UNIT 1 QB Problem with solution

Write a Python program to add 2 Numbers with user input.

In [3]:
```
num1 = float(input("Enter the first number: "))
num2 = float(input("Enter the second number: "))
result = num1 + num2
print(f"The sum of {num1} and {num2} is {result}")
```

```
Enter the first number: 5.7
Enter the second number: 7.8
The sum of 5.7 and 7.8 is 13.5
```

Write a Python program to find the area of Circle.

In [4]:
```
import math

radius = float(input("Enter the radius of the circle: "))
area = math.pi * (radius ** 2)
print(f"The area of the circle with radius {radius} is {area}")
```

```
Enter the radius of the circle: 5
The area of the circle with radius 5.0 is 78.53981633974483
```

Write a Python program to find the area of Triangle.

In [5]:
```
base = float(input("Enter the length of the base: "))
height = float(input("Enter the height: "))
area = 0.5 * base * height
print(f"The area of the triangle is {area}")
```

```
Enter the length of the base: 10
Enter the height: 5
The area of the triangle is 25.0
```

Write a Python program to calculate the area of a trapezoid.

In [6]:
```
base1 = float(input("Enter the length of the first base: "))
base2 = float(input("Enter the length of the second base: "))
height = float(input("Enter the height: "))
area = 0.5 * (base1 + base2) * height
print(f"The area of the trapezoid is {area}")
```

```
Enter the length of the first base: 4
Enter the length of the second base: 2
Enter the height: 2
The area of the trapezoid is 6.0
```

Write a Python program to calculate surface volume and area of a cylinder.

In [7]:
```
import math

radius = float(input("Enter the radius of the cylinder: "))
height = float(input("Enter the height of the cylinder: "))
surface_area = 2 * math.pi * radius * (radius + height)
volume = math.pi * (radius ** 2) * height
print(f"The surface area of the cylinder is {surface_area}")
print(f"The volume of the cylinder is {volume}")
```

```
Enter the radius of the cylinder: 5
Enter the height of the cylinder: 10
The surface area of the cylinder is 471.23889803846896
The volume of the cylinder is 785.3981633974483
```

Write a Python program to convert Fahrenheit to Celsius and vice versa.

In [8]:
```
choice = input("Convert from (F)ahrenheit to Celsius or (C)elsius to Fahre
if choice == 'F':
    fahrenheit = float(input("Enter temperature in Fahrenheit: "))
    celsius = (fahrenheit - 32) * 5/9
    print(f"{fahrenheit}°F is equal to {celsius:.2f}°C")
elif choice == 'C':
    celsius = float(input("Enter temperature in Celsius: "))
    fahrenheit = (celsius * 9/5) + 32
    print(f"{celsius}°C is equal to {fahrenheit:.2f}°F")
else:
    print("Invalid choice. Please enter 'F' or 'C'.")

```

```
Convert from (F)ahrenheit to Celsius or (C)elsius to Fahrenheit: F
Enter temperature in Fahrenheit: 38
38.0°F is equal to 3.33°C
```

Write a python code to demonstrate calculator functionality

In [26]:

```python
while True:
    print("Options:")
    print("Enter 'add' for addition")
    print("Enter 'subtract' for subtraction")
    print("Enter 'multiply' for multiplication")
    print("Enter 'divide' for division")
    print("Enter 'quit' to end the program")

    user_input = input(": ")

    if user_input == "quit":
        break
    elif user_input == "add":
        num1 = float(input("Enter first number: "))
        num2 = float(input("Enter second number: "))
        result = num1 + num2
        print("Result:", result)
    elif user_input == "subtract":
        num1 = float(input("Enter first number: "))
        num2 = float(input("Enter second number: "))
        result = num1 - num2
        print("Result:", result)
    elif user_input == "multiply":
        num1 = float(input("Enter first number: "))
        num2 = float(input("Enter second number: "))
        result = num1 * num2
        print("Result:", result)
    elif user_input == "divide":
        num1 = float(input("Enter numerator: "))
        num2 = float(input("Enter denominator: "))
        if num2 == 0:
            print("Division by zero is not allowed.")
        else:
            result = num1 / num2
            print("Result:", result)
    else:
        print("Invalid input. Please enter a valid operation.")

