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Assignment No. # 03

1) Area of a Rectangle

In [8]:

```
L=float(input("What's the Length Value in meter?  "))
W=float(input("What's the Widht Value in meter?   "))
Area = L*W
print(Area,"Meter")
```

```
50.0 Meter
```

2) Circumference of a Circle

In [11]:

```
r=float(input("What's the Value of Radius in meter?  "))
Circumference = 2*3.14*r
print(Circumference,"meter")
```

```
31.400000000000002 meter
```

3) Simple Interest

In [14]:

```
P=float(input("Enter the Value of Principle?  "))
R=float(input("Enter the Rate Value? "))
T=float(input("Enter the Time?  "))

Simple_Interest = P*R*T
print("RS",Simple_Interest)
```

```
RS 50000.0
```

4) Speed of an Object

In [17]:

```
D=int(input("Enter the Distance in meter? "))
t=int(input("Enter the Time in Second? " ))

Speed = D/t
print(Speed, "m/s")
```

```
2.0 m/s
```

5) BMI Calculator

In [22]:

```
W = float(input("Enter the Weight? "))
H = float(input("Enter the Height? "))
```

```
BMI = (W/H**2)
print(BMI,"kg/m2")
```

```
1.7538265306122451 kg/m2
```

6) Force Using Newton's Second Law

In [25]:

```
m = float(input("Enter the Mass?  "))
a = float(input("Enter the Acceleration? "))

Force = m*a
print(Force,"Newton")
```

```
200.0 Newton
```

7) Compound Interest

In [30]:

```
P = float(input("Enter the principal amount (P): "))
r = float(input("Enter the annual interest rate (r) in decimal (e.g., 0.05 for 5%): "))
n = int(input("Enter the number of times interest is compounded per year (n): "))
t = float(input("Enter the time in years (t): "))

A = P * (1 + r / n) ** (n * t)

print(f"The total amount after {t} years is: {A:.2f}")
```

```
The total amount after 1.0 years is: 6000.00
```

8) Perimeter of a Triangle

In [33]:

```
a = float(input("Enter the Value of Angle `a`?  "))
b = float(input("Enter the Value of Angle `b`?  "))
c = float(input("Enter the Value of Angle? `c`? "))

Perimeter = a+b+c
print(Perimeter,"meter")
```

```
60.0 meter
```

9) Volume of a Sphere

In [36]:

```
r = float(input("Enter the Value of Radius?  "))

Volume_of_a_Sphere = 4/3*3.14*r**3
print(Volume_of_a_Sphere,"m3")
```

```
523.3333333333334 m3
```

10) Kinetic Energy

In [39]:

```
m = float(input("Enter the Mass? "))
V = float(input("Enter the Velocity?  "))

Kinetic_Energy = 1/2*m*V**2
```

```
print(Kinetic_Energy,"Joules")
```

```
125.0 Joules
```

11) Quadratic Equation Roots

In [42]:

```
import math

# Taking inputs from the user
a = float(input("Enter the coefficient a: "))
b = float(input("Enter the coefficient b: "))
c = float(input("Enter the constant c: "))

# Checking if it's a valid quadratic equation
if a == 0:
    print("This is not a quadratic equation (a cannot be 0).")
else:
    # Calculating the discriminant
    discriminant = b**2 - 4*a*c

    if discriminant > 0:
        # Two real and distinct roots
        root1 = (-b + math.sqrt(discriminant)) / (2*a)
        root2 = (-b - math.sqrt(discriminant)) / (2*a)
        print(f"The roots are real and distinct: {root1:.2f}, {root2:.2f}")
    elif discriminant == 0:
        # One real and repeated root
        root = -b / (2*a)
        print(f"The root is real and repeated: {root:.2f}")
    else:
        # Complex roots
        real_part = -b / (2*a)
        imaginary_part = math.sqrt(-discriminant) / (2*a)
        print(f"The roots are complex: {real_part:.2f} + {imaginary_part:.2f}i, {real_pa
rt:.2f} - {imaginary_part:.2f}i")
```

```
The roots are complex: -0.75 + 2.33i, -0.75 - 2.33i
```

12) Temperature Conversion

In [45]:

```
C = float(input("Enter the Celsius °C Temperature Value?  "))

F = 9/5*C+32
print(f"The Temperature of {C} °C Celsius Changed into {F} °F Fahernite")
```

```
The Temperature of 4.0 °C Celsius Changed into 39.2 °F Fahernite
```

13) Gravitational Force

In [49]:

```
m1 = float(input("Enter the Mass 1 ?  "))
m2 = float(input("Enter the Mass 2 ?  "))
r = float(input("Enter the Radius ?  "))

Gravitational_Force = 9.8*m1*m2/r**2
print(Gravitational_Force, "N/m2")
```

```
2.1777777777777776 N/m2
```

14) Volume of a Cylinder

In [52]:

```
r = float(input("Enter the Radius?  "))
h = float(input("Enter the Height?  "))

Volume = 3.14*r**2*h
print(Volume,"m3")
```

```
785.0 m3
```

15) Pressure

In [57]:

```
F = float(input("Enter the Value of Force? "))
A = float(input("Enter the Value of Area? "))

Pressure = F/A
print(Pressure,"Pascals")
```

```
5.0 Pascals
```

16) Electric Power

In [60]:

```
V = float(input("Enter the Amount of Voltage?  "))
I = float(input("Enter the Amount of Current?  "))

Power = V/I
print(Power,"Watt")
```

```
1.5 Watt
```

17) Perimeter of a Circle (Circumference)

In [63]:

```
r = float(input("Enter the Radius?  "))

Circumference_of_Circle = 2*3.14*r
print(Circumference_of_Circle, "m")
```

```
62.800000000000004 m
```

18) Future Value in Savings

In [68]:

```
PV = float(input("Enter the Present Value?  "))
r = float(input("Enter the Rate Value?  "))
t = float(input("Enter the Time? "))

FV = PV*(1+r)**t
print("RS: ",FV)
```

```
RS:  2420000.0
```

19) Work Done by a Force

In [71]:

```
import math
```

```
f = float(input("Enter the Value of Force? "))
d = float(input("Enter the Value of Displacement? "))
Theeta = float(input("Enter the Value of Angle Theeta? "))
Workdone = f*d*math.cos(Theeta)
print(Workdone)
```

```
525.3219888177298
```

20) Heat Transfer

In [74]:

```
m = float(input("Enter the Value of Mass? "))
c = float(input("Enter the Value of Heat Capacity? "))

Q= m*c
print(Q,"Joules")
```

```
2000.0 Joules
```

In [ ]:

```

```