

Backend Developer Interview Preparation

Comprehensive Guide for Django/Python Roles

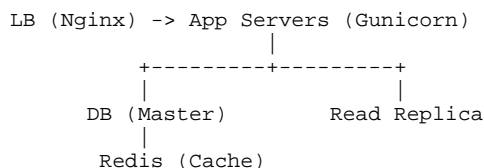
1. Core Python Mastery

- **Data Structures:** Dicts (Hash Maps) are $O(1)$. Lists are Arrays.
- **Generators:** Use ``yield`` for memory-efficient iteration.
- **Decorators:** Modify function behavior (e.g., `@login_required`).
- **GIL:** Why Python threads run on one core (Global Interpreter Lock).

2. Django Internals

- **ORM Opt:** ``select_related`` (SQL JOIN) vs ``prefetch_related`` (Python Join).
- **Middleware:** Request/Response hooks globally.
- **Signals:** Decoupled event notification.

3. System Design & Scalability



Concepts: Sharding, CAP Theorem, Horizontal Scaling.

4. API & Authentication

Stateful vs Stateless: Session vs JWT.

Idempotency: Ensuring repeated requests don't duplicate actions (GET/PUT).

5. Explaining Your Project

Be ready to answer:

? Why use NoSQL (MongoDB) for resumes?

? How does the TF-IDF vectorizer impact memory?

? How would you scale the screening engine?