

FullStack Python Course Syllabus



Web Development Syllabus

1. HTML 4 and HTML 5

- A. Introduction of HTML
- B. Tag, Elements and Attributes
- C. Basics syntax
- D. Table
- E. List
- F. Forms
- G. Structure of HTML4 and HTML5
- H. Semantic and non-semantic tags
- I. HTML 5 Features
- J. New Input type
- K. Forms Attribute
- L. SVG
- M. Canvas
- N. Audio, Video Tag



2. CSS (Cascading Style Sheet)

- A. Attributes (ID, Class, Style, Title)
- B. CSS Types (Inline, Internal, External)
- C. Box-model
- D. Display Property (Block, Inline, None)
- E. Visibility-Hidden
- F. Position Property(Static, Relative, Absolute, Fixed)
- G. Z-index Property
- H. Combinators (Descendant Selector, Child Selector, Adjacent Sibling Selector, General Sibling Selector)
- I. CSS Pseudo-classes (Link, Visited, Hover, Active)
- J. CSS Pseudo-elements (First Line, First Letter, Before, After ,Selection)
- K. Static Web Page
- L. Viewport Meta tag



3. CSS 3

- A. Background, Multiple Backgrounds
- B. Font Related Features (online fonts)
- C. Text-Effect and Box-Effect
- D. Gradients-Linear and Radial
- E. Transition
- F. Transformation
- G. Animation
- H. Media Queries

4. Bootstrap

- A. Introduction of Bootstrap (Responsive)
- B. Typography
- C. Tables
- D. Images, Buttons
- E. Grid Structure-Type of columns
- F. Forms



- G. Jumbortron,
- H. well,
- I. Panel
- J. Navbar, Nav Tab
- K. Carousel
- L. Responsive Web Page

5. JavaScript

- A. Introduction of JavaScript
- B. Use of JavaScript
- C. Variables
- D. Keywords
- E. Data Type (Primitive, non-primitive)
- F. JS Conditions (if, if-else)
- G. Conditional operators & logical operators
- H. Loops (for, while, do-while)
- I. Switch Case
- J. Functions
- K. Set Timeout and set Interval Function



L. HTML DOM

M. Use the document object to access and manipulate HTML

N. Changing HTML Elements

O. Adding and Deleting Elements

P. Array

Q. Objects

R. How to access Objects (Dot Notation, bracket Notation)

S. Object Creation (Empty Object, Literal Way, Constructor Way)

T. Prototype

U. Validations

V. Events

6. jQuery

1. Introduction

A. JQuery Library

B. First JQuery Example

C. The Document Ready Function

D. How to escape a special character



2. Selectors

- A. Basic Selectors
- B. Precise Selectors
- C. Combination of Selectors
- D. Hierarchy Selectors
- E. Selection Index Filters
- F. Visibility Filters
- G. Forms Selectors
- H. Forms Filters

3. Find Dropdown Selected Item

4. Document Traversal

- A. Getting a specific DOM element

5. Event

- A. Events Helpers
- B. Attach Event
- C. Detaching Events
- D. Events Triggering



6. HTML Manipulation

7. AJAX with jQuery

8. JSON Introduction



SQL Syllabus

Chapter 1: - Introduction to Basic Database Concepts

- A. What is Data, Field, Record and database?
- B. Limitations of File Management System,
- C. Basic Concepts of Advantages of DBMS,
- D. Level of abstraction, Database models,
- E. Exploring Relational DBMS,
- F. Discuss the basic design, theoretical, and physical aspects of a relational database
- G. Understanding Client and Server,
- H. What is MySQL?

Chapter 2: Introduction to SQL

- A. MySQL datatypes
- B. Basics of Types of SQL Statements
- C. Create and use Database
- D. Categorize the different types of SQL statements:
- E. DDL, DML, DQL, DCL and TCL



