

#Empowering Minds

# Rooted | Recruited

ROOTED IN SKILLS, RECRUITED FOR SUCCESS.

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# Data Analytics with Python & AI/ML

TRANSFORMING POTENTIAL INTO PROFESSIONALS.

# About ITROOTS

At ITROOTS, we believe in transforming potential into professional excellence.

With over two years of proven success in Online training, ITROOTS now brings its industry-focused expertise OFFLINE, empowering learners across India to become job-ready professionals.

**Our mission** is to equip every learner with industry-ready skills, hands-on experience, and career confidence through AI-integrated, project-based learning.

## Why Choose ITROOTS?

Choosing the right training partner can define your career and at ITROOTS, we turn your goals into guaranteed outcomes.

### Why learners and employers trust us:



**100% Placement Guarantee:** We ensure every learner achieves their career goal.



**Refund Guarantee:** If we don't deliver as promised, your investment is safe.



**Post-Placement Support:** Continued guidance even after you're hired.



**Lifetime Career Assistance:** Ongoing mentorship and growth support



**Project-Oriented, AI-Integrated Training:** Learn through live, industry-level projects.



**Expert Mentorship:** Trainers with 10+ years of industry experience



**Daily 5-6 Hours of Practical Training:** Focused, hands-on sessions.



**Regular Assessments & Mock Interviews:** Build confidence before stepping into interviews.

*At ITROOTS, you don't just learn, you build, apply, and grow with every step.*

# Program Overview

The Java Full Stack Development (AI-Integrated) Program is a complete 6-month career transformation journey designed to make you an industry-ready developer.

You'll learn to build applications from scratch to mastering frontend, backend, and database development, while integrating AI tools that enhance productivity, debugging, and real-world problem-solving.

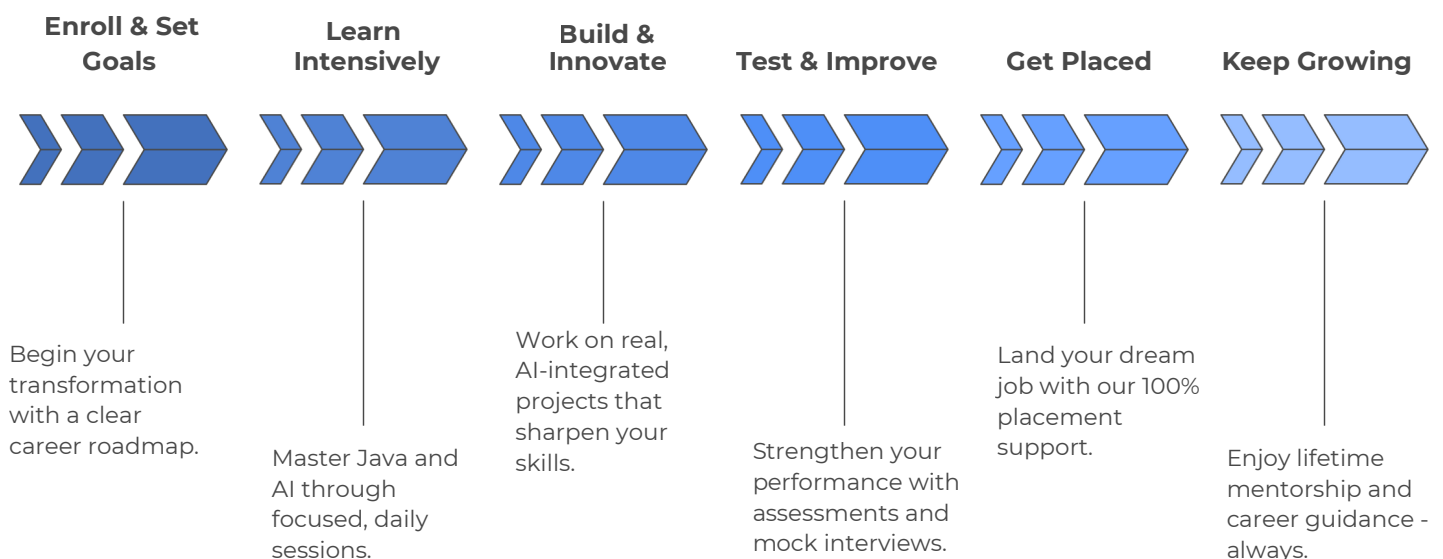
**Duration:** 6 Months

**Mode :** Online / Offline

**Ideal for:** Graduates, Job Seekers, and Working Professionals

## The Learning Journey

Every learner at ITROOTS follows a path that ensures real progress and measurable results:





