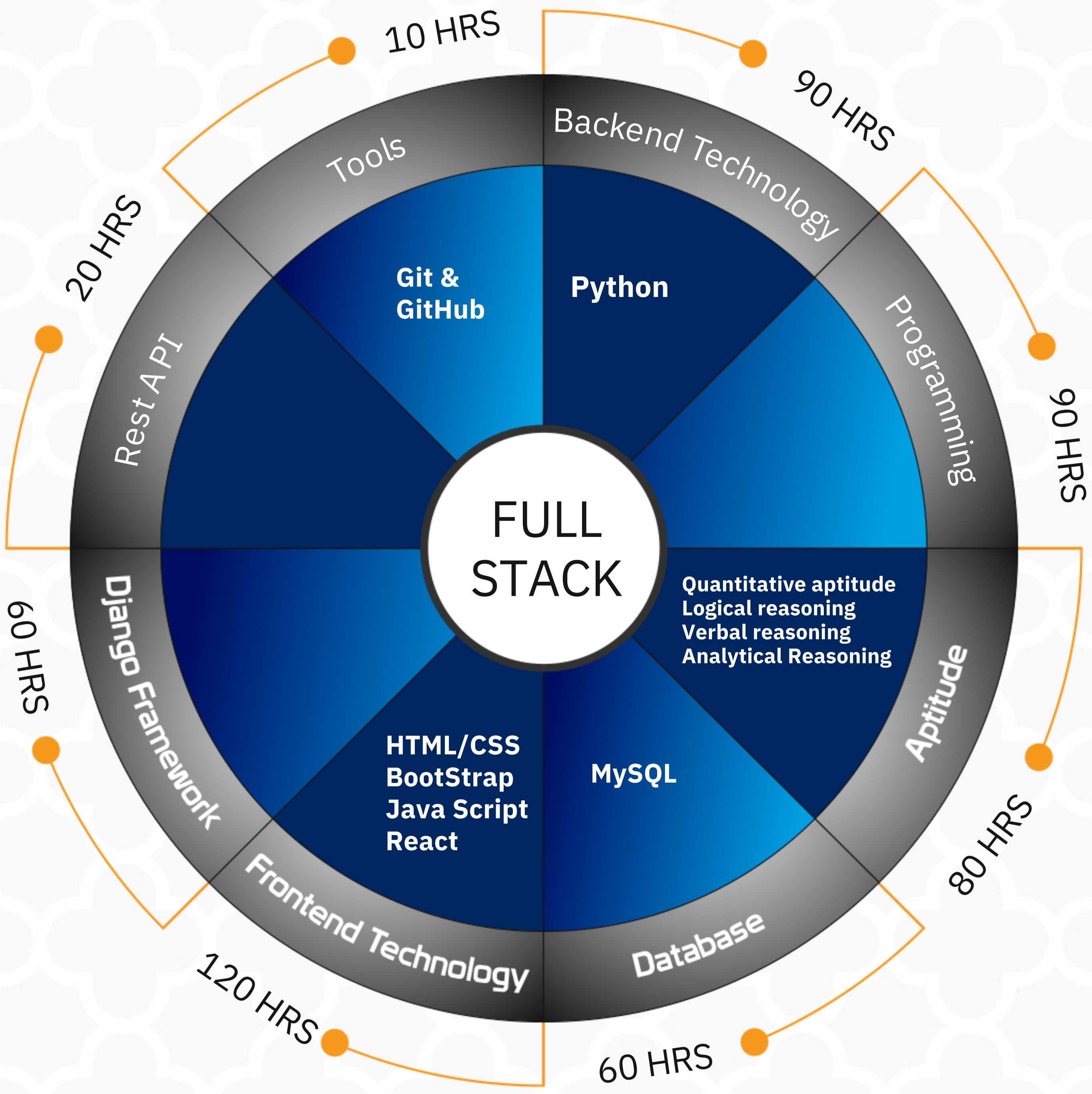
Python FULL STACK

COURSE OVERVIEW



Objectives

- To understand the concepts and constructs of Python.
- To create own Python programs, know the machine learning algorithms in Python and work on a real-time project running on Python.

