

## **Assignment No 1**

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Course: Software Design Architecture

### **Repository architecture:**

Repository architecture is a design pattern that separates the data access layer from the rest of the application, providing a standardized interface for accessing data. This interface is typically implemented as a repository class, which encapsulates the logic for accessing and manipulating data. The repository class provides a set of methods that can be used to retrieve, update, and delete data, regardless of the underlying data source.

One of the key benefits of repository architecture is that it promotes abstraction of data access logic. By encapsulating the data access logic in a separate class, developers can hide the details of data access from the rest of the application. This means that the application can be designed to work with a specific data source, but can easily be adapted to work with a different data source without changing the application code.

Another benefit of repository architecture is improved testability. By abstracting the data access logic, developers can write unit tests for the application code without having to worry about the details of data access. This means that developers can test the application code in isolation, without having to set up a database or other data source.

### **Success of Repository architecture:**

A success of software using repository architecture is the popular content management system (CMS) WordPress. WordPress uses repository architecture to manage its database interactions, which allows it to be highly flexible and scalable. As a result, WordPress powers over 40% of all websites on the internet, demonstrating its success in handling diverse use cases and large-scale applications.

### **Failure of Repository architecture:**

However, a failure of software using repository architecture is the Healthcare.gov website, which experienced significant issues during its initial launch in 2013. The website's architecture, including its repository implementation, was criticized for being overly complex and poorly designed. This led to performance issues, data inconsistencies, and a negative user experience. The primary reason for the failure was insufficient planning, testing, and development, which resulted in a poorly implemented repository architecture that could not handle the high user traffic and data requirements.

### **Reason of Success and Failure:**

In summary, the success of WordPress can be attributed to its well-designed repository architecture, which enables it to manage a vast number of websites with varying requirements. On the other hand, Healthcare.gov's failure can be traced back to a poorly implemented repository architecture, which resulted in performance issues and data inconsistencies.

### **Location of Success and Failure:**

In terms of location, WordPress is successful worldwide, with a significant presence in the United States, Europe, and Asia. Its repository architecture allows it to handle diverse languages, cultures, and user needs, making it a popular choice for websites of all sizes and types. In contrast, Healthcare.gov's failure was specific to the United States, where it was launched to provide a federal health insurance marketplace. The website's issues were widely publicized, leading to negative publicity and public distrust in the government's ability to implement large-scale technology projects.

### **Video Link:**

[https://drive.google.com/file/d/1dLEaG6j6xJDjgMIiA6yLR-Gkg17q9S3/view?usp=drive\\_link](https://drive.google.com/file/d/1dLEaG6j6xJDjgMIiA6yLR-Gkg17q9S3/view?usp=drive_link)