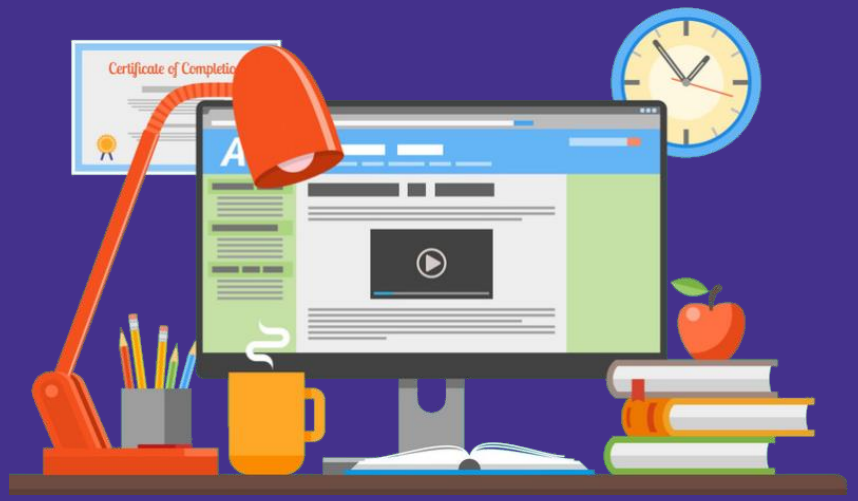
theknowledgeacademy

Python Expert Package

New York - San Francisco - London - Sydney - Dubai - Singapore - Vancouver - Bangalore

theknowledgeacademy

Contents



Our Expert Package

Below is the type of packages containing multiple courses delivered as Online Instructor-led and Online self-paced. When buying this package, you'll get an additional cost benefit on the purchase price.

POPULAR

Python Expert Package

10 courses

Included courses

- Python Programming Training
- Advanced SQL
- Python with Machine leaning
- Python Django Training
- Python Game Development Training with Pygame
- Data Analysis and Visualisation with Python
- OpenCV with Python Training
- Pyspark Training
- Python Data Science Training
- Natural Language Processing (NLP) Fundamentals with Python

Courses

Below are the courses cover in this Python Expert Package.

- **Course 1: Python Programming Training**
- **Course 2: Data Analysis and Visualisation with Python**
- **Course 3: Python with Machine Leaning**
- **Course 4: Python Django Training**
- **Course 5: Python Game Development Training with Pygame**
- **Course 6: Natural Language Processing (NLP) Fundamentals with Python**
- **Course 7: OpenCV with Python Training**
- **Course 8: Python Game Development Training with Pygame**
- **Course 9: Python Data Science Training**
- **Course 10: Advanced SQL**

Course 1

Python Programming Training Course Outline

Module 1

Introduction to Python

- Naming Python
- Why Use Python?
- Python Platform
- Python Flavours
- Python Today
- Python Installation
- IDLE – Simple IDE
- Writing a Program
- Using Script Mode
- PyDev Eclipse

Module 2

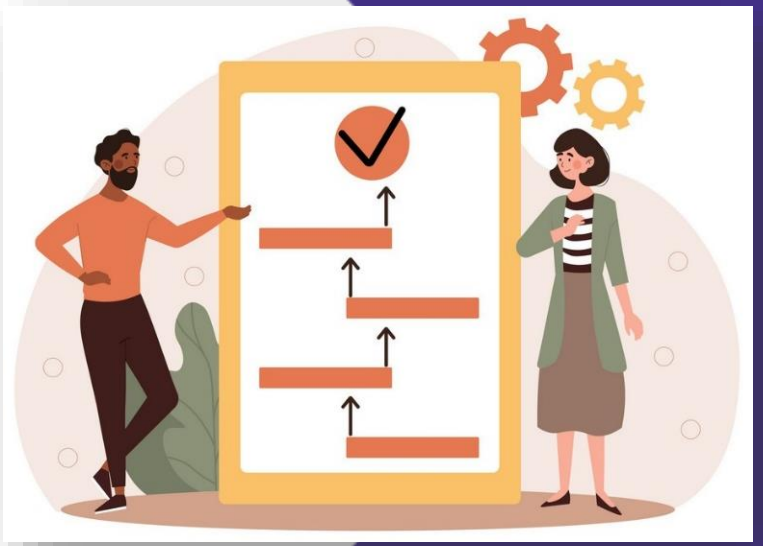
Python Basics

- Statements
- Blocks
- Understanding and Creating Variables
- Input () Function
- Variable Assignment
- Data Types
- Numbers
- Numeric Operators
- Augment Numeric Operators
- Strings
- Sequence Array
- String Indexes
- String Operators
- Tuple and List Operators
- List Assign Element
- Set Operators
- Dictionary Operators
- Comparison Operators
- Element Comparison
- Logical Expression

Module 3

Flow Control and Functions

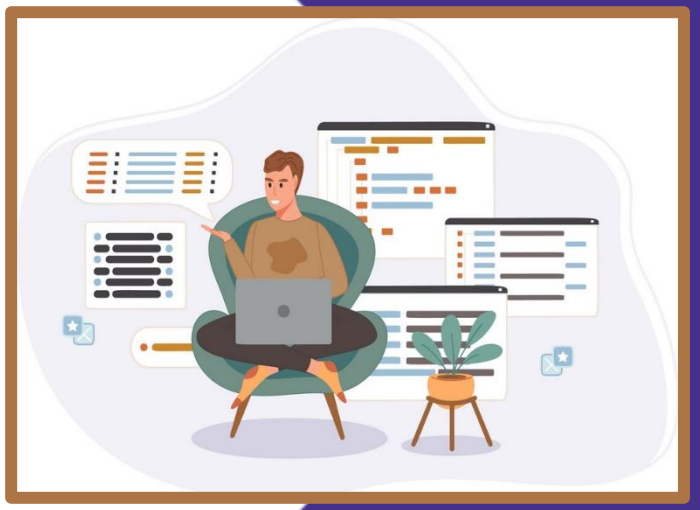
- IF Statement
- ELIF
- Function
- Useful String Methods
- Conversion Functions
- Specific Functions for Lists
- Dictionary Specific Methods
- Sets Specific Methods-
- Sorting Data and Complex Sorting
- Range
- Loops
- Iterators
- Generators



Module 4

Python Programming

- Functions in Python
- Namespaces
- Scopes
- Parameters
- Map () Function
- Modules and Packages
- Random Numbers
- Date and Time
- Exception
- Introducing the Handle It Program
- Regular Expression



Module 5

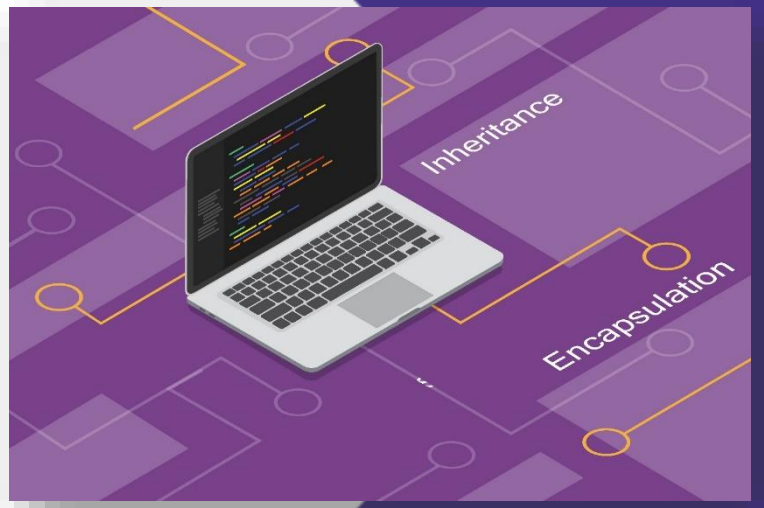
Software Objects

- Object-Oriented Programming
- Creating Classes, Methods, and Objects
- Introducing the Simple Critter Program
- Defining a Class
- Defining a Method
- Instantiating an Object
- Invoking a Method
- Using Constructors
- Creating a Constructor
- Creating Multiple Objects
- Access Object
- Destroy Objects

Module 6

Class Attributes and Inheritance

- Using Class Attributes and Static Methods
- Creating a Class Attribute
- Creating a Static Method
- Class Vs Object Method
- Class Built-in Attributes
- Printing an Object (How?)
- Class Inheritance
- Overloading and Overriding
- Encapsulation: 'setter' and 'getter'
- What is the Output?



