

- 1. Technical Skills Review
  - Core Python
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- 2. System Design
- 3. Coding Interviews
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  - Resources

Here's a roadmap tailored for your preparation for interviews based on your background and goals:

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# 1. Technical Skills Review

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## Core Python

- Revise Python fundamentals: data types, loops, conditionals, comprehensions.
- Advanced topics: decorators, generators, context managers, multithreading, and multiprocessing.

## Django Framework

- Core concepts: Models, Views, Templates, Middleware.
- ORM: Complex queries, relationships (OneToOne, ForeignKey, ManyToMany).
- Django REST Framework (DRF): Serializers, ViewSets, authentication, and permissions.
- Deployment: Django on production servers (Gunicorn, Nginx).

# Database Skills

- PostgreSQL: Write and optimize complex queries, indexing, and transactions.
- ORMs: Efficient query optimization.
- Work with database migrations.

## Asynchronous Services

- Kafka and RabbitMQ: Understand their architecture, differences, and use cases.
- Celery workers: Task queues, result backend, periodic tasks, and best practices.

## API Development

- RESTful principles: CRUD operations, versioning, status codes, and documentation.
- Security: Authentication, authorization, rate-limiting, and data validation.

## DevOps and Deployment

- Docker: Create and manage containers for your apps.
  - CI/CD: Jenkins, GitHub Actions, or similar tools.
  - Cloud: Familiarize yourself with AWS or GCP basics.
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## 2. System Design

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- Study design patterns: Singleton, Factory, Observer, etc.
  - Scalable system design: Learn to design microservices, databases, caching, and load balancers.
  - Common scenarios: URL shortening, chat applications, or payment gateways.
  - Resources: "System Design Primer" on GitHub, YouTube tutorials, and case studies.
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## 3. Coding Interviews

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# Data Structures and Algorithms

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- Focus Areas:
    - Arrays, Strings, Linked Lists, Stacks, Queues, HashMaps.
    - Trees, Graphs, Dynamic Programming, and Backtracking.
  - Practice on platforms like LeetCode, HackerRank, or CodeSignal.
  - Specifically, solve problems involving iteration counts in loops (your challenge area).
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## 4. Behavioral Interviews

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- Prepare STAR (Situation, Task, Action, Result) stories for:
    - Challenges you've faced.
    - Achievements in your projects.
    - Instances of team collaboration and conflict resolution.
  - Common questions:
    - "Why do you want to switch roles?"
    - "Describe a challenging problem you solved in your current role."
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## 5. Mock Interviews

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- Conduct mock interviews with peers or platforms like Pramp.
  - Request feedback on technical, problem-solving, and communication skills.
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## 6. Networking

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- Update your LinkedIn profile to highlight your skills and experience.
  - Reach out to former colleagues and mentors for referrals and insights.
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## 7. Java and Spring Boot

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Since you're planning to transition into Java and Spring Boot:

- Familiarize yourself with Java basics and the Collection Framework.
  - Begin learning Spring Boot for REST API development and microservices.
  - Implement small projects to demonstrate proficiency.
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## Resources

- **Books:**
    - *Cracking the Coding Interview* by Gayle Laakmann McDowell.
    - *Designing Data-Intensive Applications* by Martin Kleppmann.
  - **Courses:**
    - "Django for Professionals" by William S. Vincent.
    - System design courses on Udemy or Educative.
  - **YouTube Channels:** Tech Dummies, Gaurav Sen for system design.
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Would you like assistance with any specific section or resources for these topics?