

Introduction to Computing

MCS1101B

Lecture 3: Python

Inputs in Python

Python `input()` function is used to get input from the user. It prompts for the user input and reads a line. After reading data, it converts it into a string and returns that.

```
>>> input()
5
'5'
```

```
>>> input("enter:")
enter: A
'A'
```

```
>>> input()
alks
'alks'
```

```
>>> int(input())
5
5
```

```
>>> list(input())
ABC
['A', 'B', 'C']
```

```
>>> tuple(input())
A,B
???
```

Files in Python

`open()` returns a file object, and is generally used with two positional arguments and one keyword argument, and it returns a file object

```
f = open('workfile', 'w', encoding="utf-8")
```

To close a file in Python, you use the `close()` method. This method is called on the file object you want to close

```
f.close()
```

Some useful functions for file handling

```
f.readline()  
f.readlines()  
f.read()  
f.seek()  
f.tell()
```

A better way of using files in code:

The use of "with" keyword makes sure that file is closed once you are out of the block

```
with open("example.txt", "w") as file:  
    file.write("Hello World!")
```

```
with open("example.txt", "r") as file:  
    print(file.read(10)) #reads 10 bytes
```

```
with open("example.txt") as file:  
    print(file.readlines()) #reads all lines
```

Useful Modules and Cheat Sheets

Python

Collection of 11 Best Python Cheat Sheets

Work with large, multi-dimensional arrays and matrices, along with a large collection of high-level mathematical functions

NumPy

Collection of 10 Best NumPy Cheat Sheets

Work with tabular data with heterogeneously-typed columns (similar to excel, but more powerful)

Pandas

Collection of 7 Beautiful Pandas Cheat Sheets

Python library for creating static, interactive, and animated visualizations. It is used for creating plots, histograms, bar charts, scatter plots, etc.

Matplotlib

Fin.