

Python

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Part I

Introduction

Part II

Python

1 Basics

1.1 Variables

In python we have 5 data types: string, number, tuple, list, dictionary. String and number are simple data types and each can hold just one entity but the other three can hold many items inside themselves.

1.1.1 String and Number

```
# Defining a string  
stringvar = "Hello"
```

```
# Defining an integer
```

```
num = 5
```

```
# Defining a floating variable  
fltnum = 5.0
```

1.1.2 List

Lists are the most popular python data structure. They can store a collection of items with different types. We can define a list in many ways and for accessing its items we can use square brackets [] and also use slice operator [:] for accessing many items as below:

```
"""
```

```
Defining a list with different syntaxes  
"""
```

```
varlst = [5, 9, "hello", 5.687, "MAS", 99]  
varlst2 = list() # creates an empty list  
varlst3 = list((9, 5.68, 1, 66))
```

```
# accessing list elements
```

```
print varlst # prints all the list  
print varlst[0] # prints the first element at zero position  
print varlst[-1] # prints the last element  
print varlst[1:5] # prints all elements from first position to fifth  
# but not including the fifth  
print varlst[2:] # prints all elements from second position to the end
```

1.1.3 Tuple

Tuples are

1.1.4 Dictionary

1.2 Comments

Comments in python:

```
# Single line comment
```

```
"""
```

```
Multi  
line  
comment  
"""
```

1.3 Naming Conventions

Python naming conventions:

- Class names start with an uppercase letter. All other identifiers start with a lowercase letter.
- Starting an identifier with a single leading underscore indicates that the identifier is private.
- Starting an identifier with two leading underscores indicates a strongly private identifier.
- If the identifier also ends with two trailing underscores, the identifier is a language-defined special name.

- 2 Control Flow
- 3 Loops
- 4 Data Structures
- 5 Function
- 6 OOP

Part III

numpy and scipy

Part IV

Plotting and Loading Data

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