Python Language Fundamentals

- Python Implementation Alternatives/Flavors
- Keywords
- Identifiers
- Constants / Literals
- Data types
- Python Syntax

Python Variables

- Bytes Data Type
- Byte array
- String Formatting in Python
- Introduction
- Initialization of variables
- Local variables
- Global variables
- ‘global’ keyword
- Input and Output operations
- Data conversion functions – int(), float(), complex(), str(), chr(), ord()

Operators

- Arithmetic Operators
- Comparison Operators
- Python Assignment Operators
- Logical Operators
- Bitwise Operators
- Shift operators
- Membership Operators
- Identity Operators
- Ternary Operator
- Operator precedence
- Difference between “is” vs “==”

Input & Output Operators

- Print
- Input

Control Statements

- Conditional control
- statements If
- f-else
- If-elif-else
- Nested-if
- Loop control statements
- for
- while
- Nested loops
- Branching statements
- Break
- Continue
- Pass
- Return

Data Structures or Collections

- Introduction
- Strings, List, Tuple, range
- Set, Frozen set, Dictionary
- Strings
- What is string?
- Representation of Strings
- Processing elements using indexing
- Processing elements using Iterators
- Manipulation of String using Indexing and Slicing
- String operators
- Methods of String object
- String Formatting
- String functions
- String Immutability

List Collection

- What is List?
- Need of List collection
- Different ways of creating List
- List comprehension
- List indices
- Processing elements of List through Indexing and Slicing
- List object methods
- List is Mutable
- Mutable and Immutable elements of
- List Nested Lists
- List_of_lists
- Shallow Copy and Deep Copy
- zip() in Python
- How to unzip?
- Python Arrays

Tuple Collection

- What is tuple?
- Different ways of creating Tuple
- Methods of Tuple object
- Tuple is Immutable
- Mutable and Immutable elements of Tuple
- Process tuple through Indexing and Slicing
- List v/s Tuple

Set Collection

- What is set?
- Different ways of creating set
- Difference between list and set
- Iteration Over Sets
- Accessing elements of set
- Python Set Methods
- Python Set Operations
- functions and methods of set
- Python Frozen set
- Difference between set and frozenset ?

Dictionary Collection

- What is dictionary?
- Difference between list, set and
- dictionary How to create a dictionary?
- Accessing values of dictionary
- Python Dictionary Methods
- Copying dictionary
- Updating Dictionary
- Reading keys from Dictionary
- Reading values from Dictionary
- Reading items from Dictionary
- Delete Keys from the dictionary
- Sorting the Dictionary
- Python Dictionary Functions and
- methods Dictionary comprehension

File & Directory handling

- Introduction to files
- Opening file
- File modes
- Reading data from file
- Writing data into file
- Appending data into file
- Line count in File
- CSV module
- Creating CSV file
- Reading from CSV file
- Writing into CSV file

Exception Handling & Types of Errors

- What is Exception?
- Why exception handling?
- Syntax error v/s Runtime error
- Exception codes – Attribute Error, Value Error, Index Error, Type Error...
- Handling exception – try except block
- Try with multi except
- Handling multiple exceptions with single except block
- Try-except-finally
- Try with finally
- Raise keyword
- Custom exceptions / User defined exceptions
- Need to Custom exceptions

Regular expressions

- Understanding regular expressions
- String v/s Regular expression string
- Match()
- Search()
- Split()
- Findall()
- Sub()
- Subn()
- Expressions using operators and symbols
- Simple character matches
- Special characters
- Character classes
- Mobile number extraction
- Mail extraction

OOPs

- Procedural v/s Object oriented programming
- Principles of OOP – Encapsulation Abstraction (Data Hiding)
- Classes and Objects
- How to define class in Python?
- Types of variables – instance variables, class variables.
- Types of methods – instance methods, class method, static method
- Object initialization
- ‘self’ reference variable
- Access modifiers
- Property() object
- Creating object properties using setaltr, getaltr functions
- Encapsulation(Data Binding)
- What is polymorphism?
- Overriding
- Overloading
  1. Method Overloading
  2. Constructor Overloading
- Class re-usability
- Composition
- Aggregation
- Inheritance – single, multilevel, multiple, hierarchical & hybrid inheritance and Diamond inheritance
- Constructors in inheritance
- super()
- Runtime polymorphism
- Method overriding
- Method Resolution Order(MRO)

```
_operation == "MIRROR_Y":
irror_mod.use_x = False
irror_mod.use_y = True
irror_mod.use_z = False
_operation == "MIRROR_Z":
irror_mod.use_x = False
irror_mod.use_y = False
irror_mod.use_z = True

selection at the end -add
_ob.select= 1
ier_ob.select=1
ntext.scene.objects.active
("Selected" + str(modifier
irror_ob.select = 0
 bpy.context.selected_obj
ata.objects[one.name].sel

int("please select exactly

-- OPERATOR CLASSES ----
```

