

Technical Specification Document Template

1. Introduction

- **Project Name:** [Enter Project Name]
- **Version:** [Version Number]
- **Date:** [MM/DD/YYYY]
- **Authors:** [List of Contributors]
- **Purpose:** Briefly describe the project's technical aspects.
- **Scope:** Define what this document covers (e.g., architecture, APIs, deployment).

2. System Overview

- **Technology Stack:** List programming languages, frameworks, and tools used.
- **System Architecture:** Provide a high-level architecture diagram and explanation.
- **Key Components:** Describe the main modules and their responsibilities.

3. API Documentation

- **Endpoint:** GET /api/resource
- **Request Parameters:**
 - id (integer) – Required
 - name (string) – Optional

- **Response Example:**

```
{  
  "id": 1,  
  "name": "Example",  
  "status": "Active"  
}
```

- **Authentication & Security:** Describe how authentication and authorization work.

4. Database Schema

- **Database Name:** [Database Name]
- **Tables:**
 - **Users Table:** id, name, email, password, created_at
 - **Transactions Table:** id, user_id, amount, date
- **ER Diagram:** Include a diagram showing table relationships.

5. Deployment and Infrastructure

- **Server Configuration:** Specify OS, CPU, memory requirements.
- **Cloud Setup:** Describe AWS, Azure, or GCP configurations.
- **Deployment Process:** Provide step-by-step deployment instructions.

6. Error Handling & Logging

- **Common Errors:** List potential errors and resolutions.
- **Logging Strategy:** Describe log levels and where logs are stored.
- **Monitoring Tools:** Mention tools used for application monitoring.

7. Performance Optimization

- **Caching Strategies:** Describe caching mechanisms used.

- **Load Balancing:** Explain how requests are distributed.
- **Database Optimization:** Indexing, query optimization techniques.

8. Security Considerations

- **Data Encryption:** How sensitive data is protected.
- **Access Control:** Role-based access control policies.
- **Security Best Practices:** OWASP guidelines, secure coding practices.

9. Troubleshooting & FAQs

- List common issues and solutions.
- Provide links to external resources if necessary.

10. Appendix

- Glossary of technical terms.
- References to related documentation.

This document provides a structured **template** for technical documentation.