```

```
Options:
Enter 'add' for addition
Enter 'subtract' for subtraction
Enter 'multiply' for multiplication
Enter 'divide' for division
Enter 'quit' to end the program
: divide
Enter numerator: 10
Enter denominator: 0
Division by zero is not allowed.
Options:
Enter 'add' for addition
Enter 'subtract' for subtraction
Enter 'multiply' for multiplication
Enter 'divide' for division
Enter 'quit' to end the program
: quit
```

In [25]:

```python
def add(x, y):
    return x + y

def subtract(x, y):
    return x - y

def multiply(x, y):
    return x * y

def divide(x, y):
    if y == 0:
        return "Division by zero is not allowed."
    return x / y

while True:
    print("Options:")
    print("Enter 'add' for addition")
    print("Enter 'subtract' for subtraction")
    print("Enter 'multiply' for multiplication")
    print("Enter 'divide' for division")
    print("Enter 'quit' to end the program")

    user_input = input(": ")

    if user_input == "quit":
        break
    elif user_input in ("add", "subtract", "multiply", "divide"):
        num1 = float(input("Enter first number: "))
        num2 = float(input("Enter second number: "))

        if user_input == "add":
            print("Result:", add(num1, num2))
        elif user_input == "subtract":
            print("Result:", subtract(num1, num2))
        elif user_input == "multiply":
            print("Result:", multiply(num1, num2))
        elif user_input == "divide":
            print("Result:", divide(num1, num2))
    else:
        print("Invalid input. Please enter a valid operation.")

```

```
Options:
Enter 'add' for addition
Enter 'subtract' for subtraction
Enter 'multiply' for multiplication
Enter 'divide' for division
Enter 'quit' to end the program
: add
Enter first number: 5
Enter second number: 7
Result: 12.0
Options:
Enter 'add' for addition
Enter 'subtract' for subtraction
Enter 'multiply' for multiplication
Enter 'divide' for division
Enter 'quit' to end the program
: quit
```

Write a python program to convert Days into Years, Months and Days. (Ex: if input of Days = 370 then output will be, years=1, months=0 and days = 5).

In [12]:
```
days = int(input("Enter the number of days: "))
years = days // 365
months = (days-years*365)//30
remaining_days = days-(365*years)-(months*30)
print(f"Years: {years}, Months: {months}, Days: {remaining_days}")
```

```
Enter the number of days: 370
Years: 1, Months: 0, Days: 5
```


Write a Python program to convert hours into minutes and seconds (Ex : input of hours = 6 then output will be, minutes = 360 and seconds = 21600).

In [13]:
```
hours = int(input("Enter the number of hours: "))
minutes = hours * 60
seconds = hours * 3600
print(f"Minutes: {minutes}, Seconds: {seconds}")
```

```
Enter the number of hours: 6
Minutes: 360, Seconds: 21600
```

"Write a Python program to find an integer exponent x such that a^x = n.

Input: a = 2 : n = 1024 Output: 10 Input: a = 3 : n = 81 Output: 4"

In [15]:
```
a = int(input("Enter the base (a): "))
n = int(input("Enter the value (n): "))
x = 0
while a ** x != n:
    x += 1
print(f"An integer exponent x such that {a}^x = {n} is {x}")

```

```
Enter the base (a): 3
Enter the value (n): 81
An integer exponent x such that 3^x = 81 is 4
```

In [14]:
```
import math

a = int(input("Enter the base (a): "))
n = int(input("Enter the value (n): "))

# Calculate x using logarithms
x = math.log(n, a)

if x.is_integer():
    print(f"The integer exponent x such that {a}^x = {n} is {int(x)}")
else:
    print(f"No integer exponent x exists for {a}^x = {n}")

```

```
Enter the base (a): 2
Enter the value (n): 1024
The integer exponent x such that 2^x = 1024 is 10
```


QB MCQ

In [16]:
```
a=50
b=60
print((a and b)/False)
```

```
---------------------------------------------------------------------------
ZeroDivisionError                         Traceback (most recent call last)
~\AppData\Local\Temp\ipykernel_22376\1735566662.py in <module>
      1 a=50
      2 b=60
----> 3 print((a and b)/False)

ZeroDivisionError: division by zero
```

In [17]:
```
a=0
b=5
a or b ==5 or True + 7 -4 * 3
```

Out[17]: True

In [18]:
```
3**1**3/True
```

Out[18]: 3.0

In [20]:
```
print(True * False / True)
```

```
0.0
```

In [21]:
```
a=0
b=6
c=9
d=10
x=(a or b) and ((a or c) or (b and d))
print(x)
```

```
9
```

In [22]:
```
print(int("6" == 6.0) * 3 + 4 % 5)
```

```
4
```

In [23]:
```
"a"+"bc"
```

Out[23]:
```
'abc'
```

In [24]:
```
a=0
b=6

x=(a or b) or ((a and a) or (a and b))
print(x)
```

```
6
```


practice problems

SUM OF 3 DIGIT NUMBER

In [2]:
```
n= int(input('enter three digit number'))
#last digit
c=n%10
n=n//10
#second digit
b=n%10
n=n//10
#first digit
a=n%10
print(f"sum of three digit numbe {a+b+c}")
```

```
enter three digit number123
sum of three digit numbe 6
```