Introduction to Python

Python is a high-level, interpreted programming language.

It emphasizes readability and simplicity.

Key features:

- Dynamically typed

- Object-oriented

- Supports multiple programming paradigms

Common uses:

- Web development

- Data science

- Automation

- AI/ML

Python Data Types & Structures

Primitive types:

- int, float, str, bool

Collection types:

- list: ordered, mutable

- tuple: ordered, immutable

- set: unordered, unique elements

- dict: key-value pairs

Example:

numbers = [1, 2, 3, 4]

person = {'name': 'Alice', 'age': 25}

Control Flow & Functions

Conditional statements:

- if, elif, else

Loops:

- for, while

Functions: define reusable code blocks

Example:

```python
def greet(name):
    return f"Hello, {name}!"

for i in range(3):
    print(greet('Python'))
```