# Syllabus

## Python Web Development

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### Python Programming

Introduction to Python | Python Installation & Setup | Understanding Syntax & Indentation | Variables & Data Types | Operators & Expressions | Conditional Statements – if, elif, else | Looping Constructs – for, while, nested loops

### Data Structures in Python

Lists – Creation, Indexing, Slicing | Tuples – Immutable Sequences | Sets – Unique Elements & Operations | Dictionaries – Key-Value Pairs | Advanced List & Dictionary Comprehensions

### Functions & Object-Oriented Programming (OOP)

Defining Functions – Parameters, Arguments | Types – Default, Keyword, Lambda | Scope – Local & Global | Classes & Objects | Constructor Method (init) | Inheritance – Single, Multiple | Polymorphism, Encapsulation | Practical OOP Implementation

### File Handling & Exception Management

Reading & Writing Files – Text, CSV, JSON | File Operations – Open, Read, Write, Close | Exception Handling – try, except, finally | Creating Custom Exceptions

### Modules, Packages & Environments

Importing Built-in Modules – math, datetime, os | Creating and Using Custom Modules | Organizing Code into Packages | Introduction to Virtual Environments (venv)

### Mini Project

Console-Based Python Application – Contact Book or Student Management System | Applying Core Concepts | Code Structuring and Output Formatting



# Syllabus

**Django Basics** – Introduction to Web Development | HTTP Requests & Responses | Setting up Django Project & App Structure

**Models & ORM** – Defining Models | Migrations | CRUD Operations with Django ORM | QuerySets

**Views & URLs** – Function-based Views | URL Mapping | Dynamic Routing | Passing Data to Templates

**Templates & Static Files** – Template Tags & Filters | Template Inheritance | Serving Static & Media Files

**Forms & User Input** – Django Forms | Validation | ModelForms | File Upload Handling

**Authentication & Admin** – User Registration & Login | Session Management | Django Admin Customization

**Django REST Framework (DRF)** – Serializers | API Views | CRUD APIs | Testing APIs with Postman

**Deployment & Git** – Version Control with GitHub | Intro to CI/CD | Deploying Django App to Cloud

**Capstone Project** – Build a Complete Web App (Blog / Task Manager / E-commerce Lite) with Frontend + Backend + REST APIs



# Syllabus

## Data Analysis

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### **Excel for Analysts**

Excel Basics | Data Types | Tables & Ranges | Conditional Formatting | Sorting & Filtering | Charts & Graphs | Pivot Tables | Lookup Functions (VLOOKUP, HLOOKUP, XLOOKUP) | Data Cleaning | What-If Analysis | Macros & Shortcuts

### **SQL for Data Analytics**

Relational Database Concepts | MySQL/PostgreSQL Basics | SELECT, INSERT, UPDATE, DELETE | Filtering & Sorting | Joins – Inner, Left, Right, Full | GROUP BY, HAVING, Aggregate Functions | Subqueries | Views & Indexing | Data Normalization

### **Python for Analytics**

Python Basics | Jupyter Notebooks | Data Types, Variables, Operators | Conditional Statements | Loops | Functions | File Handling | Working with JSON & CSV | Python Packages Overview

### **Python Libraries for Data Analysis**

NumPy – Arrays, Slicing, Indexing | Pandas – DataFrames, Series, Filtering, Merging | Data Cleaning & Transformation | Handling Nulls, Outliers, Duplicates | Date-Time Operations