Module 7

File I/O Operations

- Selected Binary File Access Modes
- Text Files
- Files and Directories
- CSV Files
- Path for Windows
- CSV Headers
- JSON Files
- JSON Data Type
- Python PIP

Module 8

Database

- SQL Language
- Database Connection
- NoSQL Database
- Database Lab
- Sqlite3 Lab

Module 9

Web Development

- Django Tutorials
- Creating a Project
- Using PyCharms
- Boot Up your Webserver
- Browse your Website
- Create your First App
- Create urls.py in Staff App
- Modify Views.py
- Database Setup

Module 10

Introduction to Django Framework

- How to Create Django Superuser Password?
- Modify models.py
- Changing the setting.py
- Migrate the Classes to the Database
- Dealing with the Database
- Working with admin.py
- Add New App to Staff
- Views.py
- Publications Update
- REST API Model
- Change in setting.py
- Models.py
- Admin.py
- Add the Stocks from Admin App

Module 11

Socket Overview

- Introduction to TCP/IP Networking
- Network Layering
- Inter-Layer Relationships
- TCP/IP Layering Model
- TCP/IP Components
- IP Characteristics
- UDP Characteristics
- TCP Characteristics

Module 12

Client/Server Concepts

- Client/Server Concepts
- Connectionless Services
- Connection-Oriented Services
- Socket Programming-1
- Socket Programming-Telnet
- World's Simplest Web Browser
- Retrieving an Image over HTTP

Course 2

Data Analysis and Visualisation with Python Course Outline

Module 1

Introduction to Data Science with Python

- Stages of Data Science
- Why Python?
- Python Environment and Editors
- Fundamental Python Programming Techniques
- Data Cleaning and Manipulation Techniques
- Abstraction of the Series and Data Frame
- Running Basic Inferential Analyses

Module 2

Importance of Data Visualisation in Business Intelligence

- Shifting from Input to Output
- Importance of Data Visualisation
- Why do Modern Businesses Need Data Visualisation?
- Future of Data Visualisation
- How Data Visualisation is Used for Business Decision-Making?
- Data Visualisation Techniques

Module 3

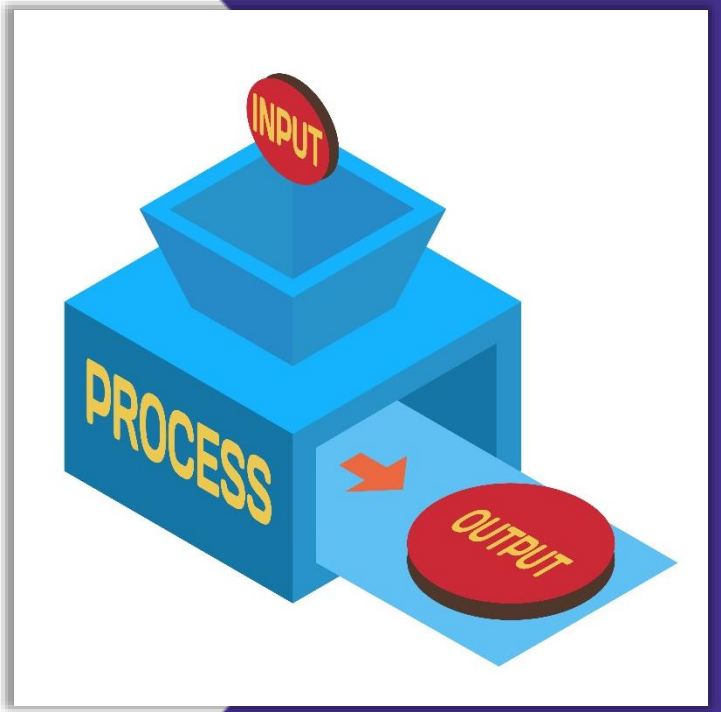
Data Collection Structures

- Lists
- Dictionaries
- Tuples
- Series
- Data Frames
- Panels

Module 4

File I/O Processing and Regular Expressions

- File I/O Processing
- Regular Expressions



Module 5

Data Gathering and Cleaning

- Cleaning Data
- Reading and Cleaning CSV Data
- Merging and Integrating Data
- Reading Data From
  - JSON Format
  - HTML Format
  - XML Format

Module 6

Data Exploring and Analysis

- Series Data Structures
- Data Frame Data Structures
- Data Analysis

Module 7

Data Visualisation

- Direct Plotting
- Seaborn Plotting System
- Matplotlib Plot

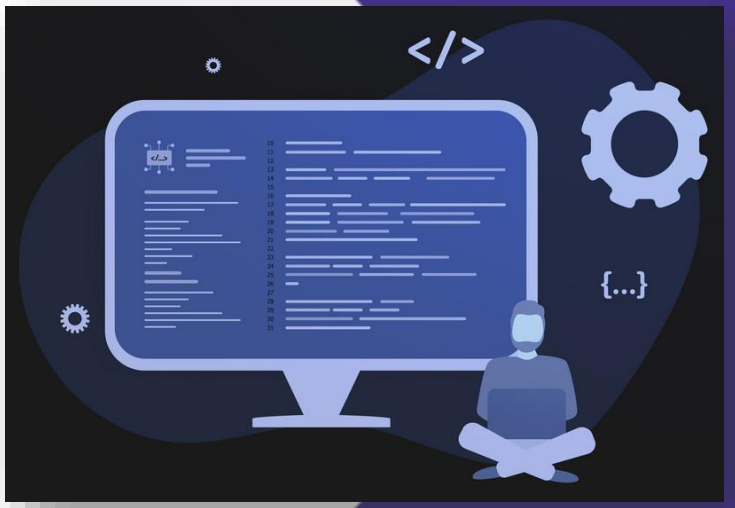
Course 3

Python with Machine Leaning Course Outline

Module 1

Introduction to Python

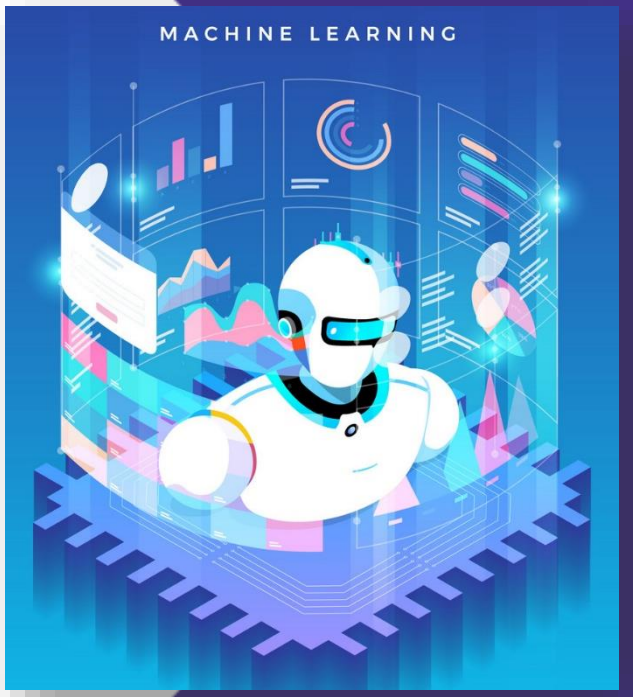
- What is Python?
- Python Syntax
- Control Flow Tools
- Defining Functions
- Modules
- Input and Output



Module 2

Basics of Machine Learning

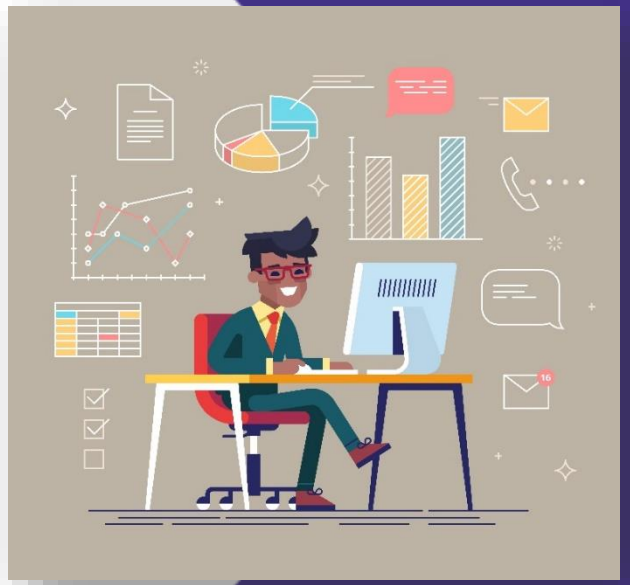
- Introduction to Machine Learning
- Benefits of Machine Learning
- Supervised Machine Learning
- Unsupervised Machine Learning
- Reinforcement Machine Learning



