

Python Variables and Collections

1. Variables in Python:

- Variables are containers for storing data values.

Example:

```
x = 5 # integer
```

```
name = "Alice" # string
```

2. Data Types:

- int: Represents integers.
- float: Represents decimal numbers.
- str: Represents text (string).
- bool: Represents Boolean values (True/False).

3. Lists:

- Lists are ordered and mutable collections.

Example:

```
my_list = [1, 2, 3, "hello"]
```

4. Tuples:

- Tuples are ordered but immutable collections.

Example:

```
my_tuple = (1, 2, 3, "hello")
```

5. Sets:

- Sets are unordered collections with no duplicate elements.

Example:

```
my_set = {1, 2, 3, "hello"}
```

6. Dictionaries:

- Dictionaries are collections of key-value pairs.

Example:

```
my_dict = {"name": "Alice", "age": 25}
```

7. Creating Variables:

- Variables can be created by simply assigning a value to them.

Example:

```
age = 25
```

```
city = "New York"
```