



# **SPYPRO SECURITY SOLUTIONS Pvt. Ltd.,**

C Y B E R S E C U R I T Y

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## **5-Day Workshop on Python Full Stack Development**

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### **Day 1: Python Programming & Web Basics**

#### **Session 1: Introduction to Python**

- What is Python? Importance & real-world applications
- Python syntax, variables & data types
- Control structures (if-else, loops)
- Functions & modules

#### **Hands-On**

- Writing basic Python programs
  - Building simple logic-based applications
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### **Session 2: Web Development Fundamentals**

- Introduction to Web & Full Stack development
- HTML5 structure & elements
- CSS3 styling & layouts
- JavaScript basics

#### **Hands-On**

- Creating a static webpage
  - Adding basic interactivity using JavaScript
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### **Day 2: Backend Development with Python**

#### **Session 1: Backend Framework (Django / Flask)**

- Introduction to backend & MVC/MVT architecture
- Setting up Django / Flask project
- URL routing & views
- Templates & static files

## **Hands-On**

- Creating a backend project
  - Rendering dynamic data on web pages
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## **Session 2: Database & Data Handling**

- Introduction to databases (MySQL / SQLite)
- Models & ORM concepts
- CRUD operations
- Forms & validations

## **Hands-On**

- Connecting backend to database
  - Performing CRUD operations
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## **Day 3: Advanced Backend & APIs**

### **Session 1: REST APIs Development**

- Introduction to REST APIs
- HTTP methods (GET, POST, PUT, DELETE)
- Creating APIs using Django REST Framework / Flask
- JSON data handling

## **Hands-On**

- Building REST APIs
  - Testing APIs using Postman
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### **Session 2: Authentication & Security**

- User authentication & authorization
- Login, registration & role-based access
- Session & token-based authentication (JWT basics)

## **Hands-On**

- Implementing user login & signup
  - Securing backend routes
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## **Day 4: Frontend Integration & Deployment**

### **Session 1: Frontend-Backend Integration**

- Connecting frontend with backend APIs
- Handling forms & API responses
- Basic UI enhancements

## **Hands-On**

- Integrating APIs with frontend
- Displaying dynamic data

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## **Session 2: Deployment & Tools**

- Version control with Git & GitHub
- Deployment basics (Local / Cloud)
- Environment variables & settings

### **Hands-On**

- Pushing project to GitHub
  - Deploying Python application
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## **Day 5: Project Development & Future Scope**

### **Session 1: Project Development**

- Full-stack project development
  - Debugging & error handling
  - Best practices in Python Full Stack
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### **Session 2: Presentation & Closing**

- Project demos & presentations
  - Discussion on challenges & solutions
  - Career paths in Python Full Stack
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## **Capstone Project Example**

### **Python Full Stack Web Application**

- **Frontend:** HTML, CSS, JavaScript
- **Backend:** Python (Django / Flask)
- **Database:** MySQL / SQLite
- **Features:** User authentication , CRUD operations , REST API integration , Responsive UI

### **Tools Used:**

- Python
  - Django / Flask
  - MySQL / SQLite
  - Postman
  - Git & GitHub
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## **Closing Session**

- Certificates distribution
- Feedback & Q&A