# Day – 06

September 09

Types of Numbers in Python :

1. **Natural Numbers (ℕ):**
   - Counting numbers → 1, 2, 3, 4, ...
   - Do not include 0.
2. **Whole Numbers:**
   - Natural numbers + 0 → 0, 1, 2, 3, ...
3. **Integers (ℤ):**
   - All whole numbers and their negatives → ..., -3, -2, -1, 0, 1, 2, 3, ...
4. **Rational Numbers (ℚ):**
   - Numbers expressed as p/q (fraction form), where q ≠ 0.
   - Example: 1/2, -4/5, 3
5. **Irrational Numbers:**
   - Cannot be expressed as fraction, non-repeating and non-terminating decimals.
   - Example: √2, π, e
6. **Real Numbers (ℝ):**
   - All rational + irrational numbers.
   - Example: -3, 0, 4.5, √2, π
7. **Imaginary Numbers:**
   - Numbers involving i (in Python j) where $i^2 = -1$.
   - Example: 2j, -5j

8. **Complex Numbers:**

- Combination of real and imaginary → a + bj.
- Example: 3 + 2j

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# Program to check whether a number is positive, negative, or zero

```
num = float(input("Enter a number: "))

if num > 0:
    print("The number is Positive")
elif num < 0:
    print("The number is Negative")
else:
    print("The number is Zero")
```

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# Program to check Odd or Even

```
num = int(input("Enter a number: "))

if num % 2 == 0:
    print("The number is Even")
else:
    print("The number is Odd")
```

```
# Program to print result based on percentage

percentage = float(input("Enter your percentage: "))

if 85 <= percentage <= 100:
    print("Distinction")
elif 60 <= percentage <= 84:
    print("First Class")
elif 50 <= percentage <= 59:
    print("Second Class")
elif 35 <= percentage <= 49:
    print("Pass")
elif 0 <= percentage <= 34:
    print("Fail")
else:
    print("Invalid Percentage! Please enter between 0 and 100.")
```