### **Data Visualization (Python + Excel)**

Matplotlib – Line, Bar, Pie Charts | Seaborn – Heatmaps, Pairplots, Distributions | Excel Charts vs Python Charts | Plotly (Intro) | Dashboard Design in Excel

### **Statistics for Data Analytics**

Descriptive Statistics | Mean, Median, Mode, Variance, Standard Deviation | Probability Basics | Distributions (Normal, Binomial) | Correlation & Covariance | Outlier Detection | Hypothesis Testing – z-test, t-test

### **Power BI (Dashboarding & Reporting)**

Power BI Basics | Data Loading & Transformation | Power Query Editor | Creating Visualizations | Filters & Slicers | Drill Down | DAX Functions – CALCULATE, SUMX, IF, SWITCH | Creating Interactive Dashboards | Sharing & Publishing Reports

### **Tableau – Data Storytelling & Dashboarding**

Tableau Basics | Connecting to Data Sources | Dimensions vs Measures | Creating Visualizations – Bar, Line, Tree Map, Maps | Filters, Parameters, Groups | Calculated Fields | Creating Dashboards & Stories | Publishing to Tableau Public

# Syllabus

## AI & ML

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### **AI & Machine Learning**

Introduction to AI & ML | AI vs ML vs DL | Real-World Use Cases | Types of Machine Learning – Supervised, Unsupervised, Reinforcement | Tools Overview – Python | Data Visualization – Matplotlib & Seaborn | Bar, Line, Histogram, Boxplot | Correlation & Heatmaps | ML Basics – ML Workflow | Dataset Splitting – Train/Test | Model Building Steps | Scikit-Learn Intro | Supervised Learning – Linear Regression (Theory + Code) | Logistic Regression (Binary Classification) | KNN Classifier | Evaluation Metrics – Accuracy, Precision, Recall | Unsupervised Learning – K-Means Clustering | Use Cases – Segmentation, Anomaly Detection | Dimensionality Reduction (PCA Intro) | Mini Project – Customer or Student Segmentation | Capstone Project – Real-world Dataset | Data Cleaning + EDA + Model Building + Evaluation + Report | Mock Interview Preparation | Resume Building Tips | Final Assessment + Full Revision + Q&A Wrap-Up



# Syllabus

## SoftSkills & English Communication

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Introduction to Soft Skills & Etiquette | Verbal & Non-verbal Communication | Active Listening | Effective Speaking | Body Language & Confidence Building | Group Discussion Practice | Grammar Refresher – Tenses, Articles, Prepositions | Vocabulary Building | Daily Use Expressions | Reading Comprehension | Sentence Framing | Conversational Role Plays | Public Speaking Skills | Overcoming Stage Fear | Presentation Structure & Flow | Visual Aids & Delivery Etiquette | Email Writing – Tone, Structure, Format | Business Writing – Letters, Reports | Resume & Elevator Pitch | HR Interview Questions & STAR Technique | Workplace Behavior | Team Collaboration & Conflict Resolution | Time Management & Goal Setting | Final Assessment + Interview Simulation + Q&A

## Aptitude

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Number Systems | Simplification | Ratio & Proportion | Percentages | Averages | Time & Work | Profit & Loss | Simple & Compound Interest | Time, Speed & Distance | Boats & Streams | Pipes & Cisterns | Mixtures & Alligations | Age Problems | Practice Worksheets | Series Completion – Numbers, Alphabets | Coding-Decoding | Blood Relations | Directions | Seating Arrangement | Puzzles | Syllogism | Ranking & Order | Venn Diagrams | Arithmetic Word Problems | RACES | Geometric Mensuration | Permutation and Combination | Probability | Image Completion | Direction Sense | Analogy | Clock and Calendar | Trains | Full-Length Aptitude Mock Test | Final Assessment + Strategy Tips + Q&A Wrap-Up Aptitude SoftSkills



# Projects

## RetailPro: Smart Inventory Manager

Optimize inventory levels and reduce waste across retail chains by analyzing sales trends, restock cycles, and seasonal demand.

**Technology:** Data Analytics



## FinScope: Business Expense Tracker

Track, visualize, and optimize company-wide expenses and revenues for better budgeting and forecasting.