Module 3

Data Sets of Python

- Structured Data Sets
- Unstructured Data Sets
- How to Manage the Missing Data?
- Splitting Your Data
- Training and Testing Your Data



Module 4

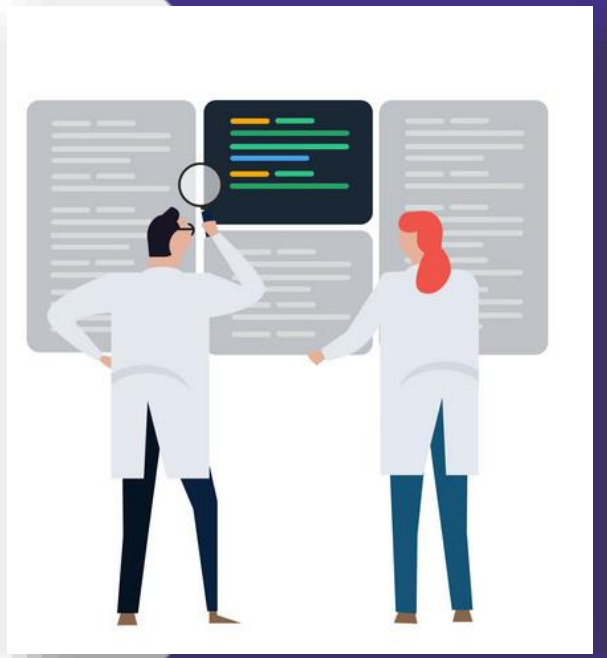
Supervised Learning with Regressions

- Linear Regression
- Cost Function
- Using Weight Training with Gradient Descent
- Polynomial Regression

Module 5

Regularisation

- Types of Fitting with Predicted Prices
- How to Detect Overfitting?
- How to Fix Overfitting?



Module 6

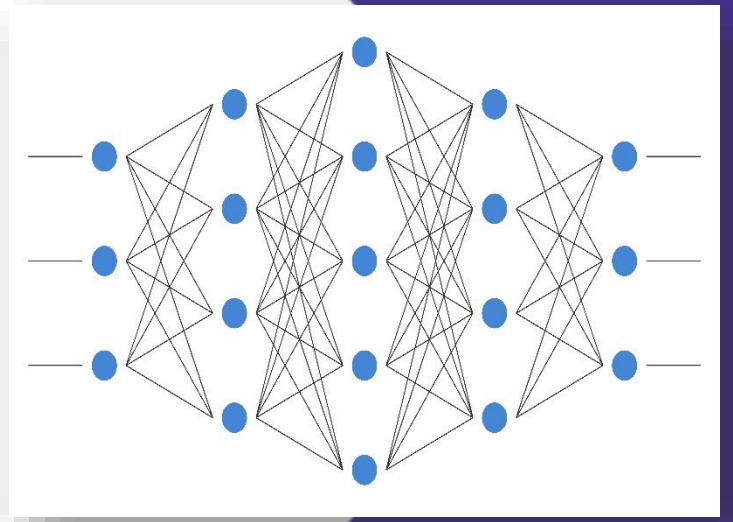
Supervised Learning with Classification

- Logistic Regression
- Multiclass Classification

Module 7

Non-linear Classification Models

- K-Nearest Neighbor
- Decision Trees and Random Forests
- Working with Support Vector Machine
- Neural Networks



Module 8

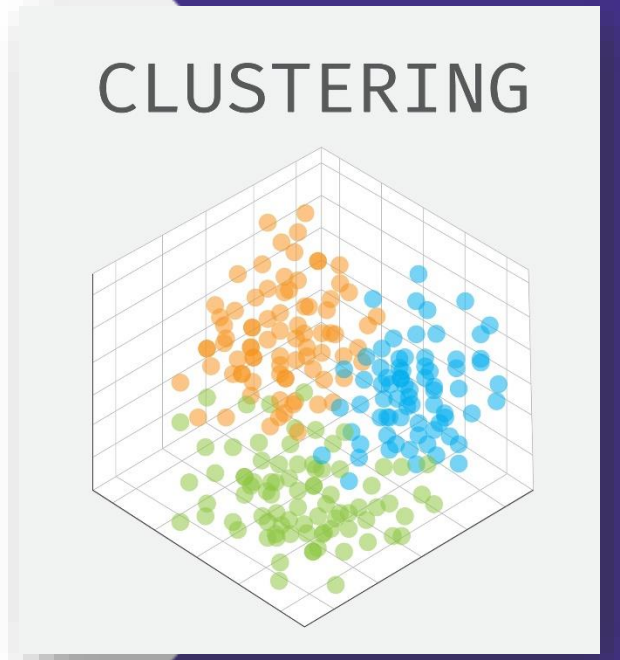
Validation and Optimisation Techniques

- Cross-Validation Techniques
- Hyperparameter Optimisation
- Grid and Random Search

Module 9

Unsupervised Machine Learning with Clustering

- K-Means Clustering
- Hierarchal Clustering
- DBSCAN



Module 10

Reduction of Dimensionality

- Principal Component Analysis
- Linear Discriminant Analysis
- Comparing PCA and LDA

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Course 4

Python Django Training Course Outline

Module 1

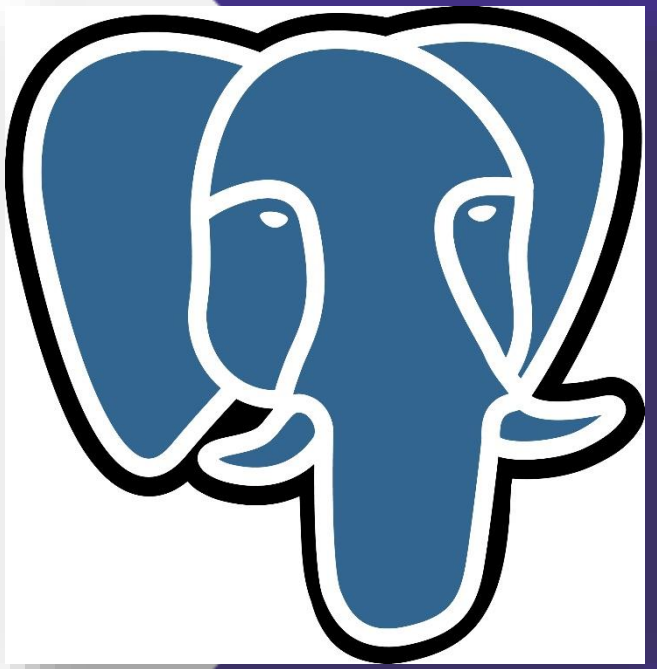
Introduction to Django

- What is Django?
- What is Python and Django?
- When Use Django?
- Why Django is the Perfect Framework for Python Websites?

Module 2

PostgreSQL

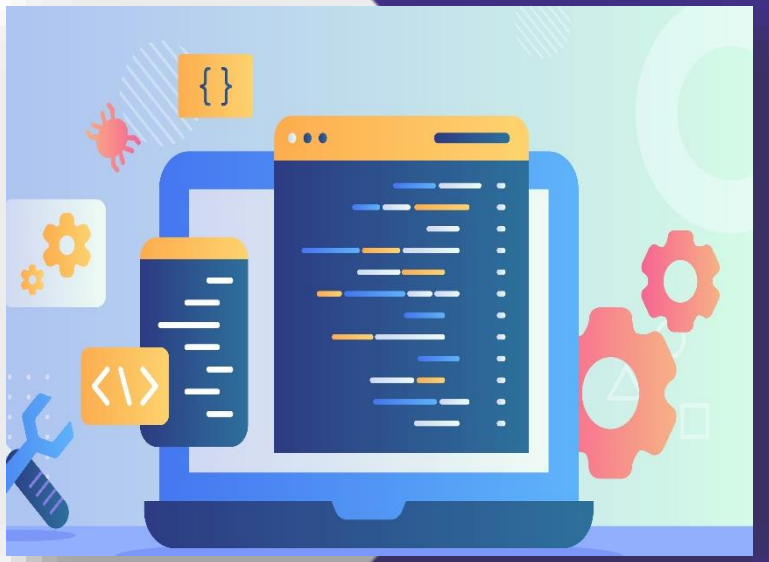
- Docker
- Detached Mode
- PostgreSQL
- Settings
- Psycopg
- New Database



Module 3

Pages App

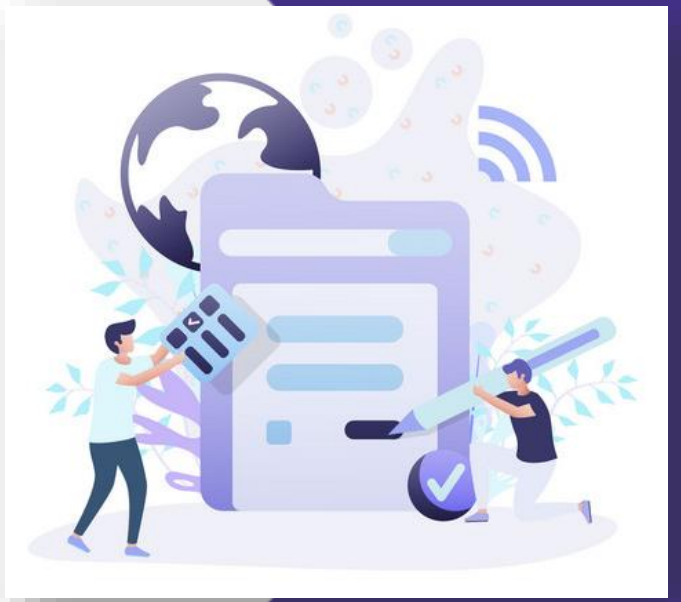
- Templates
- URLs and Views
- Tests
- Testing Templates
- Testing HTML
- Setup Method



Module 4

User Registration

- Auth App
- Auth URLs and Views
- Homepage
- Django Source Code
- Log In
- Redirects
- Log Out
- Sign Up
- Tests
- setUpTestData()



Module 5

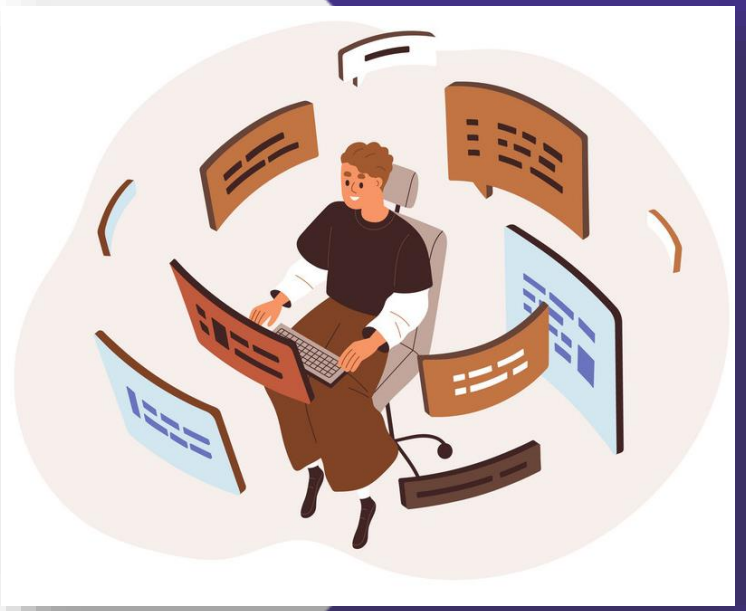
Static Assets

- staticfiles app
- STATIC_URL
- STATICFILES_DIRS
- STATIC_ROOT
- STATICFILES_FINDERS
- Static Directory
- Images
- JavaScript
- collectstatic
- Bootstrap
- About Page
- Django Crispy Forms

Module 6

Environment Variables

- .env files
- SECRET_KEY
- DEBUG
- Databases



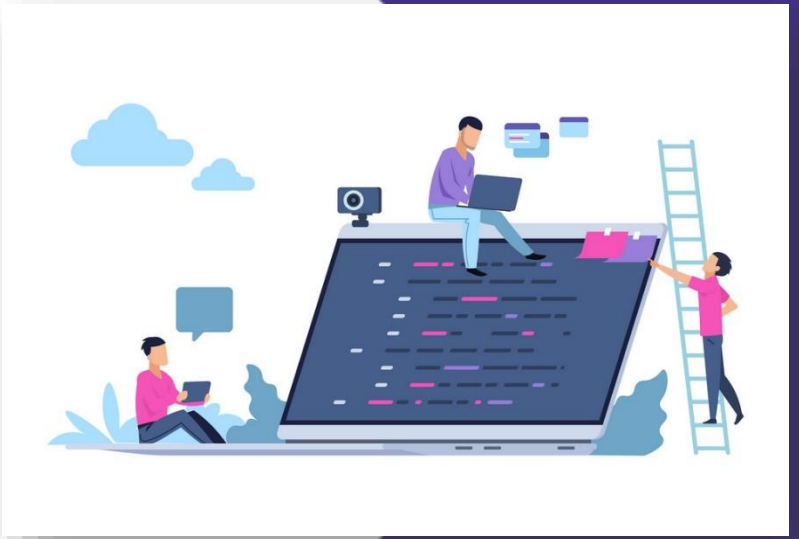
Course 5

PySpark Training Course Outline

Module 1

Introduction to PySpark

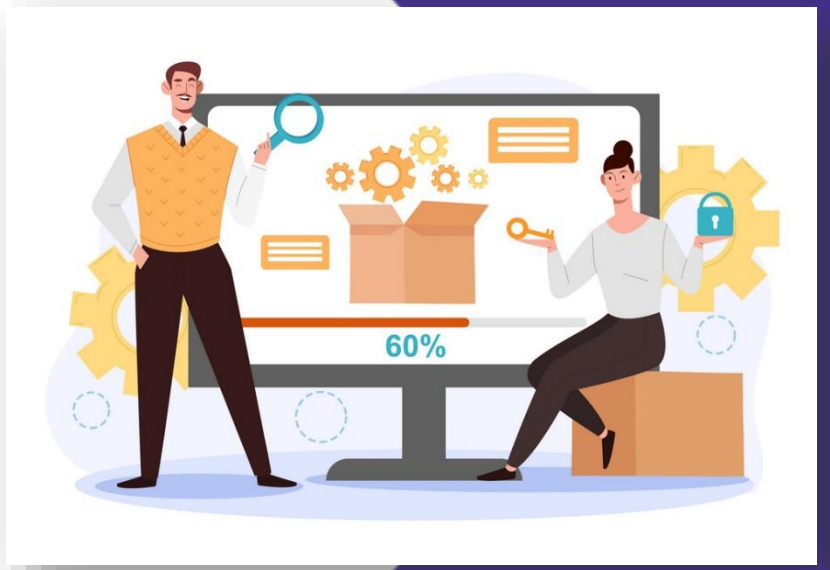
- What is PySpark?
- Environment
- Spark Dataframes
- Reading Data
- Writing Data
- Transforming Data
- MLlib
- Pandas UDFs
- Best Practices



Module 2

Installation

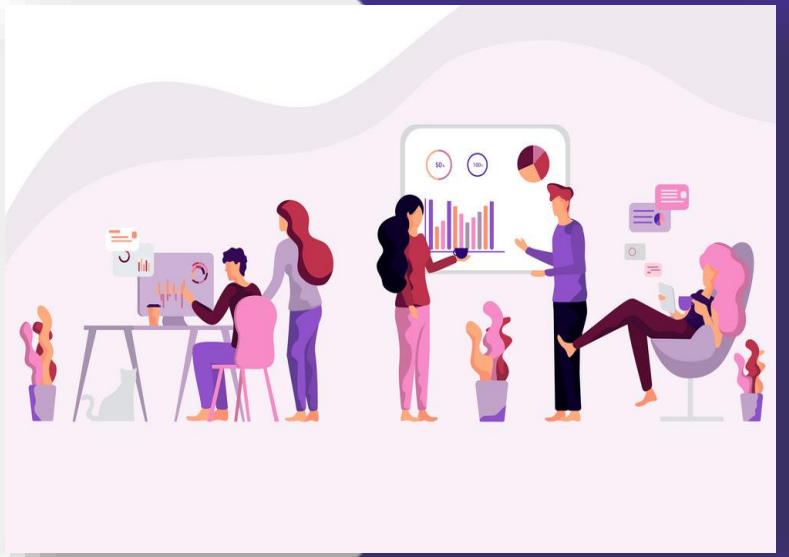
- Using PyPI
- Using Conda
- Using PySpark Native Features
- Using Virtualenv
- Using PEX
- Manual Downloading
- Installing from Source
- Dependencies



Module 3

DataFrame

- DataFrame Creation
- Viewing Data
- Selecting and Accessing Data
- Applying a Function
- Grouping Data
- Getting Data In/Out
- Working with SQL



Module 4

Setting Up a Spark Virtual Environment

- Understanding the Architecture of Data-Intensive Applications
- Understanding Spark
- Understanding Anaconda
- Setting Up the Spark Powered Environment
- Setting Up an Oracle VirtualBox with Ubuntu
- Building First App with PySpark
- Virtualising the Environment with Vagrant
- Moving to the Cloud

Module 5

Building Batch and Streaming Apps with Spark

- Architecting Data-Intensive Apps
- Connecting to Social Networks
- Analysing the Data
- Exploring the GitHub World
- Previewing App

Module 6

Learning from Data Using Spark

- Contextualising Spark MLlib in the App Architecture
- Classifying Spark MLlib Algorithms
- Spark MLlib Data Types
- Machine Learning Workflows and Data Flows
- Clustering the Twitter Dataset
- Building Machine Learning Pipelines

Course 6

Natural Language Processing (NLP) Fundamentals with Python Course Outline

Module 1

Introduction to Natural Language Processing (NLP)

- What is NLP?
- Components of NLP
- NLP and Writing Systems
- NLP Examples
- Advantages of NLP
- Disadvantages of NLP

Module 2

Overview of Python

- Features of Python
- Why Python?
- Design of NLTK
- NLTK Installation

Module 3

Text Wrangling and Cleansing

- Introduction
- Sentence Splitting
- Tokenization
- Stemming
- Lemmatisation
- Top Word Removal
- Text Mining

Module 4

POS Tagging

- Parts of Speech (POS) Tagging
- Stanford Tagger
- Diving Deep into a Tagger
- Sequential Tagger
- Brill Tagger
- Machine Learning Based Tagger

Module 5

Parsing Structure in Text

- Introduction of Parsing
- Types of Parsing
- Parser

Module 6

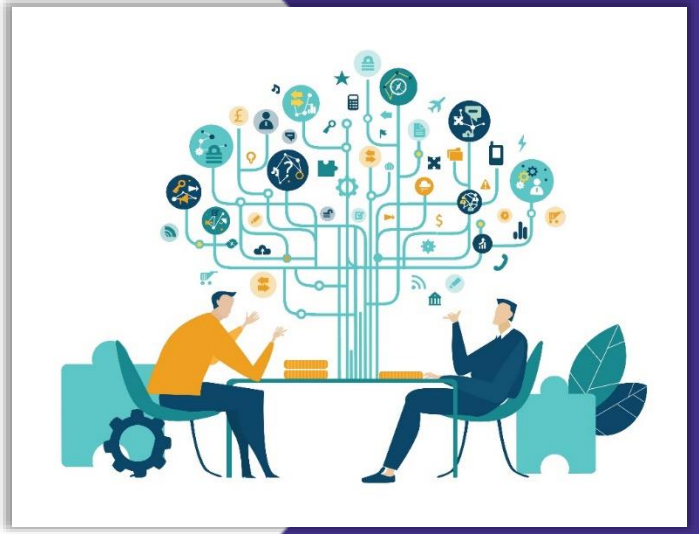
NLP Applications

- Machine Translation
- Statistical Machine Translation
- Information Retrieval
- Speech Recognition
- Text Classification
- Information Extraction
- Question Answering System
- Topic Modelling
- Language Detection
- Optical Character Recognition

Module 7

Text Classification

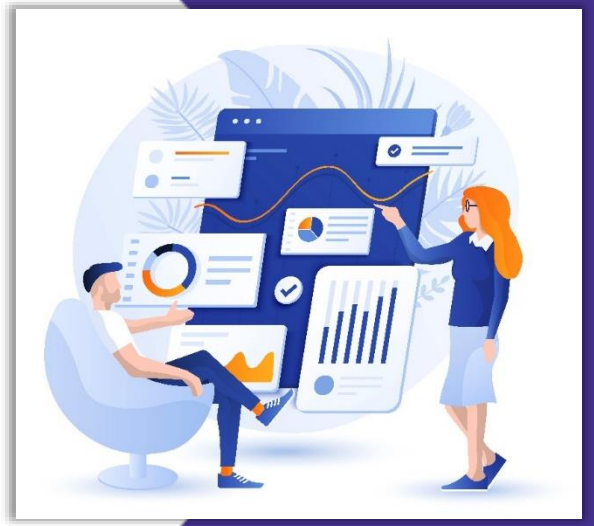
- Two Parts of Natural Language Classifier
- Sampling
- Naive Bayes
- Decision Tree
- Stochastic Gradient Descent
- Logistic Regression
- Support Vector Machines



Module 8

Using NLTK with Other Python Libraries

- NumPy
- SciPy
- Pandas
- Matplotlib



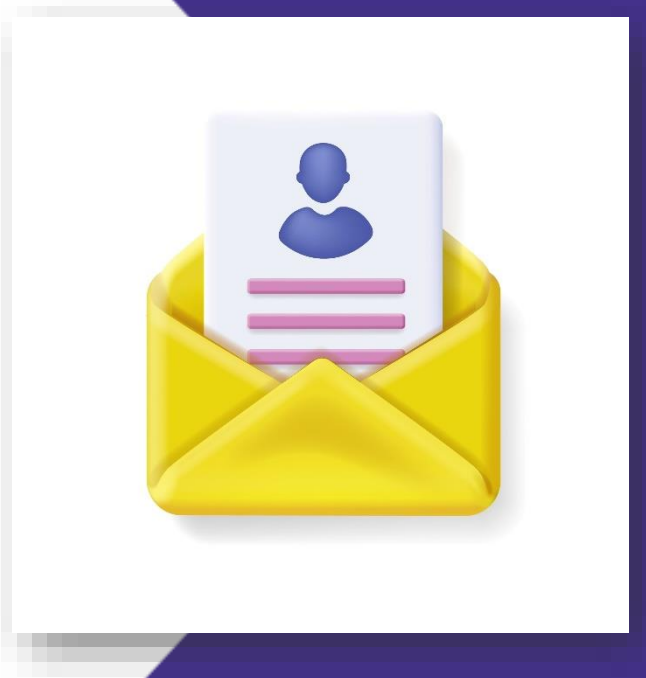
Course 7

OpenCV With Python Training Course Outline

Module 1

Setting Up OpenCV

- Understanding Python
- Introduction to the OpenCV Library
- Installing OpenCV, Python, and Other Packages
- Testing the Installation
- Jupyter Notebook
- OpenCV and Python Project Structure



Module 2

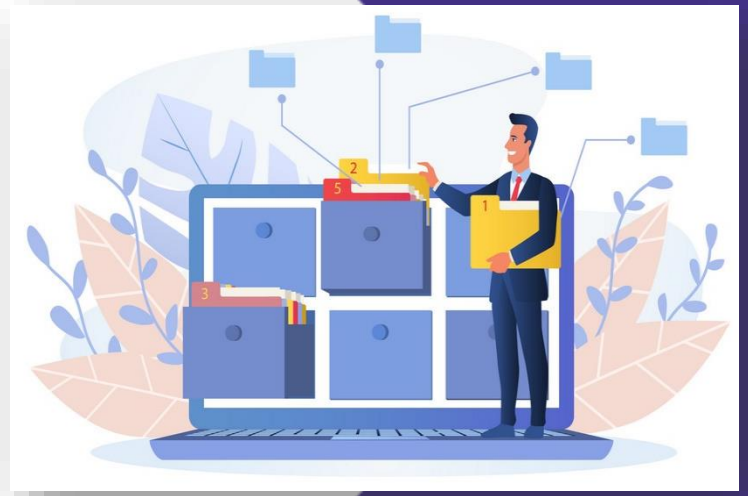
Image Basics in OpenCV

- Theoretical Introduction to Image
- Pixels, Colours, Channels, Images, and Colour Spaces
- Coordinate System in OpenCV
- Accessing and Manipulating Pixels in OpenCV
- BGR Order in OpenCV

Module 3

Handling Files and Images

- Introduction to Handling Files and Images
- Reading and Writing Images
- Reading Camera Frames and Video Files
- Writing a Video File
- Playing with Video Capture Properties



Module 4

Techniques

- Image Processing Techniques
- Thresholding Techniques

Module 5

Contour Detection, Filtering, and Drawing

- Introduction to Contours
- Compressing Contours
- Image Moments
- Filtering Contours
- Recognising and Matching Contours

Module 6

Machine Learning with OpenCV

- Introduction to Machine Learning
- K-Means Clustering
- K-Nearest Neighbour
- Support Vector Machine

Module 7

Face Detection, Tracking, and Recognition

- Face Processing and Detection
- Detecting Facial Landmarks
- Face Tracking and Recognition

