

Python



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Introduction to Python

What is Python and history of Python?
Unique features of Python
Python-2 and Python-3 differences
Install Python and Environment Setup
First Python Program
Python Identifiers, Keywords and Indentation
Comments and document interlude in Python
Command line arguments
Getting User Input
Python Data Types
What are variables?
Python Core objects and Functions
Number and Maths
Week 1 Assignments

Control Statements

if-else
if-elif-else
while loop
for loop
break
continue
assert
pass
return



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List, Ranges & Tuples in Python

Introduction

Lists in Python

More about Lists

Understanding Iterators

Generators, Comprehensions and Lambda Expressions

Introductio

Generators and Yield

Next and Ranges

Understanding and using Ranges

More About Ranges

Ordered Sets with tuples

Python Dictionaries and Sets

Introduction to the section

Python Dictionaries

More on Dictionaries

Sets

Python Sets Examples

Input and Output in Python

Reading and writing text files

Writing Text Files

Appending to Files and Challenge

Writing Binary Files Manually

Using Pickle to Write Binary Files



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Exceptions

- Errors in Python
 - Compile-Time Errors
 - Runtime Errors
 - Logical Errors
- What is Exception?
- Handling an exception
 - try....except...else
 - try-finally clause
- Argument of an Exception
- Python Standard Exceptions
- Raising an exceptions
- User-Defined Exceptions

Python Regular Expressions

- What are regular expressions?
- The match Function
- The search Function
- Matching vs searching
- Search and Replace
- Extended Regular Expressions
- Wildcard

Python Multithreaded Programming

- What is multithreading?
- Difference between a Process and Thread
- Concurrent Programming and GIL
- Uses of Thread
- Starting a New Thread
- The Threading Module
- Thread Synchronization
- Locks
- Semaphore
- Deadlock of Threads
- Avoiding Deadlocks
- Daemon Threads



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Using Databases in Python

Python MySQL Database Access
Install the MySQLdb and other Packages
Create Database Connection
CREATE, INSERT, READ Operation
DML and DDL Oepration with Database

Graphical User Interface

GUI in Python
Button Widget
Label Widget
Text Widget

Django Web Framework in Python

Introduction to MVC and MVT architecture on web development.
Django folder structure flow of control.

Web scraping in python.

Introduction to Data Science.



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