**1. Requirement Analysis and Planning (1 Day)**

* Understand the task requirements, objectives, and workflow.
* Plan the code structure, database schema, and file generation logic.

**2. Environment Setup and Configuration (3 Days)**

* Install and configure:
  + **JDK** for Java development.
  + **Tomcat Server** for deployment.
  + **Oracle Database** and set up the ACHHEADER table schema.
* Set up **JDBC** drivers and file directory paths.
* Validate the connectivity between the code, database, and filesystem.

**3. Core Development (6 Days)**

**3.1 ACHCR\_Validation.java (4 Days)**

* Develop database connection logic and query execution.
* Implement the **TimerTask** to schedule file processing every 2 minutes.
* Build methods for:
  + Fetching rows with FILE\_STATUS = 10.
  + Updating FILE\_STATUS and other fields in the database.
  + Handling successful and failed file generation scenarios.

**3.2 ReturnFileGenerator\_seq.java (2 Days)**

* Create methods to:
  + Generate return files dynamically based on ACHHEADER IDs.
  + Ensure directory existence and handle file-writing errors.
* Write reusable methods to manage file operations.

**4. Testing (3 Days)**

**4.1 Unit Testing (1.5 Days)**

* Validate each method independently:
  + Database query execution.
  + File creation logic.
  + Status update queries.
* Use mock database setups if necessary.

**4.2 Integration Testing (1.5 Days)**

* Simulate end-to-end processing:
  + Insert test records into the ACHHEADER table with FILE\_STATUS = 10.
  + Trigger the application and monitor the file generation and database updates.

**5. Debugging and Optimization (2 Days)**

* Address issues from the testing phase.
* Optimize query performance and file I/O operations.
* Add proper exception handling and error logs for troubleshooting.

**6. Documentation and Deployment (1 Day)**

* Write component documentation, deployment guides, and configuration files.
* Package the application into a JAR file.
* Deploy the JAR on the Tomcat server and test in a real-world scenario.

**Effort Summary**

| **Phase** | **Effort (Days)** |
| --- | --- |
| Requirement Analysis | 1 |
| Environment Setup | 3 |
| Core Development | 6 |
| Testing | 3 |
| Debugging and Optimization | 2 |
| Documentation/Deployment | 1 |
| **Total** | **14** |