ASSIGNMENT 2 ON PYTHON by: <"BHARGAV G8 DS">

Write a Python program to create a person class. Include attributes like name, country and date of birth. Implement a method to determine the person's age

In [6]:
```
from datetime import datetime

class Person:
    def __init__(self, name, country, dob):
        self.name = name
        self.country = country
        self.dob = dob

    def calculate_age(self):

        dob_date = datetime.strptime(self.dob, '%Y-%m-%d')

        current_date = datetime.now()

        years = current_date.year - dob_date.year
        months = current_date.month - dob_date.month
        days = current_date.day - dob_date.day

        if months < 0 or (months == 0 and days < 0):
            years -= 1
            months = 12 - abs(months)
```

```
# Example usage:
person1 = Person("John", "USA", "1990-05-15")
age_years, age_months, age_days = person1.calculate_age()
print("Name:", person1.name)
print("Country:", person1.country)
print("Date of Birth:", person1.dob)
print("Age: {} years, {} months, {} days".format(age_years, age_months, age_days))
```

```
Name: John
Country: USA
Date of Birth: 1990-05-15
Age: 33 years, 9 months, 22 days
```

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Write a Python program to create a class that represents a shape. Include methods to calculate its area and perimeter. Implement subclasses for different shapes like circle, triangle, and square.

In [7]:
```
from math import pi, sqrt

class Shape:
    def area(self):
        pass

    def perimeter(self):
        pass

class Circle(Shape):
    def __init__(self, radius):
        self.radius = radius

    def area(self):
        return pi * self.radius ** 2

    def perimeter(self):
        return 2 * pi * self.radius
```

```
class Triangle(Shape):
    def __init__(self, side1, side2, side3):
        self.side1 = side1
        self.side2 = side2
        self.side3 = side3

    def area(self):
        s = (self.side1 + self.side2 + self.side3) / 2
        return sqrt(s * (s - self.side1) * (s - self.side2) * (s - self.side3))

    def perimeter(self):
        return self.side1 + self.side2 + self.side3

class Square(Shape):
    def __init__(self, side):
        self.side = side

circle = Circle(5)
print("Circle - Area:", circle.area())
print("Circle - Perimeter:", circle.perimeter())

triangle = Triangle(3, 4, 5)
print("Triangle - Area:", triangle.area())
print("Triangle - Perimeter:", triangle.perimeter())

square = Square(4)
print("Square - Area:", square.area())
print("Square - Perimeter:", square.perimeter())
```

```
Circle - Area: 78.53981633974483
Circle - Perimeter: 31.41592653589793
Triangle - Area: 6.0
Triangle - Perimeter: 12
Square - Area: 16
Square - Perimeter: 16
```