

Homework 1 - Fundamentals of Mobile Development (Mobile Architecture)

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1. Model-View-Controller (MVC):

- **Description:** Separation of business logic (Model), user interface (View), and control logic (Controller).
- **Application:** Useful for organizing code and facilitating maintainability.

2. Model-View-ViewModel (MVVM):

- **Description:** Similar to MVC but with a special focus on separating view logic and presentation logic through a ViewModel.
- **Application:** Especially effective when working with frameworks that support data binding, such as Android with Jetpack.

3. Singleton:

- **Description:** Ensures that a class has only one instance and provides a global point of access to that instance.
- **Application:** Useful for managing shared resources, such as a local database or a network service.

4. Observer:

- **Description:** Defines a one-to-many dependency between objects, so that when one object changes state, all its dependents are notified and updated automatically.
- **Application:** Useful for implementing real-time updates, such as notifications or data updates.

5. Facade:

- **Description:** Provides a unified interface for a set of interfaces in a subsystem, simplifying complexity.

- **Application:** Can be used to simplify interactions with complex services or modules.

6. **Adapter:**

- **Description:** Allows incompatible interfaces to work together.
- **Application:** Useful when integrating new features or libraries into an existing application.

7. **Prototype:**

- **Description:** Creates new objects by copying an existing object, known as the prototype.
- **Application:** Useful when there is a need for creating complex and costly objects.

8. **Builder:**

- **Description:** Separates the construction of a complex object from its representation, allowing the creation of different representations.
- **Application:** Useful when working with objects that have multiple possible configurations.