

Day 1: Mastering Apache Solr (Phase 1 & Phase 2)

Total Time: 10 Hours

This document provides a structured roadmap to master Apache Solr fundamentals.

Phase 1: Fundamentals & Setup (4 Hours)

Step 1: Install Solr & Start Using It (1 Hour)

Goal: Set up Apache Solr and run your first search query.

Resources:

- Solr Installation Guide: <https://solr.apache.org/guide/solr-tutorial.html>
- Solr Quick Start Tutorial (YouTube): https://www.youtube.com/watch?v=sV_1srs1Z34

Hands-On Tasks:

1. Download and install Solr:

```
wget https://dlcdn.apache.org/solr/solr-9.3.0.tgz
```

```
tar -xzf solr-9.3.0.tgz
```

```
cd solr-9.3.0
```

```
bin/solr start
```

2. Create a new core:

```
bin/solr create -c my_core
```

3. Open Solr Admin UI: <http://localhost:8983/solr/>

Step 2: Solr Architecture & Key Concepts (1 Hour)

Goal: Understand how Solr works internally.

Resources:

- Official Solr Architecture Guide: <https://solr.apache.org/guide/>
- Lucene vs Solr Explained: <https://www.lucenetutorial.com/lucene-vs-solr.html>

Step 3: Index & Query Documents (2 Hours)

Goal: Learn how to add data to Solr and retrieve it using queries.

Resources:

- Solr Query Syntax: <https://solr.apache.org/guide/query-syntax-and-parsing.html>

Hands-On Tasks:

1. Add sample documents:

```
bin/post -c my_core exampledocs/*.json
```

2. Search all documents: http://localhost:8983/solr/my_core/select?q=*:*

Phase 2: Deep Dive into Indexing & Queries (6 Hours)

Step 4: Understanding Schema Design & Field Types (2 Hours)

Goal: Learn how to define field types and their properties in Solr.

Resources:

- Solr Schema Design Guide: <https://solr.apache.org/guide/schema-design.html>

Step 5: Advanced Querying Techniques (2 Hours)

Goal: Master advanced search capabilities like faceting, wildcards, and boosting.

Resources:

- Solr Advanced Querying Guide: <https://solr.apache.org/guide/the-standard-query-parser.html>

Step 6: Full-Text Search & Ranking (2 Hours)

Goal: Understand how Solr ranks results and optimize search relevance.

Resources:

- Solr Relevance & Ranking: <https://solr.apache.org/guide/relevance-tuning.html>