Object-Oriented Programming

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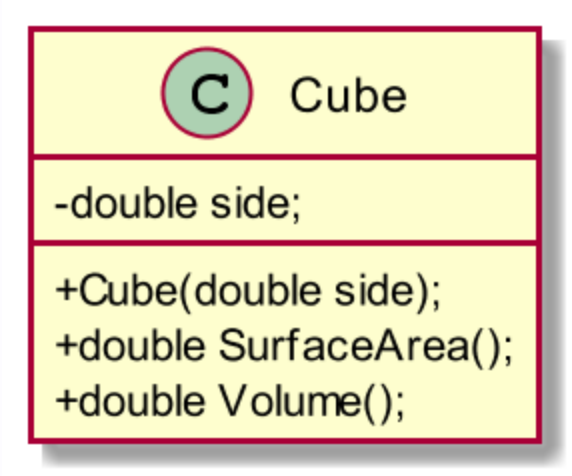
2020

Calculate Cube Volume

$$A = side^2$$
$$V = side^3$$

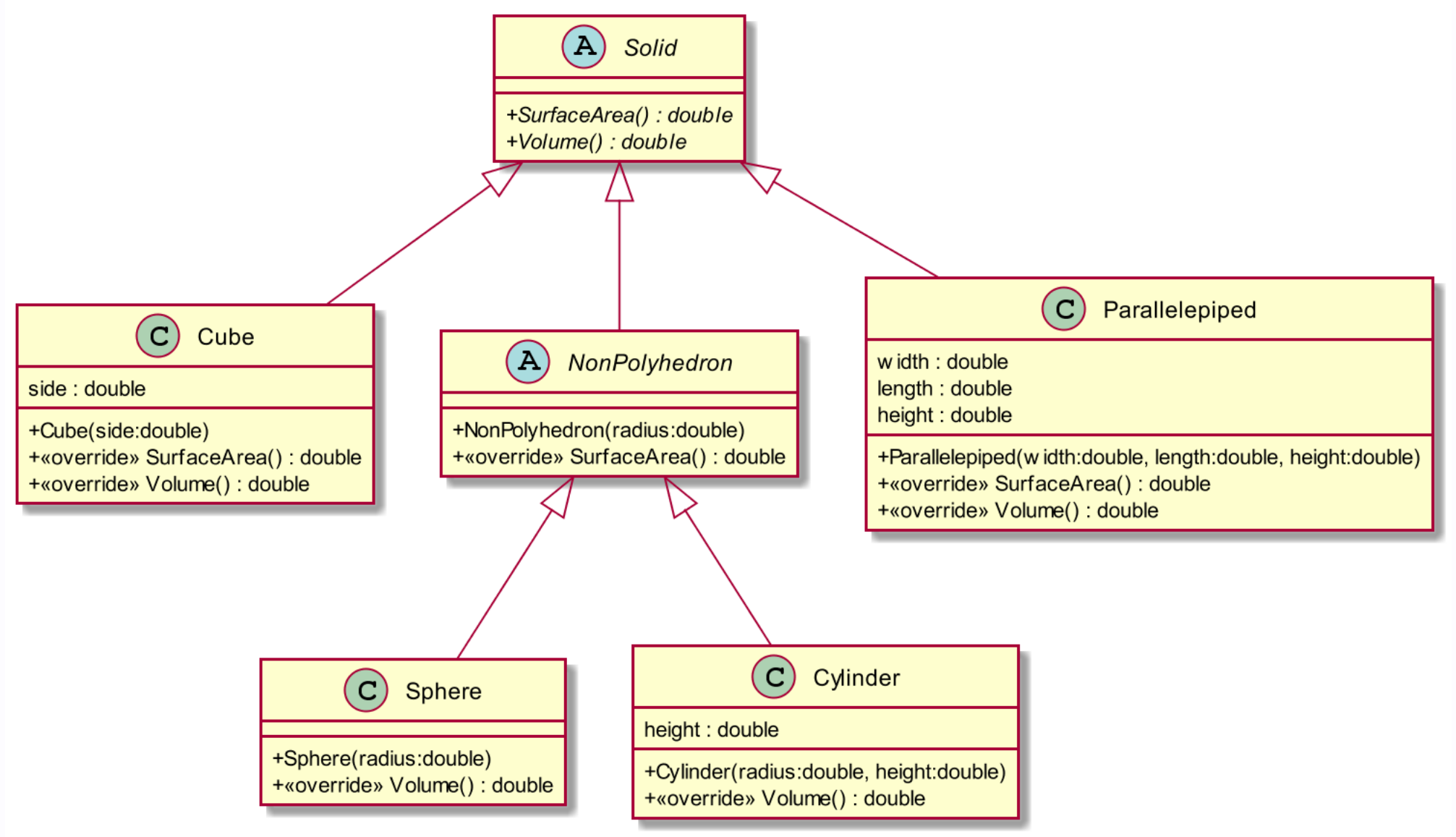


```
class Cube
{
    double side;

    public Cube(double side)
    {
        this.side = side;
    }

    public override double SurfaceArea(){
        return side * side;
    }

    public override double Volume(){
        return SurfaceArea() * side;
    }
}
```

Table 2. Area Formulas		
Shape	**Formula**	**Variables**
Square	$A = s^2$	s is the length of the side of the square.
Rectangle	$A = LW$	L and W are the lengths of the rectangle's sides (length and width).
Triangle	$A = \frac{1}{2}bh$	b and h are the base and height
Triangle	$A = \sqrt{s(s-a)(s-b)(s-c)}$ where $s = \frac{a+b+c}{2}$	a , b , and c are the side lengths and s is the semiperimeter
Parallelogram	$A = bh$	b is the length of the base and h is the height.
Trapezoid	$A = \frac{b_1+b_2}{2}h$	b_1 and b_2 are the lengths of the parallel sides and h the distance (height) between the parallels.
Circle	$A = \pi r^2$	r is the radius.

Table 3. Volume Formulas		
Shape	**Formula**	**Variables**
Cube	$V = s^3$	s is the length of the side.
Right Rectangular Prism	$V = LWH$	L is the length, W is the width and H is the height.
Prism or Cylinder	$V = Ah$	A is the area of the base, h is the height.
Pyramid or Cone	$V = \frac{1}{3}Ah$	A is the area of the base, h is the height.
Sphere	$V = \frac{4}{3}\pi r^3$	r is the radius.

https://www.varsitytutors.com/hotmath/hotmath_help/topics/perimeter-area-volume


Solid
+SurfaceArea() : double
+Volume() : double
Cube
side : double
+Cube(side:double)
+«override» SurfaceArea() : double
+«override» Volume() : double
NonPolyhedron
+NonPolyhedron(radius:double)
+«override» SurfaceArea() : double
Parallelepiped
w idth : double
length : double
height : double
+Parallelepiped(w idth:double, length:double, height:double)
+«override» SurfaceArea() : double
+«override» Volume() : double
Sphere
+Sphere(radius:double)
+«override» Volume() : double
Cylinder
height : double
+Cylinder(radius:double, height:double)
+«override» Volume() : double