- +ThreeD(ThreeD td)
- +double getA()
- +void set(ShapeColor sc, double a)
- +void resize(double percentage)
- +double volume()
- +String toString()

Sphere
- +Sphere()
- +Sphere(ShapeColor...)
- +Sphere(Sphere s)
- +double area()
- +double volume()
- +double getA()
- +void set(ShapeColor...)
- +String toString()

Cube
- +Cube()
- +Cube(ShapeColor sc,...)
- +Cube(Cube c)
- +double area()
- +double volume()
- +double getA()
- +void set(ShapeColor s...)
- +String toString()

Tetrahedron
- +Tetrahedron()
- +Tetrahedron(ShapeColor sc, double a)
- +Tetrahedron(Tetrahedron t)
- +double area()
- +double volume()
- +double getA()
- +void set(ShapeColor sc, double a)
- +String toString()

Circle
- +Circle()
- +Circle(Sha...)
- +Circle(Cir...)
- +double are...
- +int getRac...
- +void set(S...)
- +String toSt...

Rectangle
- +Rectangle()
- +Rectangle(Shap...)
- +Rectangle(Rect...)
- +double area()
- +int getLength()
- +int getWidth()
- +void set(Shape...)
- +String toString()

Triangle
- +Triangle()
- +Triangle(Shape...)
- +Triangle(Triangl...)
- +double area()
- +int getA()
- +int getB()
- +int getC()
- +void set(Shape...)
- +String toString()

Trapezoid
- -int h
- +Trapezoid()
- +Trapezoid(ShapeColor sc, int a, int b, int c, int d, int h)
- +int getA()
- +int getB()
- +int getC()
- +int getD()
- +int getHeight()
- +double area()

