Assignment No - 2

Exploring Python Data Types and Their Methods

Introduction

Python provides several built-in data types that allow developers to store and manipulate different kinds of data. These data types include integers, floating-point numbers, complex numbers, lists, tuples, strings, sets, dictionaries, and boolean values. Each data type has its own set of methods that provide useful functionalities. This assignment explores the methods available for these data types using Python's built-in help() function.

Methods of Different Data Types

Python allows us to check all available methods of a data type using help(). Below are some examples demonstrating common methods for each data type:

Integer (int)

```python
x = 10
print(x.bit_length())
print(x.to_bytes(2, 'big'))
```

Floating Point (float)

```python
y = 10.5
print(y.is_integer())
print(y.as_integer_ratio())
```

Complex Number (complex)

```python
z = 3 + 4j
print(z.real)
print(z.imag)
```

List

```python
lst = [1, 2, 3, 4]
lst.append(5)
lst.reverse()
print(lst)
```

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Tuple

```python
tpl = (1, 2, 3, 4)
print(tpl.count(2))
print(tpl.index(3))
```

String (str)

```python
s = "Python Programming"
print(s.upper())
print(s.replace("Python", "Java"))
```

Set

```python
st = {1, 2, 3, 4}
st.add(5)
st.remove(2)
print(st)
```

Dictionary (dict)

```python
dct = {"name": "Alice", "age": 25}
dct.update({"city": "New York"})
print(dct.keys())
```

Boolean (bool)

```python
a = True
b = False
print(a or b)
print(a and b)
```

Using help() Function

To get a list of available methods for any data type, we can use help() as shown below:

```python
help(int)
help(float)
help(list)
```

This command will display all available methods and their descriptions.

Conclusion

Understanding Python's data types and their methods is essential for effective programming. By using help() and experimenting with different methods, developers can unlock powerful functionalities to manipulate data efficiently.

THANKYOU