Multi-threading & Multi Processing

- Introduction
- Multi tasking v/s Multi threading
- Threading module
- Creating thread–inheriting Thread class, Using callable object
- Single threaded application
- Multi threaded application
- Can we call run() directly?
- Need to start() method
- Sleep()
- Join()
- Achieving Synchronization

HTML5 SYLLABUS

HTML BASICS

- HTML-Introduction
- HTML-Editors
- Basic Tags And Attributes Div And Span Tags
- HTML Styles
- List,images
- HTML Tables
- HTML Frames
- HTML Forms

HTML5 Introduction

- Limitations of HTML 4
- HTML5 HISTORY
- DOCTYPE:
- Character Encoding:

HTML5

- <acronym>

HTML5 Semantic Elements

- <article>
- <aside>
- <details>
- <figcaption>
- <figure>
- <footer>
- <header>
- <main>
- <mark>
- <nav>
- <section>
- <summary>
- <time>

Obsolete Elements

- <applet>
- <basefont>
- <big>
- <center>
- <dir>
- <font>
- <frame>
- <frameset>
- <isindex>
- <noframes>
- <s>
- <strike>
- <tt>
- <u>
- <xmp>

HTML5 Semantic Elements

- <article>
- <aside>
- <details>
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- <footer>
- <header>
- <main>
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- <nav>
- <section>
- <summary>
- <time>

HTML5 Canvas

- What is HTML Canvas?
- Canvas Coordinates
- Canvas – Text
- Canvas – Paths
- Canvas – Gradients
- Canvas – Images
- Importing External Images & Setting the background
- Working with Colors & Geometrical transformations
- Easing Animations in Canvas
- Pixel manipulation with canvas
- clip() Method
- Canvas Examples

HTML5 – SVG, Video And Audio

- What is SVG?
- SVG text
- SVG Paths
- HTML5 Video And Audio
- Tags

HTML APIs

- HTML Drag and Drop API
- HTML Geolocation API
- HTML Web Storage API
- HTML Web Workers API

HTML5 input types

- E-mail address field
- Search field
- Phone number field
- URL field
- range field
- tel field
- Numeric field
- Slider controls
- Date and time
- pickers Color picker
  control

HTML5 forms

- <datalist>
- <keygen>
- <output>

- HTML5 form attributes

CSS3 SYLLABUS

CSS Basics(1.0 and 2.0)

- Introduction
- Box model
- CSS Syntax, Selectors
- CSS Properties

CSS Transitions

- Transition
- Transition-delay
- Transition-duration
- Transition-property
- Transition-timing-function
- @keyframes Rule
- Animation Properties
- calc() Function
- CSS content Property

CSS Gradients

- Linear Gradients
- Radial Gradients

CSS Web Fonts

- @font-face Rule
- Different Font Formats
- CSS Font Descriptors

Advanced Selectors in CSS

- Adjacent Sibling Selector
- Attribute Selector
- nth-of-type Selector
- Direct Child Selector
- General Sibling Selector
- Element Selector
- ID Selector
- Class Selector
- Star Selector
- Descendant Selector

