Fundamentals of Software Design Unit 2

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Abstract

Select design patterns for different requirements and provide detailed UML diagrams for each one.

Required to Re-use previous interface object class. Adapter Pattern for design lies within the structural pattern and will be used because it will allow us to combine the capabilities of the old interface on the website with the features and uses of the new interface on mobile platforms.

Diagram

Description automatically generated

The decision to use the Adapter Pattern to impliment the creation of the mobile interface was an easy one as it would allow us to use what was already present in ABCD Companies Website. Integrating these attributes into a mobile interface would allow the users to freely access the features and security measures already in place on the website while on mobile devices.

Required to notify all interfaces when new data is implimented on the server. Observer pattern for design lies within the Behavioral Patterns category and will be used because it will allow us to send notifications to all interfaces when changes are made to the data stored on the server.

Diagram

Description automatically generated

Using an Observer Pattern to update the database of ABCD Companies server allows the use of cloud services to update and display the proper numbers for figures within the database. Anything entered or adjusted on either the mobile platform or the website is updated on both platforms simultaniously to ensure clarity of resources available.

Requirement for support of multiple operating systems for mobile platforms. The Factory Pattern will be utilized in this instance to streamline interface unity between operating systems. Factory Pattern falls under the creational Pattern design and allows forcreation logic using common interface elements.

Diagram

Description automatically generated

Using the Factory Pattern to allow for unified interface with differing Operating Systems was an easy choice. Due to the simplicity of the Factory Pattern, it allows us to create a interface and then just port that interface onto each operating system individually as users utilize the mobile platform.

Resources

*Design Pattern—Factory Pattern—Tutorialspoint*. (n.d.). Retrieved April 12, 2021, from <https://www.tutorialspoint.com/design_pattern/factory_pattern.htm>

*Design Patterns—Adapter Pattern—Tutorialspoint*. (n.d.). Retrieved April 12, 2021, from <https://www.tutorialspoint.com/design_pattern/adapter_pattern.htm>

*Design Patterns—Observer Pattern—Tutorialspoint*. (n.d.). Retrieved April 12, 2021, from <https://www.tutorialspoint.com/design_pattern/observer_pattern.htm>

*MUSE Content for Software Design Methods*. (n.d.). Retrieved April 12, 2021, from <https://class.ctuonline.edu/_layouts/MUSEViewer/MUSE.aspx?mid=19706627>