F. Data types in SQL

G. Exploring DDL Statements on Table

Chapter 3: Writing Basic SQL Statement

A. List the capabilities of SQL SELECT statements

B. Generate a report of data from the output of a basic
SELECT statement

C. Select All Columns

D. Select Specific Columns

E. Use Column Heading Defaults

F. Use Arithmetic Operators

G. Understand Operator Precedence

H. Learn the DESCRIBE command to display the table structure

I. Using Parentheses

J. Defining a Null

K. Defining a Column Alias

L. Using Column Aliases

M. Concatenation Operator

N. Using the Concatenation Operator

O. Literal Character Strings

P. Using Literal Character Strings

Q. Duplicate Rows

R. Eliminating Duplicate Rows



Chapter 4: Restricting and Sorting Data

- A. Limiting Rows Using a Selection
- B. Limiting the Rows Selected
- C. Using the WHERE Clause
- D. Character Strings and Dates
- E. Comparison Conditions
- F. Using Comparison Conditions
- G. Other Comparison Conditions
- H. Using the BETWEEN Condition
- I. Using the IN Condition
- J. Using the LIKE Condition
- K. Using the NULL Conditions
- L. Logical Conditions
- M. Using the AND Operator
- N. Using the OR Operator
- O. Using the NOT Operator
- P. Rules of Precedence
- Q. ORDER BY Clause
- R. Sorting in Descending Order
- S. Sorting by Column Alias
- T. Sorting by Multiple Columns



Chapter 5: Advance DDL Commands

- A. Normalization
- B. Create Database objects
- C. Alter Table Statements
- D. Drop Table Statements
- E. Various Constraints
- F. Commit
- G. Rollback
- H. Savepoint
- I. Creating Views

Chapter 6: Working on DML statements

- A. Data Manipulation Language
- B. Adding a New Row to a Table
- C. The INSERT Statement Syntax
- D. Inserting New Rows
- E. Inserting Rows with Null Values
- F. Inserting Special Values
- G. Inserting Specific Date Values
- H. Creating a Script
- I. Copying Rows from another Table



- J. Changing Data in a Table
- K. The UPDATE Statement Syntax
- L. Updating Rows in a Table
- M. Updating Two Columns with a Subquery
- N. Updating Rows Based on another Table
- O. Updating Rows: Integrity Constraint Error
- P. Removing a Row from a Table
- Q. The DELETE Statement
- R. Deleting Rows from a Table
- S. Deleting Rows Based on another Table
- T. Deleting Rows: Integrity Constraint Error
- U. Using a Subquery in an INSERT Statement

Chapter 7: Use of built-in function in SQL

- A. Conversion Function
- B. Logical Functions
- C. Math Function
- D. Aggregate Functions
- E. String Functions
- F. Date Functions



Chapter 8: Working on multiple tables and Retrieve records from multiple tables

- A. Self-Join
- B. Inner Join
- C. Left Join
- D. Right Join
- E. Cross Join

Chapter 9: Working on subqueries

- A. Using a Subquery to Solve a Problem
- B. Subquery Syntax
- C. Using a Subquery
- D. Guidelines for Using Subqueries
- E. Types of Subqueries
- F. Single-Row Subqueries
- G. Executing Single-Row Subqueries
- H. Using Group Functions in a Subquery
- I. The HAVING Clause with Subqueries
- J. Multiple-Row Subqueries
- K. Using the ANY Operator in Multiple-Row Subqueries
- L. Using the ALL Operator in Multiple-Row Subqueries
- M. Null Values in a Subquery



Chapter 10: Python with MYSQL

- A. Regex with MYSQL
- B. Regex with Python
- C. Python MySQL Limit
 - Limit the Result
 - Start From Another Position
- D. Quick intro of SQLIA
- E. Import
- F. Export
- G. Overview of Cursor and Trigger



Python Syllabus

1.Introduction to Python

- A. What is Python and history of Python?
- B. Unique features of Python
- C. Python-2 and Python-3 differences
- D. Install Python and Environment Setup
- E. First Python Program
- F. Python Identifiers, Keywords and Indentation
- G. Comments and document interlude in Python
- H. Command line arguments
- I. Getting User Input
- J. Python Data Types
- K. What are variables?
- L. Python Core objects and Functions
- M. Number and Maths
- N. Week 1 Assignments

2.Control Statements

- A. if-else
- B. if-elif-else
- C. while loop
- D. for loop



- E. break
- F. continue
- G. assert
- H. pass
- I. return

3. List, Ranges & Tuples in Python

- A. Introduction
- B. Lists in Python
- C. More about Lists
- D. Understanding Iterators
- E. Generators, Comprehensions and Lambda Expressions
- F. Introductio
- G. Generators and Yield
- H. Next and Ranges
- I. Understanding and using Ranges
- J. More About Ranges
- K. Ordered Sets with tuples