CSS @media Rule

- Definition
- Media Types
- Media Features

CSS Multiple Backgrounds

- background-size
- background-origin
- background-clip

CSS Multiple Columns

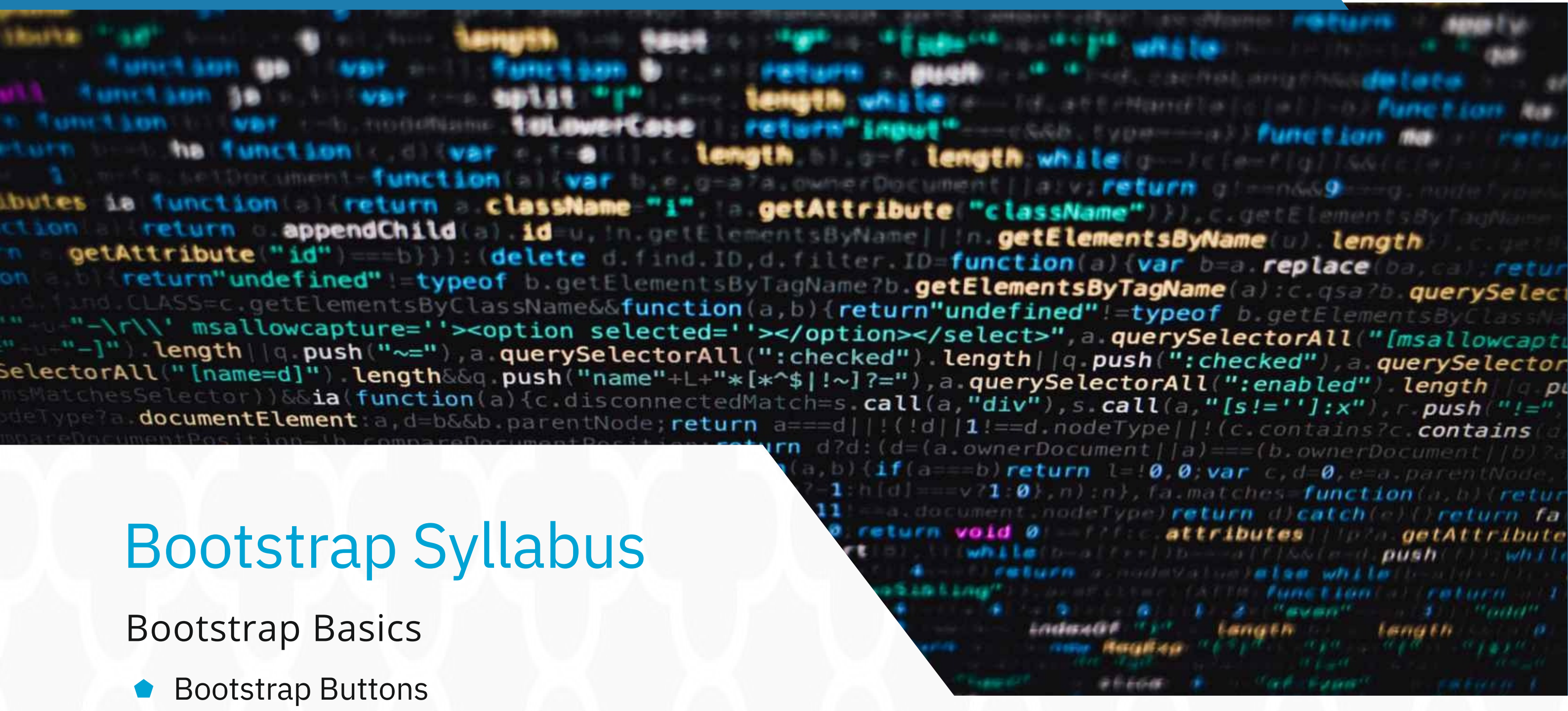
- column-count
- column-gap
- column-rule-style
- column-rule-width
- column-rule-color
- column-rule
- column-span
- column-width

CSS 3D Transforms

- CSS 3D Transforms Methods
- CSS Transform Properties
- CSS 3D Transform Methods

CSS Website Layout

- Header
  Navigation Bar
- Content
- Unequal Columns
  Footer



Bootstrap Syllabus

Bootstrap Basics

- Bootstrap Buttons
- Bootstrap Forms
- Bootstrap Navbars
- Bootstrap Grid System
- Bootstrap images
- Bootstrap Tables
- Bootstrap - Jumbotron
- Bootstrap - Button Groups

Javascript Syllabus

Introduction

- JavaScript Output
- JavaScript Statements
- JavaScript Syntax
- JavaScript Variables
- JavaScript Operators
- Control Statements
- Conditional Statements

JavaScript Functions

- Syntax
- Function Invocation
- return statement
- Local Variables
- Object Methods
- this Keyword

JavaScript Forms

- Form Validation
- HTML Form Validation
- Data Validation
- Constraint Validation
- Validation API

Data Types

- Strings
- Numbers
- Booleans
- Arrays
- Objects
- Undefined
- Null

JavaScript Arrays

- Creating an Array
- New keyword
- Properties and Methods
- Looping through elements
- Array Methods
- Array Sorting

