

In [1]:

```
import math

def square_area(side): # Area of Square
    return side ** 2

def rectangle_area(length, width): # Area of Rectangle
    return length * width

def circle_area(radius): # Area of Circle
    return math.pi * radius ** 2

def triangle_area1(base, height): # Area of Triangle 01
    return 0.5 * base * height

def triangle_area2(a,b,c): # Area of Triangle 02
    s = float((a + b + c) / 2)
    return (s * (s - a) * (s - b) * (s - c)) ** 0.5
```

In [2]:

```
while True:
    print("Select the shape for which you want to calculate the area:")
    print("1. Square")
    print("2. Rectangle")
    print("3. Circle")
    print("4. Triangle (if base and height are given)")
    print("5. Triangle (if three sides of triangle are given)")

    choice = int(input("Enter your choice (1/2/3/4/5): "))

    if choice == 1:
        side = float(input("Enter the length of a side of the square: "))
        print("Area of the square:", square_area(side))
    elif choice == 2:
        length = float(input("Enter the length of the rectangle: "))
        width = float(input("Enter the width of the rectangle: "))
        print("Area of the rectangle:", rectangle_area(length, width))
    elif choice == 3:
        radius = float(input("Enter the radius of the circle: "))
        print("Area of the circle:", circle_area(radius))
    elif choice == 4:
        base = float(input("Enter the base of the triangle: "))
        height = float(input("Enter the height of the triangle: "))
        print("Area of the triangle:", triangle_area1(base, height))
    elif choice == 5:
        a = float(input("Enter the first side of the triangle: "))
        b = float(input("Enter the second side of the triangle: "))
        c = float(input("Enter the third side of the triangle: "))
        print("Area of the triangle:", triangle_area2(a, b, c))
    else:
        print("Invalid choice!")

    cont = input("Do you want to continue? (yes/no): ")
```

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if cont.lower() != 'yes':  
    break
```

Select the shape for which you want to calculate the area:

1. Square
2. Rectangle
3. Circle
4. Triangle (if base and height are given)
5. Triangle (if three sides of triangle are given)

Area of the square: 16.0

Select the shape for which you want to calculate the area:

1. Square
2. Rectangle
3. Circle
4. Triangle (if base and height are given)
5. Triangle (if three sides of triangle are given)

Area of the rectangle: 30.0

Select the shape for which you want to calculate the area:

1. Square
2. Rectangle
3. Circle
4. Triangle (if base and height are given)
5. Triangle (if three sides of triangle are given)

Invalid choice!

Select the shape for which you want to calculate the area:

1. Square
2. Rectangle
3. Circle
4. Triangle (if base and height are given)
5. Triangle (if three sides of triangle are given)

Area of the circle: 113.09733552923255

Select the shape for which you want to calculate the area:

1. Square
2. Rectangle
3. Circle
4. Triangle (if base and height are given)
5. Triangle (if three sides of triangle are given)

Area of the triangle: 1912.5

Select the shape for which you want to calculate the area:

1. Square
2. Rectangle
3. Circle
4. Triangle (if base and height are given)
5. Triangle (if three sides of triangle are given)

Area of the triangle: 14.523687548277813

In []: