

Adv. Data Science & Analytics Course

quickxpert

About QuickXpert Infotech

Best institute for IT training and placements for classroom and online training for students and corporates. We are an ISO certified institute and in the industry since 2014. Our strong training and placement team have helped thousands of students build their career.

Courses - JAVA, Dot Net, Software Testing, Web Development, Full Stack Development, MERN, MEAN, Oracle, Digital Marketing, Python, Data Analytics, Data Science & A.I., Cyber Security, Salesforce, Service Now, Tableau, Power BI, Excel, React, Angular etc.

Live Projects - MarriageKing, theVibrantBirdie, CRM etc

Corporate Trainings - GeBBS Healthcare, NVest Solutions, Infogix, PDG Software, GMV India etc.

Syllabus mentioned below.

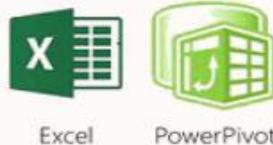
Tools You Learn



quickxpert



Time Series



& more ...

MYSQL

Learn both MySQL & Adv. MySQL

Basics & Installations

- Introduction to Database
- Definitions
- MySQL Or Oracle Server (SQL part is same)

DDL - Data Definition Language

- Tables - Create, Alter, Drop, Auto Increment
- Constraints - Not Null, Primary Key, Unique Key, Foreign Key
- Index - Why required, Create, Drop

DML - Data Manipulation Language

- Insert, Update, Delete & Truncate

Transactions

- Commit & Rollback

DQL - Data Query Language (Select)

- Filters
 - Operators - <, <=, >, >=, =, !=
 - BETWEEN

- IN
- LIK
- NOT
- NULL
- AND, OR, NOT
- Multi conditions filtering
- DISTINCT
- Limit, offset
- **Sorting**
 - Ascending Order
 - Descending Order
 - Multi Column Sorting
- **Functions**
 - Data, number, characters, null values etc.
 - Case
- **Groups**
 - Grouping functions - AVG, MIN, MAX, COUNT, DISTINCT COUNT
 - Grouping Filters - HAVING
- **Joins**
 - Cartesian Product
 - Equi and Non-Equi Joins
 - Left Outer Join
 - Right Outer Join
 - Full Outer Join
 - Self Join

- SET Operators
 - Union, Union All, Intersect, Minus
- Subquery
 - Single Valued
 - Multi Valued
- Views & Inline Views
- Analytic (Window) Functions
 - Top N Analysis
 - Over() with summary functions
 - Partition By Queries
 - ROW_NUMBER()
 - RANK()
 - DENSE_RANK()
- Procedures
 - Programming basics - if..else, for loop
 - Procedures - create, drop
- Functions
 - create, drop
- Triggers
 - create, drop
- Project

Python

Introduction

- What is Python? Features & uses
- Python installation & IDE setup (VS Code, PyCharm, Jupyter)
- Running Python programs (script mode vs interactive mode)
- Writing First program

Basics

- Variables & Data Types (int, float, str, bool)
- Input/Output functions (print(), input())
- Comments & indentation
- Type conversion & type() function

Operators

- Arithmetic operators (+, -, *, /, //, %, **)
- Comparison operators (==, !=, <, >, <=, >=)
- Logical operators (and, or, not)
- Assignment operators (+=, -=, etc.)
- Identity operators (is, is not)
- Membership operators (in, not in)

Control Flow

- if, elif, else statements
- Nested conditions

- for and while loops
- break, continue, pass

Data Structures

- Strings → indexing, slicing, methods
- Lists → create, access, update, iterate, list methods
- Tuples → immutable collections
- Sets → unique values, set operations (union, intersection)
- Dictionaries → key-value pairs, methods

Functions

- Defining & calling functions
- Function arguments (positional, keyword, default, variable-length *args, **kwargs)
- Return values
- Lambda (anonymous functions)
- Scope (local vs global variables)

Modules & Packages

- Importing built-in modules (math, random, datetime, os)\
- Creating your own modules
- Installing external libraries with pip

File Handling

- Opening & closing files

- Reading & writing (read(), write(), with open)
- Working with CSV and JSON files

Exception Handling

- try, except blocks
- finally, else in exceptions
- Raising exceptions (raise)
- Custom exceptions

Object-Oriented Programming (OOP)

- Classes & objects
- Constructors (__init__)
- Instance & class variables
- Methods (instance, class, static)
- Inheritance (single, multiple, multilevel)
- Method overriding
- Encapsulation & Abstraction
- Polymorphism
- Special methods (__str__, __len__, etc.)

Advanced Python Concepts

- Iterators & Generators (iter(), next(), yield)
- Decorators (function decorators, @staticmethod, @classmethod)
- Regular Expressions (re module)
- Project

Python Analytics

Working with APIs

- Sending HTTP requests with requests
- JSON handling

Database (MySQL) Connectivity

- MySQL Installation
- Basic CRUD Operations (create, read, insert, update, delete)
- MySQL with connectors

Python for Automation

- Automating tasks (file renaming, web scraping with BeautifulSoup)
- Sending emails with Python (smtplib)
- Working with Excel (openpyxl, pandas)

Python for Data Science

- NumPy → arrays, vectorized operations
- Pandas → DataFrames, Series, CSV/Excel handling

Python for Data Visualization

- Installing Matplotlib (pip install matplotlib)
- Basic Plots: Line chart, Bar chart, Pie chart
- Statistical Plots: Histogram, Scatter plot, Box plot

Machine Learning

Statistics & Probability

- Mean, Median, Mode, Variance, Standard Deviation
- Skewness, Kurtosis, Correlation, Covariance
- Probability Distributions: Normal, Binomial, Poisson
- Sampling, Central Limit Theorem
- Hypothesis Testing: t-test, z-test, ANOVA, chi-square
- Confidence Intervals, p-values, Type I & II errors
- Note – Few Statistics modules conducted as and when required

Exploratory Data Analysis (EDA)

- Data Preprocessing & EDA Overview
- Handling missing values, outliers, duplicates
- Encoding (One-hot, Label), Scaling (Standard, MinMax)
- Feature engineering, selection techniques
- EDA: Univariate, Bivariate, Multivariate analysis
- Visuals: Heatmaps, Pairplots, Boxplots, Violin plots

Supervised Learning

- Linear & Logistic Regression
- Decision Tree, Random Forest, KNN
- SVM with kernel functions
- Naive Bayes, AdaBoost, XGBoost
- Project 1: House Price Prediction
- Project 2: Email Spam Detection

Unsupervised Learning

- K-Means, DBSCAN, Hierarchical Clustering
- Dimensionality Reduction: PCA
- Project 3: Employee Role Segmentation

Model Evaluation & Optimization

- Metrics: Accuracy, Precision, Recall, F1, AUC, R2, RMSE
- Cross Validation, Stratified K-Fold
- Hyperparameter tuning: GridSearchCV, RandomizedSearchCV
- Imbalanced Data Handling: SMOTE, NearMiss

Time Series Forecasting

- Time Series Analysis Basics
- Trend, Seasonality, Noise, Stationarity
- ADF Test, ARIMA, SARIMA
- Facebook Prophet, Exponential Smoothing
- Project 4: Sales Forecasting

Natural Language Processing (NLP)

- NLP Basics
- Text preprocessing: Tokenization, Lemmatization, Stopwords
- BoW, TF-IDF, Word2Vec
- Text Classification, Sentiment Analysis
- Project 5: Sentiment Analysis of Product Reviews

A.I. & Deep Learning

Introduction to AI & Neural Networks

- Deep Learning vs Machine Learning
- Tech Advancement
- All about Artificial Neural Networks (ANN)
- Understand How Deep Neural Network Works?
- Different variants of Gradient Descent
- Stochastic Gradient Descent vs Adam vs Others
- Hyper parameter Tuning
- Batch Size
- Learning Rate
- Momentum

Deep Learning in Python

- Deep Learning packages in python
- Google TensorFlow Framework
- Model Building with default TFLearn API
- Keras Vs TFLearn Vs Pycharm APIs
- Model Building with Keras API Wrapper
- Activations | Optimizers | Losses
- Validation | Evaluation Metrics | Keras Backend
- Callbacks - Early Stopping, TensorBoard

Artificial Neural Networks (ANN)

- Perceptron, Multilayer Perceptron
- Forward & Backward Propagation
- Activation, Loss functions, Optimizers
- Overfitting, Regularization, Batch Normalization
- Project 6: Iris Flower Classification using ANN

Computer Vision (CNNs for Image Processing)

- Convolution, Pooling, Padding
- Transfer Learning (VGG, ResNet)
- R-CNN, Faster R-CNN
- Project 7: Handwritten Digit Recognition

RNNs & LSTMs

- RNN, LSTM, GRU, Bidirectional RNN
- Sequence Modeling, Time Series, Text Generation
- Project 8: Next Word Prediction using RNN & LSTM

Transformers & BERT (add on)

- Attention Mechanism, Transformer Architecture
- Using Pre-trained Models (BERT, RoBERTa)
- Embedding generation & fine-tuning
- Project 9: Sentiment Analysis using BERT (Transformers)

Generative AI, LLMs (Large Language Models) & OpenAI (add on)

- GenAI
 - What is GenAI? Prompt Engineering
 - Use cases: Q&A, Summarization, Image Generation
 - Ethical concerns & safety
- LLM Apps with OpenAI & LangChain
 - Using ollama
 - LangChain Pipelines, FAISS, ChromaDB
 - Chat with PDF, CSV, Excel
- Project 10: Flow Stack Machine Learning Project

Deployment & MLOps (add on)

- Web Deployment: Streamlit or Flask
- Create AWS Instance
- Model Deployment on AWS
- Note - this module will be mostly online as trainers are rare.

Please Note – projects mentioned can be changed and similar projects to be taken.

Power BI with A.I. & Power Automate

Introduction

- What is Power BI and Why Power BI
- Installing Power BI Desktop
- Exploring the Power BI Workflow
- Adjusting the settings of the Power BI Desktop
- Comparison of Power BI vs Other Reporting Tools

Data Transformation

- Connecting to different sources
- Connecting to multiple sources
- Different connecting Options (DirectQuery vs Import Data Vs Live Connection)
- Shaping and transforming data with Power Query
- Editing, Merging, Appending queries etc

Advance Importing techniques without coding

Data cleaning & Advance data cleaning

Data Modeling

- Introduction to Modeling
- Building Relational Models(Setup and Manage Relationships)
- Creating table relationships

- Understanding the filter flow
- Cardinality and Cross filtering

DAX

- Understanding Dax Syntax
- Calculated Columns vs Measures
- Common Dax functions and formulae
- Understanding the evaluation context in DAX

Data Visualization

- Creating Visualizations
- Color & Conditional Formatting
- Setting Sort Order
- Scatter & Bubble Charts & Play Axis
- Tooltips
- Slicers, Timeline Slicers & Sync Slicers
- Cross Filtering and Highlighting
- Visual, Page and Report Level Filters
- Drill Down/Up
- Hierarchies
- Constant Lines
- Tables, Matrices & Table Conditional Formatting
- KPI's, Cards & Gauges
- Map Visualizations
- Custom Visuals

- Managing and Arranging
- Drillthrough
- Custom Report Themes
- Grouping and Binning
- Bookmarks & Buttons

Power BI Service

- Introduction & Quick Tour
- Connecting to Data from Power BI service
- Building Blocks of Power BI Service
- Sharing and Collaboration Tools
 - Sharing and Collaboration Options Overview
 - Publish from Power BI Desktop
 - Publish Reports to Web
 - Printing and Exporting from Power BI Service
 - Sharing Reports & Dashboards
- Refreshing Datasets
 - What is refreshing?
 - Implementation

A.I. in Power BI

Advance Report techniques

Power Automate (Latest)

- Introduction
- installation
- Types of flows
- Actions
- Copy multiple excel, pdf files from one folder
- Merge PDF files together, Rename etc.
- Extract phones name and price from amazon

Best Practices

Project

Tableau

Introduction

- Architecture
- Data Model
- Data Connection with single data sources
- Data Joins
- Working with multiple data sources
- Data Blending
- Difference between joining and blending data

Tableau Interface

- Measures and dimension
- Shelves
- Show me
- Data Types
- Default Properties
- Marks Card
- Page Shelf
- Saving and sharing your work-overview
- Difference between .twb and .twbx
- Discrete vs Continuous

Date Aggregations and Date parts

- Cross tab
- Totals & Subtotals

Chart Types

- Bar Charts & Stacked Bars
- Pie Chart
- Line Graph with Date
- Line Graph without Date
- Area charts
- Tree Map
- Word Cloud
- Packed Bubble
- Box & Whiskers Plot
- Scatter Plots
- Highlight tables
- Heat maps

Data Visualization

- Geographical fields
- Map options

Run Time Columns

- Calculated Fields
- String Calculation
- Data Calculation
- Logical Calculation
- Numeric Calculation
- Parameters
- Table Calculations
- Level of detail

Data Formatting

- Legends
- Highlights
- Labelling
- Number Formats
- Alignment

Advanced Functionalities

- Sorting & Groups
- Sets
- Hierarchy
- Reference and Trend Lines
- Edit Axis
- Bins

Filters

- Dimension Filter
- Measure Filter
- Filter - Display Option
- Context Filters
- Relevant Filters
- Sets in filters
- Conditional Filters

Advanced Charts

- Pareto
- Waterfall
- Funnel
- Waffel Chart

Dashboards

- Dashboard Objects & Actions
- URL
- Highlight
- Filter
- Advanced Interactivity
- Publish to Web

Predictive Analysis

- Forecasting
- Clusters

Story

Report design and exporting

Best practices

Project

Excel Analytics

Introduction

- Introduction.
- Office 365 Installation and Office Live.

Excel Interface

- Understand the Excel interface.
- Learn basic navigation and data entry.
- Workbook vs. Worksheet
- Ribbon, Tabs, and Menus
- Cells, Rows, Columns
- Name Box and Formula Bar
- Using the Go To command

Data Entry and Basic Formatting

- Entering text, numbers, and dates
- Editing cell contents
- Basic formatting (font, size, color, cell alignment)

Saving and Managing Workbooks

- Saving, opening, and closing workbooks
- Save As options (different formats)

Summary Functions

- SUM, AVERAGE, MIN, MAX, SUMIF, COUNTIF, AVERAGEIF, SUMIFS, COUNTIFS, AVERAGEIFS
- Using AutoSum

Cell Referencing

- Relative vs. Absolute References
- Mixed References

Sorting and Filtering Data

- Sorting by one or multiple columns
- Applying filters to display specific data

Tables

- Creating and formatting tables
- Table styles and features (Total Row, Header Row)

Data Validation

- Creating drop-down lists
- Setting data entry rules
- Conditional formatting using ifs function, greater than, lower than and equal between, colors, color scales, data bars & Icon sets

Advanced formulas and functions

- Logical Functions - IF, AND, OR, NOT
- Lookup Functions - VLOOKUP, VLOOKUP WITH MATCH FUNCTION, VLOOKUP WITH COLUMN & ROW FUNCTION, VLOOKUP WITH SEQUENCE FUNCTION, VLOOKUP WITH CURLY PARANTHESIS FUNCTION, VLOOKUP WITH SUMIF, SUMIFS, COUNTIF & COUNTIFS FUNCTIONS, VLOOKUP WITH MATCH FUNCTION, INDEX & MATCH, XLOOKUP, XLOOKUP WITH CONCATENATE FUNCTIONS
- Text Functions - CONCATENATE, LEFT, RIGHT, MID, LEN
- Date and Time Functions - TODAY, NOW, DATE, TIME, YEAR, MONTH, DAY, EOMONTH
- Office 365 function - Transpose, Textjoin, Sequence, Filter, Xlookup
- Vstack & Hstack
- Aggregate and many more
- Analyze data using built-in Excel tools

PivotTables

- What is a PivotTable?
- Creating PivotTable
 - Preparing your data
 - Inserting a PivotTable from various data sources
 - Understanding PivotTable Components
 - Rows, Columns, Values, and Filters areas
 - Field List and Field Settings
- Basic Operations

- Adding and arranging fields
- Sorting and filtering data within PivotTables
- Grouping data (by dates, numbers, etc.)
- Customizing PivotTables
 - Changing the layout and style
 - Using different PivotTable layouts (Compact, Outline, Tabular)
 - Formatting numbers and cells
- Calculations in PivotTables
 - Adding calculated fields and items
 - Using summary functions (SUM, COUNT, AVERAGE, etc.)
 - Showing values as percentages, differences, rankings
- PivotTable Options and Settings
 - Understanding PivotTable options
 - Refreshing data in PivotTables
 - Changing data source
- PivotCharts
 - Creating PivotCharts from PivotTables
 - Customizing and formatting PivotCharts
 - Understanding the relationship between PivotTables and PivotCharts
- Advanced Pivoting Techniques
 - Creating dynamic PivotTables with named ranges
 - Using Power Pivot to manage large data sets
 - Connecting PivotTables to external data sources
 - Create and customize advanced charts and graphs

Creating Charts

- Column, Bar, Line, Pie, and Combo charts
- Customizing chart elements (titles, axes, legends)
- Using Sparklines - Creating line, column, and win/loss sparklines
- Advanced Chart Techniques
 - Dynamic charts with named ranges
 - Using secondary axes

Macros and VBA (Task Automation) (as required)

- Introduction to Macros
 - Recording and running macros
 - Macro security settings
- Basics of VBA (Recording):
 - Starting with the recording Macros
 - Recording of Macros
 - Saving and running of Macros
 - Creating Custom Functions
 - Writing and using custom functions in VBA
 - Use Excel's collaborative and security features

Sharing and Collaboration

- Sharing workbooks
- Co-authoring and tracking changes
- Comments and notes

Protecting Data

- Worksheet and workbook protection
- Setting permissions

Excel Online and Mobile

- Using Excel in Office 365

Power Query

- Introduction
 - What is Power Query?
 - Importance and benefits of using Power Query
- Getting Started
 - Installing and accessing Power Query
 - Power Query interface and key components
- Connecting Data Sources
 - Types of data sources (Excel, databases, web, etc.)
 - How to connect to different data sources
- Data Import and Shaping
 - Loading data into Power Query
 - Basic data transformation (filtering, sorting, removing duplicates)
- Data Transformation
 - Using the Query Editor
 - Applying common transformations (merging, appending, splitting columns)

- Pivoting and unpivoting columns
 - Grouping data
- Data Cleaning
 - Handling missing values
 - Data type conversion
 - Text transformations (trim, clean, replace, etc.)
- Working with Functions
 - Using built-in functions
 - Creating custom functions
 - Parameters in Power Query
- Advanced Data Transformations
 - Merging queries
 - Append queries
 - Using conditional columns
 - Calculating and adding new columns

Scenario manager

Dashboards (Project)

- What are dashboards
- Getting data from different worksheets
- Display data in various charts on same sheet etc.

Duration

- Weekdays (MTTF, Wed is off/practice break)
 - Option 1 – 10 - 11 months - 1.5 to 2 hrs/day
 - Option 2 – 7 to 8 months – 2 to 2.5 hrs/day
- Weekends (S S)
 - Option 1 – 11 - 12 months - 2 to 2.5 hrs/day
 - Option 2 – 8 - 9 months - 2.5 to 3 hrs/day

Please Note –

- Add on topics (Adv. Deep Learning) – 1 to 1.5 months extra (mostly weekends)

more info - <https://quickxpertinfotech.com/data-science-and-analytics-course>

Our Recruiters (1000+ Companies)



etc.

Our 5 Steps Process for Success



Contact Us

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