

Introduction to Python

The Unix Based Operating System: Elements of unix based operating systems—Linux/FreeBSD, Shells,Editors,Getting help—man, info pages; Programming in Python: Interpreter and its environment; Introduction to data types, operators and variables; statements; branching, conditional and iteration; functions—abstraction, recursion; floats, successive refinement, finding roots; lists and mutability, dictionaries, pseudocode; divide and conquer methods; exceptions; debugging and testing; dynamic programming—overlapping subproblems, optimal substructure; object-oriented programming, classes and methods—encapsulation, inheritance, shadowing; python modules; Pylab, SciPy, Matplotlib; Scientific Computing Projects using Python