4. Python Dictionaries and Sets

- A. Introduction to the section
- B. Python Dictionaries
- C. More on Dictionaries
- D. Sets
- E. Python Sets Examples



5.Input and Output in Python

- A. Reading and writing text files
- B. Writing Text Files
- C. Appending to Files and Challenge
- D. Writing Binary Files Manually
- E. Using Pickle to Write Binary Files

6.Python built in function

- A. Python user defined functions
- B. Python packages functions
- C. Defining and calling Function
- D. The anonymous Functions
- E. Loops and statement in Python
- F. Python Modules & Packages

7.Python Object Oriented

- A. Overview of OOP
- B. The self variable
- C. Constructor
- D. Types Of Variables
- E. Namespaces
- F. Creating Classes and Objects
- G. Inheritance



H. Types of Methods

I. Instance Methods Static Methods Class Methods

J. Accessing attributes

K. Built-In Class Attributes

L. Destroying Objects

M. Abstract classes and Interfaces

N. Abstract Methods and Abstract class

O. Interface in Python

P. Abstract classes and Interfaces

8.Exceptions

A. Errors in Python

B. Compile-Time Errors

C. Runtime Errors

D. Logical Errors

E. What is Exception?

F. Handling an exception

G. try....except...else

H. try-finally clause

I. Argument of an Exception

J. Python Standard Exceptions

K. Raising an exceptions

L. User-Defined Exceptions



9. Python Regular Expressions

- A. What are regular expressions?
- B. The match Function
- C. The search Function
- D. Matching vs searching
- E. Search and Replace
- F. Extended Regular Expressions
- G. Wildcard

10. Python Multithreaded Programming

- A. What is multithreading?
- B. Difference between a Process and Thread
- C. Concurrent Programming and GIL
- D. Uses of Thread
- E. Starting a New Thread
- F. The Threading Module
- G. Thread Synchronization
- H. Locks
- I. Semaphore
- J. Deadlock of Threads
- K. Avoiding Deadlocks
- L. Daemon Threads



11.Using Databases in Python

- A. Python MySQL Database Access
- B. Install the MySQLdb and other Packages
- C. Create Database Connection
- D. CREATE, INSERT, READ Operation
- E. DML and DDL Oepration with Database

12.Graphical User Interface

- A. GUI in Python
- B. Button Widget
- C. Label Widget
- D. Text Widget

13.Django Web Framework in Python

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

14.Web scraping in python.

15.Introduction to Data Science.



Django Syllabus

1.Django Prerequisite

Introduction to HTML5, CSS3 and Bootstrap

2.Django Framework

Introduction to Django

Installing Django

Setting up a database

Starting a project

Difference between a App and a Project

Role of Flask and Django

3.Basics of Dynamic Web Pages

Dynamic Content

Mapping URLs to views

Request Processing by Django

A overview of settings file in Django

Pretty Error Pages

4.The Django Template System

Template System Basic

Using Template System



Basic Template and Filters
How to Configure Template
Template Loading
Template Inheritance
Course Name

5.Interacting with databases

Dumb way
MTV way
Conguring the database
Dening Models in Python
Selecting and Deleting Objects
What are Migrations and Why we do that

6.The Django Administration site

Activating the admin interface
Using the admin interface
Customizing the interface
Admin part (How to create Superuser in Python)
What are Models?
Models and Admin Linkup
Modelform creation



7. Form Processing

Creating a feedback form
Custom look and feel
Creating Forms and models
Form Validation
What is Context in Django
Custom Form
How to setup Email in our Projects

8. Advanced Views and URLconfs

Streamlining Function Imports
Using Named Group
Capturing Texts in URLs
URL Routing
What is Render and relative import
URL names as Links

9. Generic Views

Using Generic Views
Generic Views of objects
Course Name
Extending Generic Views



10. Extending Template Engine

Template Language Review

Request Context and Processor

Inside Template Loading

Extending Template System

Writing Custom Template Loaders

11. Template Language Review

Djangos Session Framework

Users and Authentication

Permissions, Groups, Messages and Proles

How to add Authentication in Django Project with help of
Registration Redux module