**Technology:** Business Analytics



## MetroCommute: City Transport Analysis

Evaluate public transport performance using ticket data and route occupancy trends to recommend route optimization.

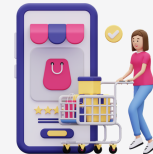
**Technology:** Data Analytics



## ShopTrend: Online Store Insights Dashboard

Build an interactive dashboard that showcases online product trends, customer preferences, and category performance.

**Technology:** .NET



## QuizBash: Interactive Coding Quiz Platform

A real-time coding quiz platform with scoring and feedback, designed to test job-ready skills.

**Technology:** Java



## WeatherSnap: Forecast Dashboard System

Build a system that fetches and displays real-time and historical weather data with filtering options.

**Technology:** Java



## DineSmart: Restaurant Order Manager

Create a complete restaurant order management and billing solution with admin and kitchen modules.

**Technology:** .NET



# Our Role in Your Success

At ITROOTS, our commitment goes beyond teaching. We partner with you throughout your career journey. From learning the latest technologies to securing your dream job, we make sure you're guided, supported, and ready for real-world success.

## 1. Skill Advancement & Technology Mastery

We train you in the most in-demand tools and technologies used by leading IT companies.

You'll master:

- Frontend: HTML, CSS, JavaScript, Bootstrap, React / Angular
- Backend: Core Java, Spring Boot, Hibernate
- Database: MySQL, Oracle
- Tools & AI: Git, JIRA, Jenkins, AI-powered coding tools
- Practices: Agile, SDLC, MVC Architecture



Each session combines concepts with hands-on practice, ensuring you graduate with industry-ready skills and real project experience.

## 2. Continuous Career Support

We don't just train you; we prepare you to thrive.

Our dedicated career team provides:

- Resume & LinkedIn optimization
- Technical & HR mock interviews
- Personalized career counselling
- Access to exclusive job networks and hiring partners
- Lifetime mentorship for continuous growth and upskilling



## 3. Guaranteed Placement Assistance

Your success is our goal.

Through our Hire → Train → Deploy model, we ensure every learner is:

- Trained with AI-integrated, project-based sessions
- Evaluated through tests and mock interviews
- Deployed into top IT companies with complete career readiness

With our 100% Placement Guarantee and Refund Assurance, your journey with ITROOTS is result-driven, transparent, and focused on success.



# Alumni Success Stories



ITROOTS is one of the best institutes for training and placement. The trainers are experienced, supportive, and always approachable. I completed my Full Stack Java Certification from ITROOTS and got placed as a Software Developer. Grateful to the entire ITROOTS team for their constant guidance.

~ Priya Wagh

Joining ITROOTS was the best decision for my IT career. In just six months, I learned Frontend, Backend, and Database technologies and got placed within a week after completing the course. The placement team is truly dedicated and helpful throughout the process.

~ Harsh Patil



ITROOTS is an excellent place for learning and placement. The team is very supportive and helps you build knowledge from the basics, even if you come from a non-IT background. Thank you, ITROOTS, for helping me start my career with confidence.

- Mayur Aware

250+ Success stories so far and counting  
visit our website for more success stories and get inspired

## Our Client Partners



and many more....

# Our Commitment

***“Rooted in Skills. Recruited for Success.”***

At ITROOTS, we promise outcomes, not just education. With 100% Placement Guarantee, Refund Assurance, and Project-Oriented Training, every learner becomes a professional with confidence and clarity. We prepare you for industry success with real skills, real projects, and lifelong support.

***Your growth doesn't stop at placement, it starts there.***

## Contact Us

📍 Institute Address: ITRoots Pvt Ltd, Office No. 1319, 2nd floor, Rainbow Plaza, Jangali Maharaj Road, opposite Modern High School, Deccan, Shivajinagar, Pune, Maharashtra 411005

🌐 Website: [itroots.co.in](http://itroots.co.in)

✉ Email Address: [info@itroots.co.in](mailto:info@itroots.co.in)

☎ Contact Number: 8877202122

Scan to Enroll



18% GST Applicable