



جهاد دانشگاهی صنعتی شریف
مرکز آموزش های تخصصی کاربردی

سرفصل های
دوره آموزشی

دوره بک اند دولوپر Back End Developer





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Python Overview

- Installation and setup
- Prepare your ide
- Datatypes
- Functions
- Pip
- Modules
- Virtualenv
- Exceptions
- Oop concepts
- Sample projects

Git Introduction

- What is git
- How to install it and using github desktop
- Basic knowledge of git and usage



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[Django Beginner]

- **Start using Django**
 - Introduction to django
 - Django architecture
 - Setup your first project and learn structures
 - Setup your first app and using url,view,template
 - Choose your template
- **Static,Media and Tempalate**
 - Setup static and media in settings
 - How to use tags and jinja
 - Migrate your chosen template
 - Inheritance of templates
 - Dynamic urls
 - Create blog app
 - Render data to template
- **Database and Admin**
 - Makemigrations and migrate
 - Superuser and admin orm
 - Fields in database
 - Create model for blog with app
 - Create model in Django



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- Connect to shell and use orm
- Checkout admin panel
- Customizing admin
- Meta in models
- **Views and Database**
 - Fetch data and render to page
 - url parameters
 - completing urls and views for blog app
 - post categorizations
 - concatenate the posts
 - template include
- **Template Tags**
 - Getting to use tags
 - Simple tag
 - Filter tag
 - Inclusion tag
 - Using tags in blog
 - Pagination
- **Django Forms**
 - Create forms in template
 - Form



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- ModelForm
- Use forms in blog
- Messages
- **Django Modules**
 - Humanize
 - Sites framework
 - Sitemap
 - Robots
 - Debugger toolbar
 - Captcha
 - meta
 - Rss feed
 - Django compressor
- **Django Authentication**
 - What is authentication
 - Login form and authentication
 - Logout
 - Signup
 - Authentication decorators
 - Auth module
 - Introduction to allauth



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- **Deployment on host**
 - Deployment on cpanel
 - Deployment on liara

[Docker]

- What is docker and how to install
- Basic usage of docker
- What is docker compose
- Setup a service and use for django

[Django]

- **Introduction**
 - Why we need to know more
- **Getting Ready**
 - Setup repo
 - Create dockerfile
 - Add docker-compose
 - Environments
 - Database schema



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- Create needed apps
- **Setup Project**
 - Add models
 - AbstractBaseUser and CustomUser
 - Managers and UserManager
 - Change default auth model
 - Customize admin and admin forms
 - Add profile
 - Django Signals
- **Class Based Views**
 - FBV vs CBV
 - TemplateView
 - RedirectView
 - ListView
 - Paginations and Customizations
 - DetailView
 - FormView
 - CreateView
 - UpdateView
 - DeleteView
 - Permissions and mixins
 - Start a TodoApp



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- **RestFramework and Serializers**

- Api and RestAPI
- Whats the difference between rest and render
- DRF installation
- views
- Serializers
- Statuscodes
- Modelserializers
- Validation
- Crud operation
- Introduction to Postman and usage
- Permissions
- Postman Authentication

- **Restframework in class based views**

- Migrate to ApiView
- Permission classes
- Crud in apiview
- Migrate to GenericViews
- Crud in GenericViews
- Migrate to ViewSets and ModelViewSet
- Crud in ViewSets
- Default and Simple Router



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- Api Documentation
- Customizing representation
- Get user info
- Permission Classes
- FilterBackends
- SearchFilter
- Ordering and Sort
- Paginations
- More filters and customizations
- **Api Documentations**
 - Swagger and Redic
 - Swagger to postman
- **Authentications**
 - Add accounting app
 - What endpoints we need
 - Register
 - Token Authentications
 - JWT Authentications
 - Email Verifications and activation
 - SMTPDev
 - Email templates
 - Versioning api



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- **Reformat and Lint**
 - Black and flake8
- **Tests**
 - What is testcase
 - What should we test
 - url tests
 - form tests
 - model tests
 - view tests
 - what is Pytest
 - Crud tests for application in api
- **Continues Integrations**
 - What is CI and devops
 - Intro to github actions
 - Workflow
 - Create and deploy ci in actions
- **Fake data**
 - Create fake data with faker
- **Access Management to API**
 - Request with jquery
 - Corsheaders setup



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- **Load Testing**
 - Introduction to locust
 - Create some load on api
- **Background tasks**
 - What is background tasks
 - Setup redis and settings
 - What is celery and setup in django
 - Create tasks for workers
 - Create schedule tasks with beat
- **Caching**
 - What is caching
 - Setup redis and settings
 - How to cache pages
 - How to cache api calls
- **Getting ready for Deployment**
 - Getting ready for deployment
 - Setup gunicorn
 - Setup nginx
 - Setup statics and media
 - Create ۳ stages of program



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- **Deployment**
 - Deploy on VPS
 - Setup ssh and docker
 - Setup server with proxy
 - Deploy
 - Deploy on Hamravesht
- **Continuous Deployment**
 - What is cd
 - Automate deployment in actions

[Concepts of Microservice]

- What is microservice
- What is the best tools to choice
- General architectures
- Protocols and Usage