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Course Instructor:

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Backend Developer (Python/Django) at Join Venture AI
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কোর্স নির্দেশনা ও ক্যারিয়ার স্কোপ :

এই কোর্সে মোট **১০টি প্রজেক্ট** করা হবে, যার মধ্যে Django Rest API দিয়ে ৩টি এবং FastAPI দিয়ে ৩টি প্রজেক্ট থাকবে। অর্থাৎ, API ভিত্তিক মোট ৬টি প্রজেক্ট শেখানো হবে। এছাড়া, Django দিয়ে একটি আলাদা প্রজেক্ট থাকবে। পাশাপাশি, লাইভ ক্লাসে ২টি প্রজেক্ট করা হবে, যা ছাত্রদের হাতে-কলমে শেখার অভিজ্ঞতা দেবে। সব মিলিয়ে, মোট ১০টি প্রজেক্ট নিয়ে সাজানো হয়েছে এই কোর্সটি। পুরো কোর্সের সময়সীমা ৭০ ঘণ্টা, যেখানে মোট ২৮টি ক্লাস থাকবে।

Machine Learning Engineer হতে সফটওয়্যার ইঞ্জিনিয়ারিং এর স্কিলস শেখা খুবই গুরুত্বপূর্ণ। এই কোর্স এর Backend Development এর স্কিলস কাজে লাগিয়ে **Machine Learning Engineer** হিসেবেও জব পাওয়া সম্ভব। কিন্তু এই কোর্স এ মেশিন লার্নিং এর পার্ট কভার করা হবে না। সেটা আলাদাভাবে আপনাকে শিখে নিতে হবে। সেজন্য আপনি আমাদের এই প্লেলিস্ট টি ফলো করতে পারবেন

কোর্স শেষ করেই সরাসরি আপনাকে জব দিব, আমরা এই প্রমিস করতেছি না! কিন্তু, যে সকল স্কিল ছাড়া আপনি Django Developer অথবা Python Software Developer পজিশনে জব পাবেন না, প্রতিটা স্কিল এই কোর্স এ অবশ্যই কাভার করা হবে, যেন এই কোর্স শেষ করেই আপনি জব পেয়ে যান!

সফটওয়্যার ইঞ্জিনিয়ারিং এন্ড মেশিন লার্নিং এর কম্বিনেশন করে জব মার্কেট কোন দিকে যাচ্ছে? এই ভিডিও দেখলেই বুঝতে পারবেন। বলে রাখা ভালো, স্টুডেন্টের চাহিদা অনুযায়ী যদি নতুন কোন টপিক এড করার প্রয়োজন হয়, আমরা সেই বিষয়গুলোও মাথায় রেখেছি এবং জব এ ল্যান্ড করার আগে পর্যন্ত সাপোর্ট দেয়ার জন্য আমাদের জায়গা থেকে সর্বোচ্চ চেষ্টা করব! তাহলে চলে আসেন! দেখা হচ্ছে লাইভ ক্লাসে। ধন্যবাদ 🙂

এক নজরে কোর্স মডিউল:

1. Introduction to Web Development with Django
2. Python Programming Language & OOP Concepts
3. Working with Version Control Git & GitHub
4. Web Design with HTML, CSS, & Bootstrap
5. Python Django Framework
6. Working with Database (SQLite3, MySQL, PostgreSQL)
7. End-to-end e-commerce Project with Django
8. Working with Docker Containerization
9. Project Deployment in Cloud Platforms
10. Django REST Framework Concepts
11. E-commerce API, Social Media API, Online Learning Platform API Project Using DRF.
12. FastAPI Concepts
13. Chatbot API, Restaurant Management System API, Inventory Management API Using FastAPI.
14. Personal Project Development Session
15. Session to Build Individual Final Project for All Students
16. Career Guideline Session

Module 01: Intro to Web Development with Python Django - (1.30 Hours)

- Intro to Web Development
- Framework Concepts
- APIs Concepts
- Importance of Python Django
- Docker Concepts
- Django Unit Testing Concepts
- Database (SQLite, MySQL, PostgreSQL) Concepts
- Django Security Concepts
- Deployment and Hosting Concepts
- Demand for Django in the Industry
- Importance of LinkedIn & GitHub
- Job Responsibility of Django Developer

Module 02: Python Programming - (8 Hours)

Lecture 01: Python Basics

- Environment Setup
- Print 'Welcome to Become a Django Developer'
- Input & Output Function
- Understanding Variables
- Rules for Variable Naming
- Naming Multi-word Variables
- Understanding Data Types
- Exploring Python Operators
- Working with Strings

***Asignment

Lecture 02: Control Structure

- Conditional Statement (if, elif, else)
- Loops (for loop, while loop)
- CRUD Operation Project (Create, Read, Update Delete)