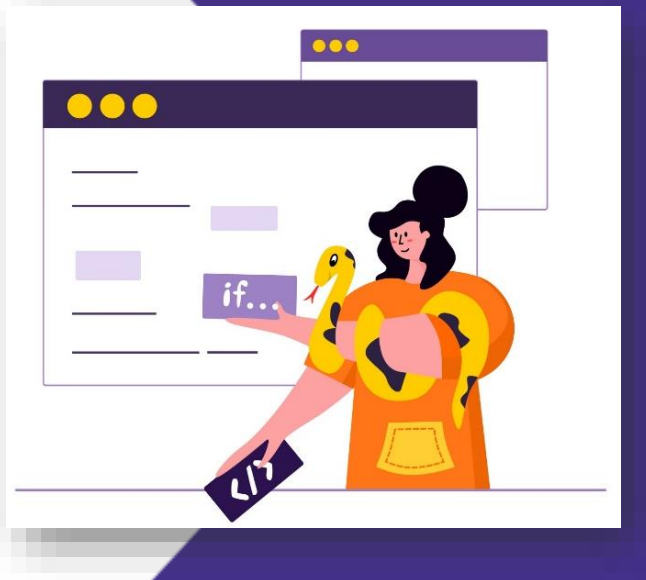
Course 8

Python Game Development Training With Pygame Course Outline

Module 1

Introduction to Python

- Python Overview
- Application of Python
- Installation
- Variables
- Data Types
- Lists and Loops
- Conditional Statements
- Tuples
- Object-Oriented Concepts



Module 2

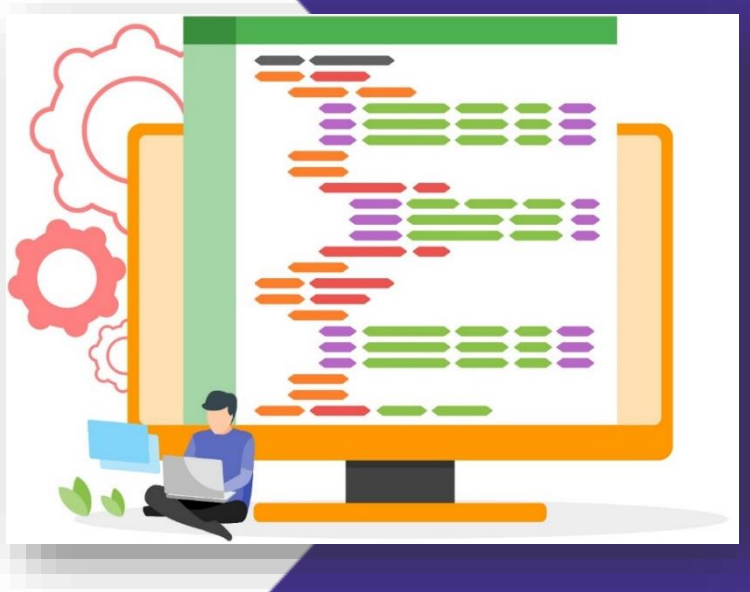
Introduction to Pygame

- Installing Pygame
- Events in Pygame
- Display
- Font Module

Module 3

Creating Visuals

- Working with Pixel
- Working with Colour
- Images in Pygame
- Drawing Objects



Module 4

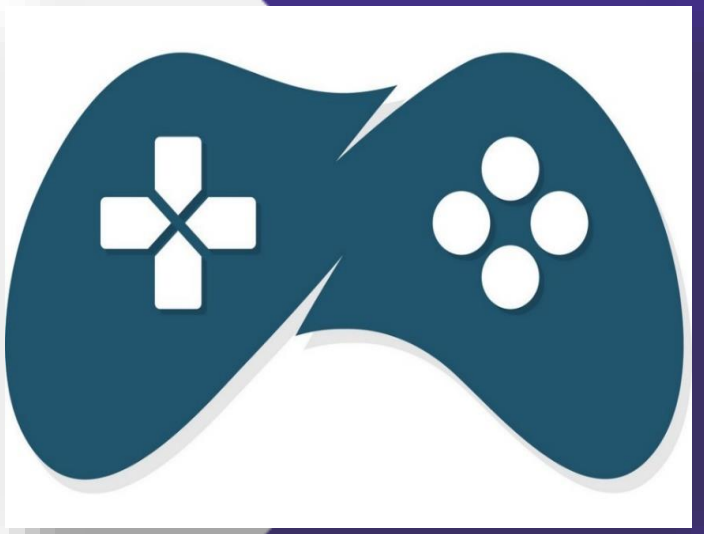
Moving Objects

- Frame Rate
- Moving in a Straight Line
- Exploring Vectors

Module 5

User Inputs

- Controlling the Game
- Keyboard Control
- Mouse Control
- Moving in a Straight Line
- Joystick Control



Module 6

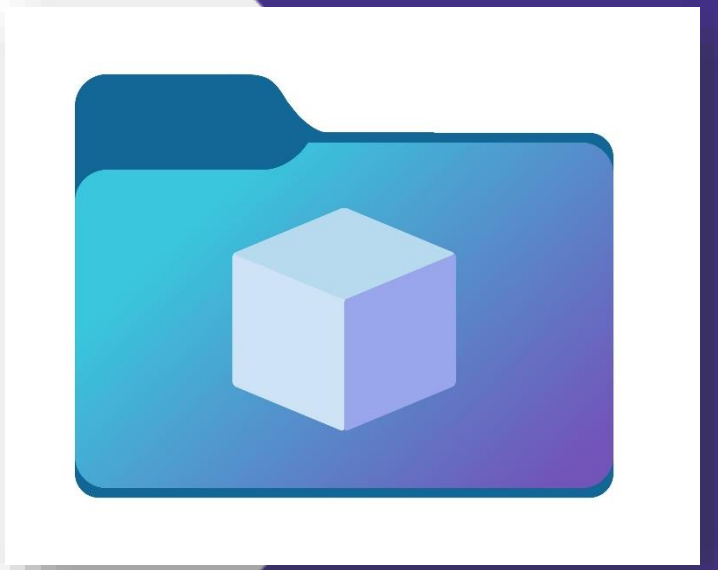
Third Dimension

- 3D Space
- 3D Vectors
- Time-Based Movement in 3D
- Projecting 3D Points
- What is a Matrix?
- Using the Matrix Class

Module 7

Packaging Your Game

- Creating Windows Packages
- Creating Packages for Linux
- Creating Packages for the Mac



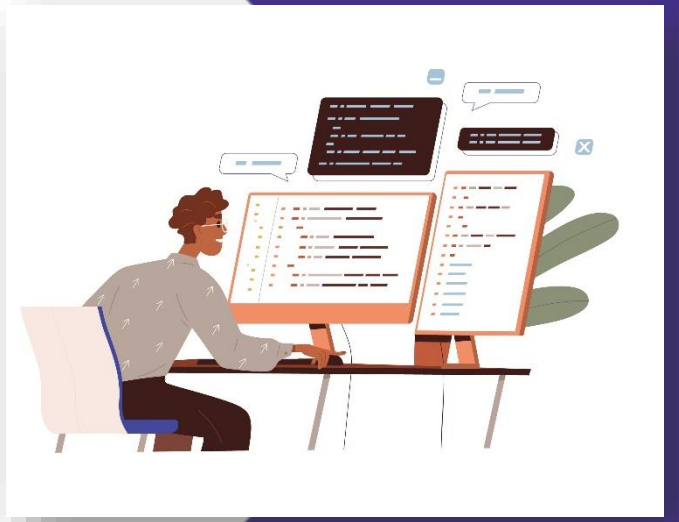
Course 9

Python Data Science Training Course Outline

Module 1

Introduction of Python

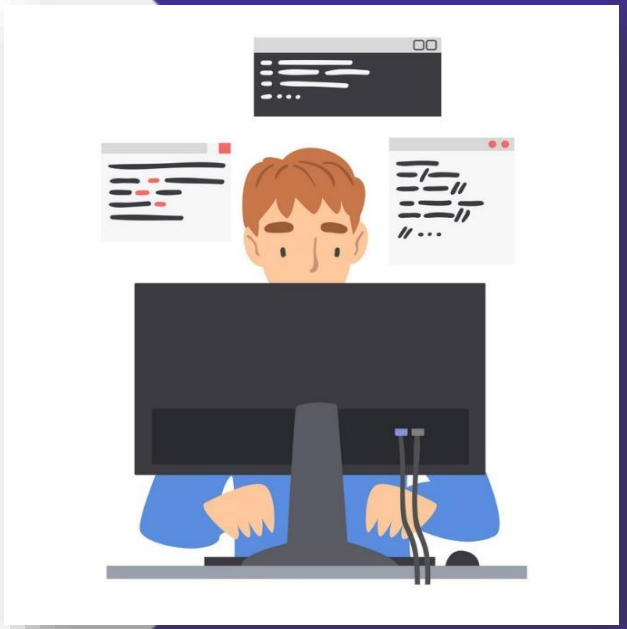
- What is Python?
- What can be Done by Using Python Programming Language?
- Why Python?



