Infosys Internship Learning Summary

Day 1 (10/11/25)

- **Introduction:** Overview of internship workflow, expectations, and guidelines.
- **Project Allocation:** Assigned the Smart Stock Inventory Optimisation project and responsibilities.

Day 2 (11/11/25)

- **Tech Stack Selection:** Decided on tools like Python, Fast API/Flask, Django, ML. model, and databases.
- **API Basics:** Understood how APIs allow communication between client and server.
- **Postman:** Learned to test and debug APIs using requests and responses.
- **WebSocket:** Understood real-time data exchange through persistent server connection.
- **NumPy:** NumPy is a Python library used for fast numerical operations on large arrays and matrices.
- **Pandas:** Pandas is a Python library that helps you handle, and analyse data using DataFrames.

Day 3 (12/11/25)

- **Fast API:** High-performance Python framework for building fast, modern API.
- **Flask API:** Lightweight Python framework used for simple and flexible API development
- **Pydantic**: Library for validating and converting data using Python models.

Day 4 (13/11/25)

- **GitHub**: Platform for code storage, version control, and team collaboration.
- **git init**
    - Creates a new Git repository in your project folder.

- **git clone <url>**
  - Copies an existing remote repository to your system.
- **git status**
  - Shows changes in your working directory.
- **git add.**
  - Stages all changed files for the next commit.
- **git add <filename>**
  - Stages a specific file.
- **git commit -m "message"**
  - Saves your staged changes with a message.
- **git push origin main**
  - Uploads your commits to the main branch on GitHub.
- **git pull**
  - Downloads and merges the latest changes from the remote repository.
- **git branch**
  - Shows all branches in your repository.
- **git branch <name>**
  - Creates a new branch.
- **git checkout <branch>**
  - Switches to another branch.
- **git merge <branch>**
  - Combines another branch into the current branch.
- **git log**
  - Shows commit history.
- **git remote -v**
  - Shows linked remote repositories.
- **Virtual Environment:** Isolated Python environment to manage project-specific packages.
- **requirements.txt:** File listing all dependencies needed to run the project .

Day 5 (14/11/25)

- **Payload:** The actual data sent in an API request or response.
- **Endpoint:** A specific API URL that performs a defined action.
- **Al Models**: Algorithms that learn patterns from data to make predictions or decisions.
- **Types of Machine Learning:** Supervised, unsupervised and reinforcement learning approaches.
- Llama Model: A large language model useful for NLP and text-generation tasks

Day 6 (16/11/25)

- **Database Concepts**: Learned tables, keys, relationships, and data storage principles.
- **Normalisation:** Process of organising data to reduce redundancy and improve consistency.
- **1NF-First Normal Form**: Data is organised so each column has atomic values and no repeating groups.
- **2NF-Second Normal Form:** The table is in 1NF and every non-key column depends on the primary key.
- **3NF Third Normal Form**: Table is in 2NF and has no transitive dependencies (non-key fields don't depend on other non-key fields).
- **BCNF - Boyce Codd Normal Form**: Stronger version of 3NF where every determinant must be a candidate key.
- **4NF-Fourth Normal Form:** Table must not contain a multivalued dependency.
- **5NF-Fifth Normal Form**: Data is broken into tables to avoid join dependency issues.
- **PostgreSQL vs MySQL:** PostgreSQL is feature-rich and strict, and MySQL is simpler and faster for basic use.
- **Vector Databases:** Databases that store embeddings for Al search, similarity, and recommendations.

Day 7 (17/11/25)

- **GitHub Repository:** A centralised place to store and manage version-controlled project code.
- **Project Review:** Evaluated current project progress and clarified next development steps.