

# Using Constructor In Python

## Task 1

```
In [1]: class Person:
        def __init__(self, name, age):
            self.name = name
            self.age = age

        person1 = Person("Alice", 25)
        person2 = Person("Bob", 30)

        print(person1.name)
        print(person2.age)
```

```
Alice
30
```

## Task 2

```
In [2]: import math

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

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

            def circumference(self):
                return 2 * math.pi * self.radius

        circle1 = Circle(5)
        circle2 = Circle(7)

        print("Area of circle 1:", circle1.area())
        print("Circumference of circle 2:", circle2.circumference())
```

```
Area of circle 1: 78.53981633974483
Circumference of circle 2: 43.982297150257104
```

## Task 3

```
In [3]: class Book:
        def __init__(self, title, author):
            self.title = title
            self.author = author

        book1 = Book("The Great Gatsby", "F. Scott Fitzgerald")
        book2 = Book("To Kill a Mockingbird", "Harper Lee")

        print(book1.title, "by", book1.author)
        print(book2.title, "by", book2.author)
```

The Great Gatsby by F. Scott Fitzgerald  
To Kill a Mockingbird by Harper Lee

## Task 4

```
In [4]: class Rectangle:
        def __init__(self, width, height):
            self.width = width
            self.height = height

        def area(self):
            return self.width * self.height

        def perimeter(self):
            return 2 * (self.width + self.height)

        rect1 = Rectangle(5, 10)
        rect2 = Rectangle(3, 6)

        print("Area of rectangle 1:", rect1.area())
        print("Perimeter of rectangle 2:", rect2.perimeter())
```

Area of rectangle 1: 50  
Perimeter of rectangle 2: 18

## Task 5

```
class Student:
    def __init__(self, name, id, grade):
        self.name = name
        self.id = id
        self.grade = grade

student1 = Student("Alice", 12345, "A")
student2 = Student("Bob", 67890, "B+")

print(student1.name, "has an ID of", student1.id, "and got a grade of", student1.grade)
print(student2.name, "has an ID of", student2.id, "and got a grade of", student2.grade)
```

Alice has an ID of 12345 and got a grade of A  
Bob has an ID of 67890 and got a grade of B+