Module 2

Working with IPython

- Launching IPython Shell and Jupyter Notebook
- Keyboard Shortcuts in the IPython Shell
- Special Commands of Python
- IPython's In and Out Objects
- IPython and Shell Commands
- Errors and Debugging
- Profiling and Timing Code



Module 3

Introduction to NumPy

- Understand Data Types in Python
- NumPy Arrays
- Universal Functions
- Aggregations: Min, Max, and More
- Computation on Arrays: Broadcasting
- Comparison, Boolean Logic, and Masks
- Fancy Indexing
- Sorting Arrays
- NumPy's Structured Array

Module 4

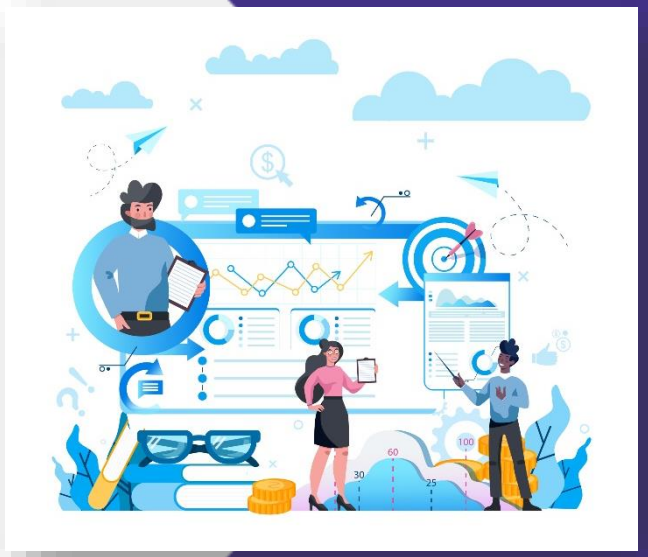
Working with Pandas

- Installing and Using Pandas
- Pandas Objects
- Data Indexing and Selection
- Operating on Data in Pandas
- Handling Missing Data
- Hierarchical Indexing
- Concat and Append
- Merge and Join
- Aggregations and Grouping
- Pivot Tables
- Vectorised String Operations
- Working with Time Series
- eval() and query()

Module 5

Visualisation with Matplotlib

- Overview of Matplotlibs
- Object-Oriented Interface
- Two Interfaces
- Simple Line Plots and Scatter Plots
- Visualising Errors
- Contour Plots
- Histograms, Binnings, and Density
- Customising Plot Legends
- Customising Colorbars
- Multiple Subplots
- Text Annotation
- Three-Dimensional Plotting in Matplotlib
- Visualisation with Seaborn



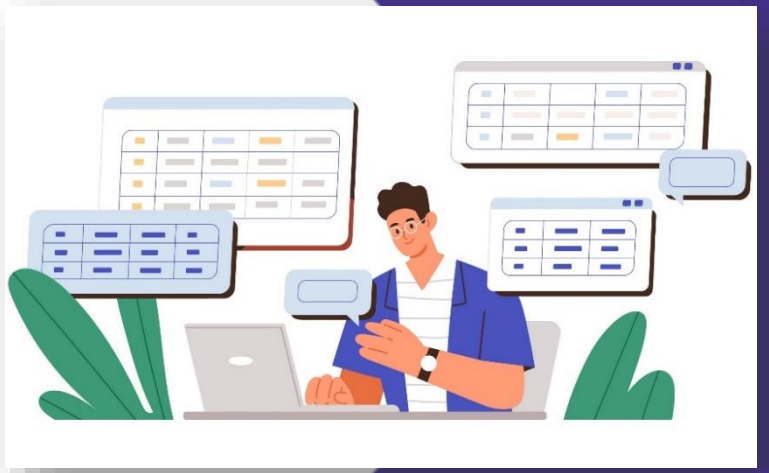
Course 10

Advanced SQL Course Outline

Module 1

Table Structure

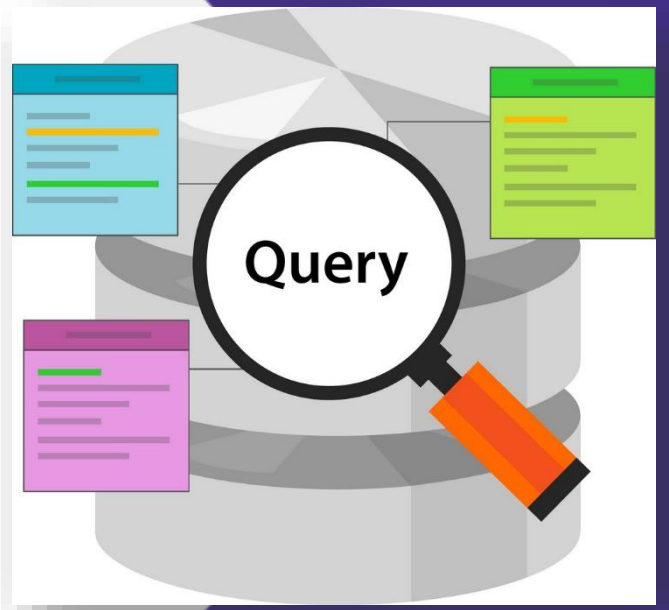
- Objects Under the Customer Orders Database
- Creating a Table from the Object Explorer
- Customer Table with Customer ID as Primary Key
- Click Refresh Under Tables
- Supplier, Order, and Product Table
- Order_Details Table
- Data for CUSTOMER Table
- Data for SUPPLIER Table
- Data for Product Table
- Data for ORDERS Table
- Data for Order_Details



Module 2

Subqueries

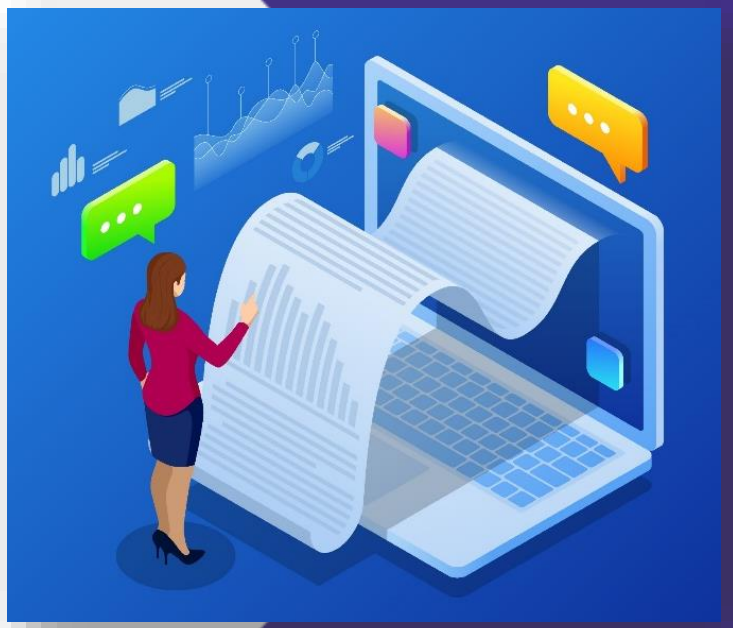
- Overview
- Using ALL, ANY, and IN
- Correlated Subqueries
- Using EXISTS



Module 3

DCL and TCL

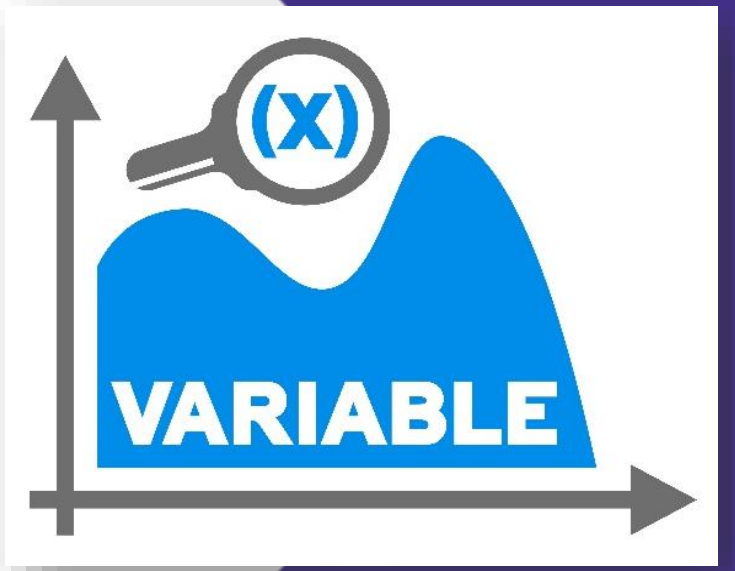
- Overview of DCL
- Commands
- Privileges and Roles
- Basic Transactions
- Rolling Back



