Part 1

System Design Assignment(Spring/Django)

Overview

You are required to design and develop a **System Design Project** using either **Django (Python)** or **Spring Boot (Java)**.

Choose **one** topic from the list below and implement a complete end-to-end system covering all the listed key requirements.

Your project should demonstrate a strong understanding of **backend design, modular architecture, database modeling, and testing**.

You are allowed to use any LLMs to improve your submission, the final submission must not contain any AI elements.

Topics & Requirements(*Choose any one of three*)

Topic 1 – Restaurant Waitlist System

1. Add and manage waitlist entries (customer name, party size, phone number, and status).
2. Match customers to available tables intelligently based on size and availability.
3. Notify users when their table is ready.
4. Support multiple hosts/devices managing the same restaurant in real-time.
5. Track analytics like average waiting time and number of no-shows.

Topic 2 – E-commerce Checkout System

1. Manage cart functionality and apply coupons or discounts.
2. Process orders with support for multiple payment methods.
3. Maintain stock consistency and handle inventory updates.
4. Generate invoices and detailed order summaries.
5. Manage order status transitions (placed, shipped, delivered).

Topic 3 – Blogging Platform

1. Implement user authentication and role-based access (Admin, Author, Reader).

2. Allow users to create, edit, delete, and publish blog posts.
3. Add a commenting system with moderation capability.
4. Include post interaction features like likes, shares, and analytics.
5. Provide tagging and keyword-based search for blog posts.

Submission Instructions

You must submit **one GitHub repository** containing your complete **Spring Boot or Django project**.

Your submission must include:

- **Full implementation** of all functionalities defined for your chosen topic.
- **At least 2 unit test cases per functionality**, written in a dedicated **unit test file**.
- A well-documented **README.md** file that includes:
    - Step-by-step instructions to **set up and run** the project locally.
    - Clear guidelines on **how to execute all the test cases**.
    - Any **dependencies or environment variables** required to run the project.

Evaluation Criteria

Your project will be evaluated on the following parameters:

1. **Completeness** – All requirements implemented.
2. **Code Quality** – Clean, modular, and readable code.
3. **Testing** – Properly written and executed unit tests.
4. **Documentation** – Clear and detailed README with setup and usage instructions.
5. **Design Thinking** – Logical system design, API structure, and data modeling.

Part 2

- Article for review: For Review_ Strings in Java

Steps to follow:

Submission 1-> Overall Feedback:

- Refer to this Google Sheet - Guidelines on how to review an article
- Make your personal copy of this Google Sheet, and fill your overall ratings in Column E (using the instructions given in Column F, rows 8-11)

Submission 2-> In-Document Comments:

1. Make a Google Doc Copy of your chosen article for your personal use
2. Add comments within your copy of the Doc by choosing from the menu bar: **Insert > Comment > Add your comments wherever applicable in the article**
3. The comments/suggestions you give should be actionable -
    a. Instead of simply pointing out that something is incorrect or an example is poorly written, give specific pointers on how it can be corrected or improved.
    b. Once you have reviewed, submit the Google Doc and Google sheet (your copies with editing access given to "anyone with the link").
4. Paste the submission 1 sheet link at the bottom of the submission 2 document, with permission to edit access given to "anyone with the link")

Submission Info

How to submit?

- Part1: Final submission for Part 1 will be a **GitHub link**.

- Part 2: Final submission for Part 2 will be a **Google Docs link**, containing the reviewed doc with comments and a Sheet with filled data at the bottom. [ReferSubmission 1 and 2 in Part 2]