A2_S2_2020
- -static int getInt()
- -static double getDouble()
- -static ShapeColor getColor()
- -static boolean isTriangle(int a, int b, int c)
- -static TwoD getTwoD()
- -static ThreeD getThreeD()
- -static void displayList(ArrayList<Shape> alist)
- +static void main(String[] args)
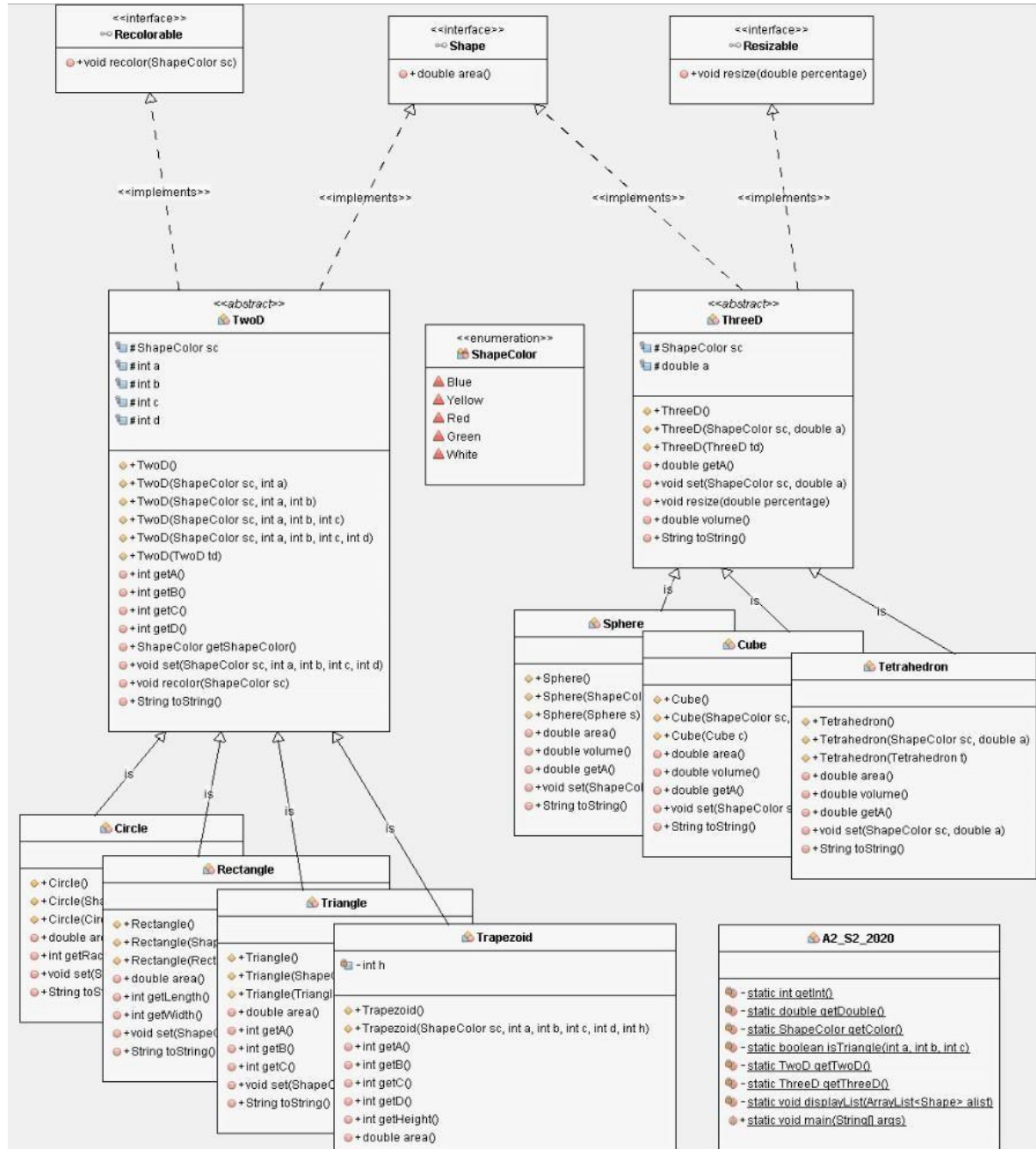
Output:

```
1=2D shapes-------2=3D shapes----->

select '1' or '2'

1

enter your options:

1)Circle

2)Rectangle

3)Trian

4)Trapezoid

Enter Option 1 or 2 or 3 or 4:

1

2D------------- shape

153.958

Do you Want to Continue press 'y'

y

1=2D shapes-------2=3D shapes----->

select '1' or '2'

1
```

```
enter your options:

1)Circle

2)Rectangle

3)Trian

4)Trapezoid

Enter Option 1 or 2 or 3 or 4:

2

2D------------- shape

Area of Ractangle:

24.0

Do you Want to Continue press 'y'

y

1=2D shapes-------2=3D shapes----->

select '1' or '2'

1

enter your options:

1)Circle

2)Rectangle
```

```
3)Trian

4)Trapezoid

Enter Option 1 or 2 or 3 or 4:

3

2D------------- shape

12.0

Do you Want to Continue press 'y'

y

1=2D shapes-------2=3D shapes----->

select '1' or '2'

4

Do you Want to Continue press 'y'

y

1=2D shapes------2=3D shapes----->

select '1' or '2'

1

enter your options:

1)Circle
```

```
2)Rectangle

3)Trian

4)Trapezoid

Enter Option 1 or 2 or 3 or 4:

4

2D------------- shape

0.0

Do you Want to Continue press 'y'

y

1=2D shapes-------2=3D shapes----->

select '1' or '2'

2

enter your options:

1)Sphere

2)Cube

3)Tetrahedron

Enter your Option 1 or 2 or 3 :

1
```

```
3D---------- shape

1988.0565119999999

Do you Want to Continue press 'y'

y

1=2D shapes-------2=3D shapes----->

select '1' or '2'

2

enter your options:

1)Sphere

2)Cube

3)Tetrahedron

Enter your Option 1 or 2 or 3 :

2

3D---------- shape

97.33599999999997

Do you Want to Continue press 'y'

y

1=2D shapes-------2=3D shapes----->
```

```
select '1' or '2'

2

enter your options:

1)Sphere

2)Cube

3)Tetrahedron

Enter your Option 1 or 2 or 3 :

3

3D---------- shape

22.942315217857924

Do you Want to Continue press 'y'
```