***Assignment
***Previous Class problem solving

Lecture 03: Data Structures

- Understanding List
- Understanding Tuple
- Understanding Dictionary
- Understanding Functions

***Assignment
***Previous Class problem solving

Lecture 04: Object-Oriented Programming

- Introduction to Object-Oriented Programming (OOP)
- What is Class, Object & How it Works.
- Methods in OOP
- Inheritance Concept
- Understanding polymorphism
- Encapsulation Concept
- Understanding abstraction

***Assignment
***Previous Class problem solving

Module 03: Version Control Git and Github (1.30 Hours)

- Introduction to Version Control Systems
- Understanding Git Basics
- Setting up Git for a Django Project
- Git Workflow
- Collaborating with Git
- Git Best Practices for Django Development
- Version Control Strategies for Django Projects
- Advanced Git Techniques for Django Developers

Module 04: Web Design Basics (5 Hours)

HTML (Hypertext Markup Language)

- Introduction to HTML
- HTML Document Structure
- HTML Elements and Tags
- Text Formatting in HTML
- Hyperlinks and Anchors
- Images and Multimedia
- Lists in HTML

- Tables in HTML
- Forms and Input Elements

CSS (Cascading Style Sheets)

- Introduction to CSS
- CSS Syntax and Selectors
- CSS Box Model
- Colors and Backgrounds etc.

Bootstrap

- Introduction to Bootstrap
- Setting up Bootstrap in a Project
- Bootstrap Components: Buttons, Forms, and Cards
- Responsive Design with Bootstrap
- Bootstrap Navigation Components: Navbar, Navs, and Dropdowns
- Advanced Bootstrap Components: Modals, Carousels, and Accordions
- Integrating Bootstrap with JavaScript Plugins

***Assignment
***Previous Class problem solving

Module 05: Django Fundamentals (14 Hours)

Lecture 01:

- Understanding the Concept of Django
- Advantages of Learning Django
- Understanding the Model-View-Template (MVT) Architecture in Django
- Setting up the Development Environment
- Global Installation of Django
- Installing Django within a Virtual Environment (VE)
- Installing Extensions in Visual Studio Code
- Understanding Django Project Structure
- Creating a Django App
- Exploring App Structure in Django
- Displaying 'Welcome to aiQuest' Message

Lecture 02:

- Function-Based Views (FBVs)
- URL Routing and Configuration
- Templates

- Template Rendering
- Context Data and Template Variables

Lecture 03:

- Django Template Language (DTL)
- Variables in Django Templates
- Filters in Django Templates
- Template Tags in Django Templates
- Template Inheritance in Django
- Dynamic Content Rendering
- Reusable Templates and Components
- Best Practices in Django Templating

Lecture 04:

- Inheritance in Django
- Hyperlinks and Navigation
- Cookies Management in Django
- Object-Relational Mapping (ORM)
- Models in Django
- QuerySets and Database Queries
- Model Views and Template Rendering

Lecture 05:

- Inheritance in DjangoCreating Migration Files with ‘makemigrations’
- Applying Model Changes with ‘migrate’
- Database Management in Django
- Creating Superusers for Django Admin
- Registering Models in Django Admin Interface
- Database Schema Evolution and Migration
- Advanced Migration Operations and Management
- Best Practices for Database Management in Django

Lecture 06:

- Introduction to Django Forms
- Working with Label Tags in Forms
- Exploring Form Field Arguments
- Utilizing Form Widgets for Data Input
- Understanding GET and POST Methods in Form Submission

- Validating Form Data in Django
- Accessing Cleaned Data in Django Forms

Lecture 07:

- Redirecting HTTP Responses in Django
- Validating Password Matching in Forms
- Styling Forms with CSS for Visual Appeal
- Save Form Data to Database
- Implementing Authentication and Authorization in Django
- Customizing Form Validation for Specific Requirements
- Handling Form Submissions and Redirects

Lecture 08:

- Creating a registration Form using UserCreationForm
- Implementing Login Authentication Mechanisms
- Managing User Logout Functionality
- Enabling Password Change Forms
- Implementing Password Set Forms for New Users

***Assignments
***Previous Class problem solving

Database Relationships with SQLite3:

- Understanding Model Relationships in Django
- Implementing One-to-One Relationships in Models
- Defining Many-to-One Relationships in Database Models
- Managing Many-to-Many Relationships between Database Entities

Module 06: End to End Ecommerce Website Project (9.5 Hours)

Lecture 01:

- Project Overview and Discussion
- URL Routing and Configuration
- View Functions and Business Logic
- Templating for Dynamic Content Rendering
- Managing Static Files and Assets

Lecture 02:

- Defining Database Models with Relationships
- Admin Interface Integration: Registering Models
- Generating Migration Files with 'makemigrations'
- Applying Migrations to Update Database Schema
- Creating Superuser for Admin Panel Access
- Admin Panel Content Management: Adding Images and Information
- Displaying Images and Data in the User Interface

Lecture 03:

- Implementing Password Change Functionality for Enhanced Security
- Enabling Forgot Password Functionality with Email Verification
- Managing Password Reset Mechanism for User Convenience
- Validating Password Match for Form Submission
- Enhancing Form Appearance with CSS Styling
- Storing Form Data Securely in the Database
- Implementing Authentication and Authorization Mechanisms for User Access Control

Lecture 04:

- Implementing a Cart System: Creating a Virtual Container for Purchased Products
- Adding Products to the Cart: Allowing Customers to Add Items
- Cart Calculation: Computing the Total Price of Products in the Cart
- Handling Product Quantity Increase in the Cart: Allowing Customers to Add More of the Same Product
- Managing Product Quantity Decrease in the Cart: Allowing Customers to Remove Items from the Cart

Lecture 05:

- Removing Products from the Cart: Allowing Customers to Remove Items
- Checkout Process: Reviewing Cart Details Before Finalizing Purchase
- Displaying Products in the Cart: Showing Items Added for Purchase
- Search Functionality: Enabling Users to Search for Products
- Project Guidelines

***Assignments
***Previous Class problem solving

Module 07: Deployment Django Project - (2 Hours)

- Introduction to PythonAnywhere
- Creating an Account
- Setting Up a Django Virtual Environment
- Uploading Django Project Files
- Configuring WSGI File
- Installing Dependencies
- Configuring Database
- Running Migrations
- Testing Deployment
- Monitoring and Maintenance

Module 08: Docker - (2 Hours)

- Introduction to Docker
- Installing Docker
- Dockerfile
- Docker Compose
- Containerizing Django
- Docker Images
- Docker Deployment

Module 09: Working with Database (MySQL, PostgreSQL) - (3 Hours)

- Introduction to Database Integration in Django
- Configuring Database Settings
- Creating Database Tables
- Migrating Database Schema
- Handling Database Operations
- Discuss about SQL query.
- Xampp install & environment setup for Postgresql

***Assignments
***Previous Class problem solving

Module 10: Django REST Framework - (4 Hours)

Lecture 01:

- Introduction to Django Rest Framework (DRF)
- Serializers: Converting Django models into JSON and vice versa
- Views: Implementing API endpoints with class-based views or function-based views
- Understand GET, PUT, POST, PATCH method.

- Authentication: Configuring authentication methods such as Token Authentication or OAuth2
- Permissions: Managing user access permissions for API endpoints

Lecture 02:

- ViewSets and Routers: Simplifying API URL routing and view creation
- Filtering, Searching, and Sorting: Implementing filters, search functionality, and sorting options for API endpoints
- JWT

***Assignment
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Module 11: Django REST Framework Projects - (6 Hours)

Project 01: E-commerce Platform API

- **Description:** Develop a comprehensive API for an e-commerce platform that manages products, categories, user carts, orders etc.

Project 02: Social Media API

- **Description:** Create an API that supports user profiles, posts, comments, likes, and follows, mimicking core features of social media platforms.

Project 03: Online Learning Platform API

- **Description:** Build an API for an online learning system that manages courses, lessons, quizzes, and student progress tracking.

Module 12: FASTAPI - (5 Hours)

Lecture 01:

- Introduction to FastAPI
- Installation and Setup
- Creating API Endpoints
- Request and Response Models
- Middleware

- Token

Lecture 02:

- Fastapi creates login API & authentication & authorization using token authentication.

Module 13: FASTAPI PROJECTS- (6 HOURS)

Project 01: Chatbot API for Customer Support

- **Description:** Create a chatbot API to automate customer support for an e-commerce website. The API will answer FAQs and handle simple queries.

Project 02: Restaurant Management System API

- **Description:** Develop an API for managing restaurant orders, menus, reservations, and customer feedback.

Project 03: Inventory Management API

- **Description:** Build an API that allows businesses to track and manage inventory across multiple locations, including product availability, stock levels, and product categories.

Django WebSocket & Channels:
Implementing real-time communication features like live chat, notifications, and subscriptions with Django Channels.

Payment Gateway Integration:
Integrating SSLCommerz and Stripe payment gateways to process transactions on your Django e-commerce site.

Module 14: Guidelines for Django Projects, Portfolio, and Jobs - (1.5 Hours)

- How do you effectively gather and implement frontend designs into a Django project?
- Project Ideas
- Importance of LinkedIn Community
- ATS Friendly CV-Making
- Professional Network Building
- Internship / Job Guidelines.

Contact Details:

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