Course Name : **MASTERING FLASK: FROM BASICS TO ADVANCED**
Duration : **4 Days (Physical Classroom / Virtual Live Instructor)**
Skill Level : **Beginner**

COURSE DESCRIPTION:

Embark on a comprehensive Flask development journey with our expertly curated course. In the "Flask Fundamentals" module, you'll delve into microframeworks, mastering URL structures, dynamic routing, and Jinja2 for efficient template rendering. Progress through form handling, error management, and Bootstrap for dynamic web applications. The subsequent "Data Models and Databases" module equips you with crucial skills in relational databases, SQL, Flask-SQLAlchemy, and seamless database operations.

In the final module, "Advanced Flask and Deployment," elevate your skills with topics like API Blueprint, authentication, and unit testing. Uncover the power of the Application Factory pattern and Blueprints for optimal code organization. Strengthen your applications with email verification, user authentication, and robust permission handling. The course culminates in an exploration of RESTful APIs, guiding you through installation, setup, and deployment on platforms like Heroku. Gain practical insights into serialization, URL design, and secure authentication for building and deploying scalable APIs. Join us on this dynamic learning journey to master Flask development and confidently deploy applications.

WHAT WILL YOU LEARN?

In this comprehensive Flask course, you will acquire a strong foundation in web development, starting with fundamentals such as microframeworks, URL structuring, and template rendering. Gain practical skills in handling forms, dynamic routes, and creating interactive web applications. Move on to master data models and databases, where you will delve into relational databases, SQL, Flask-SQLAlchemy, and database migration techniques. As you progress, explore advanced Flask concepts, including API Blueprint, authentication, unit testing, and application structuring with Blueprints. The course also covers the creation and deployment of RESTful APIs, guiding you through installation, serialization, URL design, and secure authentication. By the end, you'll be well-equipped to build robust and scalable web applications and deploy them confidently using platforms like Heroku.

PREREQUISITE:

Beginners. Having Python programming knowledge is an added advantage.

METHODOLOGY:

This program will be conducted with interactive lectures, PowerPoint presentations, discussions, and practical exercises. This course can be conducted as instructor-led (ILT) or virtual instructor-led training (VILT).

JOB SCOPE:

Upon completion of this course, candidates may pursue the following career paths:

- Web Developer (Flask)
- Full Stack Developer
- Backend developer
- Database Developer
- API Developer

MODULE 1: FLASK FUNDAMENTALS
- Welcome
- Microframeworks
- URLS, Routes, Dynamic Routes
- Jinja2 and Template Rendering
- Template Variables, Control Structures, Bootstrap
- Error Handling
- Forms, GET, and POST requests
- Redirects, Sessions, and Message Flashing

MODULE 2: DATA MODELS AND DATABASES
- Database Management
- Relational Databases
- SQL
- SQLAlchemy vs. Flask-SQLAlchemy Defining Models and Relationships
- Interacting With Models, Database Operations Database Migration with Flask-Migrate

MODULE 3: ADVANCED FLASK
- API Blueprint, Status Codes, Authentication
- Separation of Responsibilities Application Factory
- Blueprints
- Unit Testing
- Email Verification, User Authentication and Permissions
- Password Hashing. User Profiles
- Paginating

MODULE 4: RESTFUL APIs
- Build and Deploy Your API: Installation and Setup,
- Serializers, URLs
- API Blueprint, Status Codes, Authentication

MODULE 5: DEPLOYMENT
- Heroku Configuration & Deployment, Setting Config Vars,
- Heroku Dashboard
- Preparing your App for Deployment, Pushing & Upgrading

CONCLUSION
- QA
- Useful References and Books
- Feedback

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