DOM Elements

- Document Object
- Model DOM Methods
- DOM Document
- HTML DOM
- Changing CSS
- DOM Events
- DOM Navigation

MySQL Syllabus

MYSQL Introduction

- Database models
- ER Model Overview
- Data types

Basics Queries

- Data Sorting
- Query Design &Functions
- Grouping
- Joins
- Arithmetic and String functions
- SET Operators
- Creating Complex Queries
- DML operations - Insert, Update & Delete

Database Operations

- Database Objects - Create,
- Alter and Drop Tables
- Views
- Complex Views
- Indexes

  Advanced Index Concepts

Django Syllabus

Introduction To Django Framework

- What is a web framework?
- MVT design pattern
- Importance of Django
- framework Creating and running a Django project
- Creating multiple applications
- Defining URL patterns inside an application

Templates And Static Files

- Creating a template based application
- Defining template tags
- Application to display employee information
- Inserting static files
- Developing a blog application using static files

Database Operations

- Configuring the database with sqlite3
- Configuring the database with mysql
- Configuring the database with mongodb
- Importance make migrations and migrate
- Creating a Bank database
- Creating a Student database Module Django Forms
- Difference between HTML forms and Django forms
- Form handling process
- Form fields and validation Model Forms
- Implementing custom validators
- Template inheritance and template filters
- Creating a course registration form
- Creating an employee information form

CRUD Operations

- Creating views at class level
- Creating a template file for
- ListView Developing an online movie booking application
- Developing an employee profile application
- Developing a customer database application

REST Api

- Setting up of Django Rest framework
- Rest Framework views
- Creating custom action PUT, POST, PATCH, DELETE methods
- Working with Serializers classes
- JWT Authentication
- Handling relationships Consuming third party API

Projects

Note: All projects will be implemented and deployed in live environment.

1. Creation Of Hotel website by Using html And mysql
2. Shopping website by using html And mysql
3. Employee Management system With CRUD operations by using Django Framework
4.Python Project on Password Management System With Encryption By Using tkinter
5. Blog management By using Django Framework

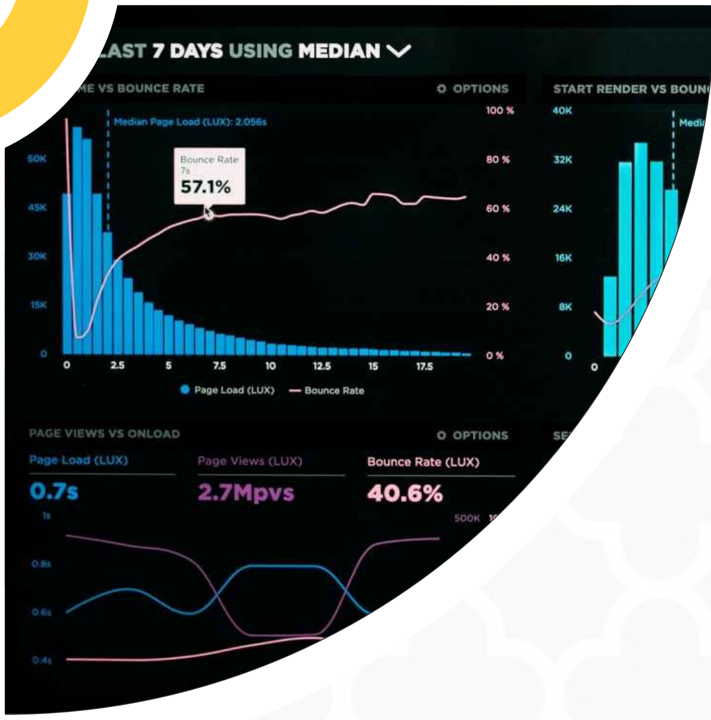
Python

FULL STACK

```
self.fingerprints = set()
self.logdupes = True
self.debug = debug
self.logger = logging.getLogger(
if path:
    self.file = open(os.path.join(
    self.file.seek(0)
    self.fingerprints.update(x.rstrip

@classmethod
def from_settings(cls, settings):
    debug = settings.getbool('DUPEFILTER
    return cls(job_dir(settings), d

def request_seen(self, request
    fp = self.request_fing
    if fp in self.finge
        return True
    self.fingerpr
    if self.fi
        sel
```



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