Interview Preparation for Python Django Backend Developer

Python Topics

OOP, SOLID, ACID, Design Patterns

- OOP (Object-Oriented Programming): Object-oriented programming relies on objects and classes.

- SOLID Principles: Software design principles to facilitate development and maintenance:

-   - Single Responsibility Principle (SRP)

-   - Open/Closed Principle (OCP)

-   - Liskov Substitution Principle (LSP)

-   - Interface Segregation Principle (ISP)

-   - Dependency Inversion Principle (DIP)

- ACID (Atomicity, Consistency, Isolation, Durability): Database properties ensuring data integrity.

- Design Patterns: Ready-made solutions for common design problems such as Singleton, Factory, Observer.

Python topics: Dictator, Generator, Metaclass, Data Types

- Dictator: Possibly a typo, likely meant 'dict' or dictionaries.

- Generator: A function that yields a series of values using 'yield'.

- Metaclass: A class that controls the behavior of other classes.

- Data Types: Data types in Python such as int, float, str, list, dict.

List, Tuple, Dict, Set

- List: Mutable ordered collection.

- Tuple: Immutable ordered collection.

- Dict: Dictionary of key-value pairs.

- Set: Unordered collection of unique values.

List Comprehension

- A concise way to create lists based on existing lists with conditional expressions.

Python Intro

- An introduction to Python as a high-level, dynamic programming language.

Sorting Algorithms

- Bubble Sort, Merge Sort, Quick Sort: Different algorithms for sorting elements.

Functional Programming

- Programming paradigm that relies on functions and mathematical expressions.

List Unpacking

- Extracting values from lists or other collections into separate variables.

Try Exceptions

- Error handling using try and except blocks.

Django

Django, Signals, Views, ViewSet, Generic View, Mixins

- Django: A Python web framework.

- Signals: Mechanism for alerting between application components.

- Views: Logic for handling requests.

- ViewSet: Set of views in REST framework.

- Generic View: Ready-made views for common operations.

- Mixins: Add-ons to extend view functionality.

Docker, Celery in Django, Redis

- Docker: Tool for running applications in isolated containers.
- Celery: Library for asynchronous task execution.
- Redis: In-memory database used for caching.

How to Deploy

- Deploying applications using tools like Docker, Kubernetes, or cloud services like AWS.

CRUD in Django and REST Framework API

- Creating CRUD interfaces using Django and Django REST framework.

Database

DB, Query in Django, Filtering F, Q

- DB: Databases.
- Query in Django: Writing queries using ORM.
- Filtering F, Q: Using F and Q classes for complex data filtering.

MVT, Load Balancer

- MVT (Model-View-Template): Design pattern used in Django.
- Load Balancer: Distributing load across multiple servers for better performance.

AWS Intro, EC2, S3, Auto-scaling

- AWS Intro: Introduction to Amazon Web Services.

- EC2: Cloud computing service.

- S3: File storage service.

- Auto-scaling: Automatically adjusting resources based on demand.

Nginx and How to Deploy to AWS

- Nginx: Web server and reverse proxy.

- How to Deploy to AWS: Deploying applications on AWS using EC2, S3, and other services.

API

API and Auth in REST API and Method API

- REST API: Design pattern using HTTP.

- Auth in REST API: Authentication methods like Token, OAuth.

- Method API: APIs based on function calls.

Microservice and Monolithic

- Microservice: Breaking applications into small, independent services.

- Monolithic: Single large application containing all functionalities.

ASR, SSR

- ASR (Automatic Speech Recognition): Recognizing speech automatically.

- SSR (Server-Side Rendering): Generating HTML pages on the server.

Other Topics

What's Different Between Library, Package, Module, Framework

- Library: Collection of reusable functions.

- Package: Unit of distribution containing libraries.

- Module: Python file containing code.

- Framework: Work environment providing a foundation for application development.

Git Commands and Shortcut Concepts in Programming

- Git Commands: Commands like 'git clone', 'git commit', 'git push'.

- Shortcut Concepts: Concepts to improve code such as DRY, KISS.