

Software Architecture skill test

For a developer at Versatyle, it is essential to be able to design a software architecture before starting development on new ideas and applications. This assignment aims to test your ability to make a high-level design of a new software application.

For this assignment, you will be working on a conceptual application known as the Portal. This application serves as a platform for both customers and Versatyle consultants to access, modify, and manage essential data related to a data migration project. Additionally, the Portal facilitates tracking the progress of the migration process. You can find the detailed requirements for the Portal in the Requirements section of this assignment.

Please try to complete the design in approximately 30 minutes. When you are finished, you can send the deliverables to info@versatylegroup.com

Objective

Create a high-level software architecture for a new application based on provided requirements and explain the architecture diagram in text.

Requirements

The development of the application must follow these requirements:

1. User Interface and Access Control:

- Implement a portal interface where users can view and edit spreadsheets.
- Ensure that access to these spreadsheets is role-based, allowing different sets of spreadsheets to be visible and/or editable based on the user's role.
- Develop functionality within the portal to create and manage projects for multiple customers.

2. Data Security:

- Ensure that all data, including spreadsheets, are stored in a secure environment, adhering to best practices in data protection and compliance standards.

3. System Architecture:

- Design the system architecture to be scalable, supporting an increasing amount of data and users without performance degradation.
- Ensure the architecture is maintainable, facilitating easy updates and modifications without significant downtime or rework.

4. Data Visualization (advanced):

- Incorporate a feature within the portal for data visualization, such as the ability to generate and display Sankey diagrams, enhancing the analytical capabilities of the platform.

Deliverables

- 1. High-Level Software Architecture Diagram:** Provide a visual representation of the proposed architecture. Include components, interfaces, and interactions. You can draw this using online software like draw.io or just draw something by hand.
- 2. Explanation of the Architecture:** Provide an explanation of the architecture diagram. Explain how each component works, how they interact with each other, and how they fulfill the given requirements.

Note: Your deliverables should be sufficiently detailed and clear, so that they can be used to create features on a backlog.