Module 4

Variables

- Declaring Variables
- SET Versus SELECT
- Tricks with Variables and Rowsets
- Global Variables



Module 5

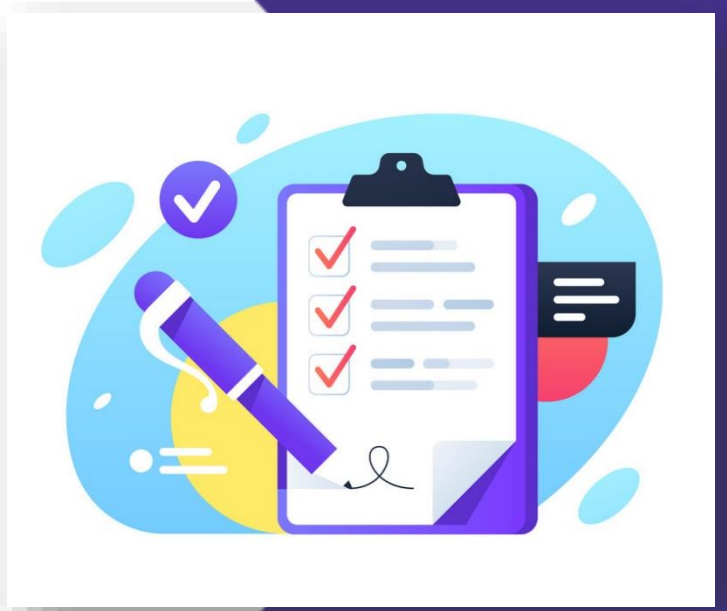
Testing Conditions and Looping

- IF/ELSE Statement
- Using CASE Where Possible
- Syntax of WHILE
- Sys. Objects
- Dropping Objects

Module 6

Rules and Stored Procedure Basics

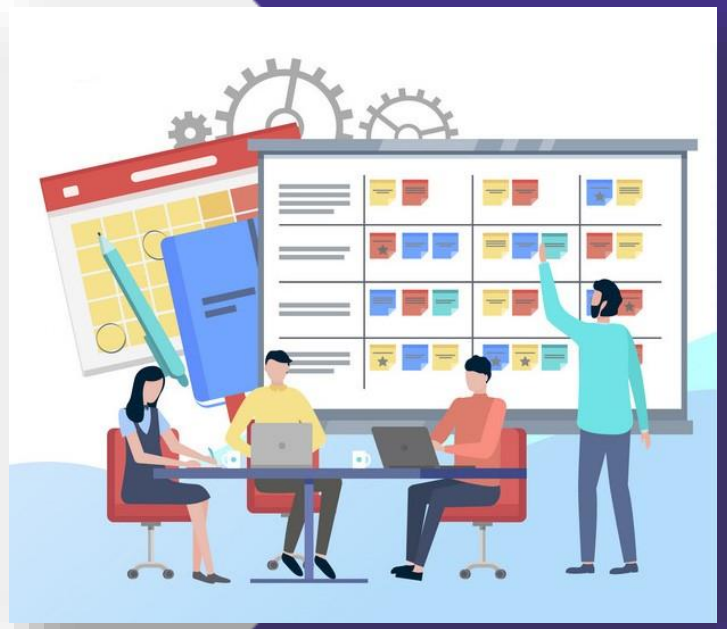
- Creating a Rule with a List and Range
- Creating Stored Procedures
- Three Ways to Execute
- Stored Procedures with Parameters
- Pros and Cons of Stored Procedures
- System Stored Procedures



Module 7

Parameters and Return Values

- Default Values
- Output Parameters
- Using RETURN



Module 8

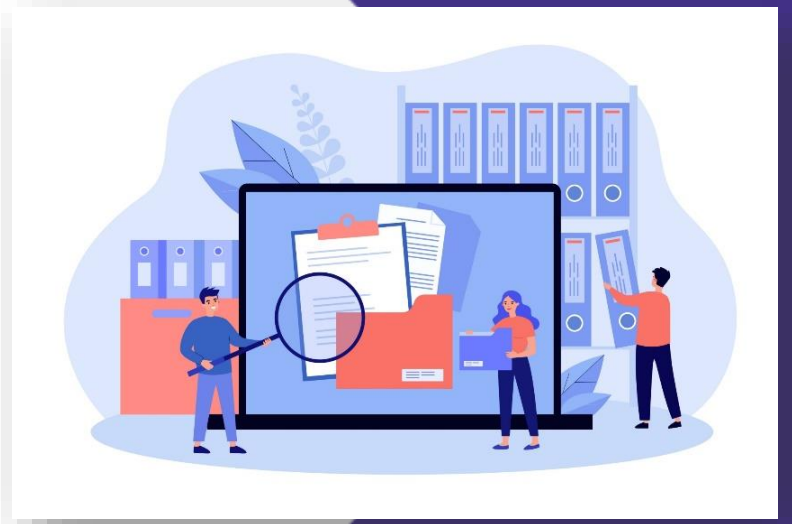
Cursors

- Overview
- Life Cycle of Cursor
- Type of Cursor
- Forward Only Cursor
- Displaying All Records Using a Cursor
- Scroll Cursor
- Syntax of Fetching Rows

Module 9

Triggers and Avoiding Scalar Functions

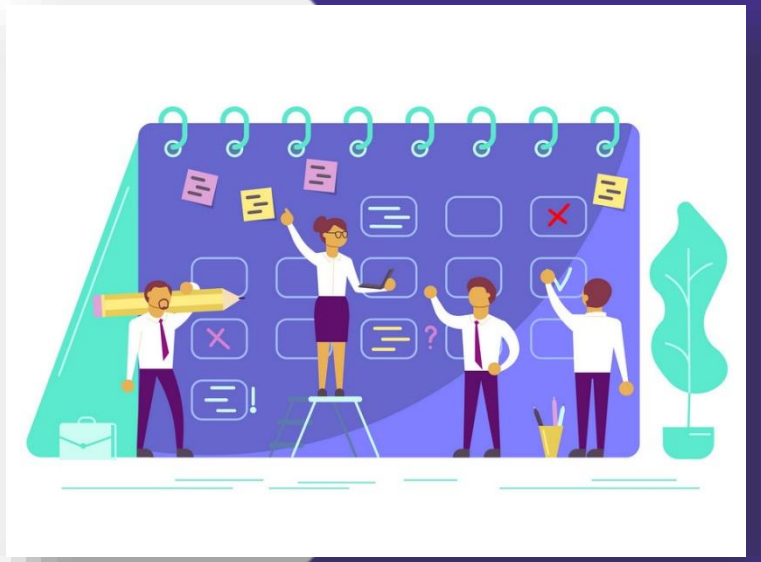
- Triggers Overview
- Difference Between Stored Procedure and Triggers
- Types of Triggers
- Scalar Functions
- Advantages and Disadvantages



Module 10

Temporary Tables and Table Variables

- Using Temporary Tables
- Creating Table Variables
- Pros and Cons of Each Approach



Module 11

Table Valued Functions

- In-Line Table-Valued Functions
- Multi-Statement Table-Valued Functions
- Limitations of User-Defined Functions

Module 12

Derived Tables and CTEs

- Using Derived Tables
- Common Table Expressions (CTEs)

Module 13

Error-Handling and Debugging

- Using TRY/CATCH
- System Error Functions
- Custom Error Messages
- Obsolete @@Error Function
- SQL Server Debugger

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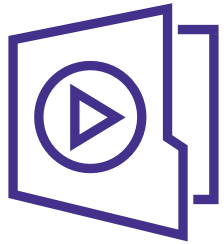

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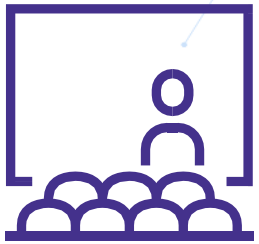

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