Chapter 20

Exploring Best Practices in Mobile App Design Patterns and Tools:
A User–Centered Approach

Rajesh Kanna Rajendran
CHRIST University (Deemed), India

Mohana Priya T.
CHRIST University (Deemed), India

ABSTRACT

Design patterns are reusable solutions to common design problems that provide a consistent user experience across different apps. This article explores the best practices in mobile app design patterns and tools with a focus on the user-centered approach to design. Design patterns such as navigation bars, tab bars, list views, and card views are discussed, along with design tools such as Sketch, Figma, Adobe XD, and InVision. The problem is to ensure that mobile app design is centered around the needs and preferences of the user, rather than the designer or the technology, and that the right design patterns and tools are used to create interfaces that are familiar and easy to use. The chapter emphasizes the importance of conducting user research to understand the needs and preferences of the target audience and using design patterns and tools to create interfaces that are familiar and easy to use. Mobile apps have become an integral part of our lives, and designing a successful mobile app is a challenging task that requires a thorough understanding of user needs and preferences.

INTRODUCTION

Mobile app design has come a long way since the first iPhone was released in 2007. With the rise of mobile technology, app design has become an essential part of our daily lives. According to Statista, there were 218 billion app downloads in 2020 alone, and this number is expected to grow in the coming years. As the number of mobile apps continues to increase, it is crucial for designers to explore best practices in mobile app design patterns and tools to ensure user satisfaction and retention. In this chapter, we will explore the importance of a user-centered approach in mobile app design, as well as the benefits of incorporating best practices and tools in the design process (Feng et al. 2012).

Mobile app development design patterns refer to best practices and reusable solutions for common problems that arise during the development of mobile applications. Here are some common design patterns used in mobile app development:

Model-View-Controller (MVC): This pattern separates the app into three components - model (data and business logic), view (user interface), and controller (handles user input and interacts with the model).

Singleton: This pattern ensures that only one instance of a class exists in the app at a time. It is often used for creating shared resources like databases or network managers.

Observer: This pattern allows objects to be notified when a particular event occurs. For example, a view controller can be notified when a data model change.

Factory: This pattern provides a way to create objects without specifying their exact class. It is useful for creating objects that belong to different classes but share common properties.

Adapter: This pattern allows incompatible classes to work together by creating a bridge between them. For example, an adapter can be used to display data from a database in a table view.

Delegate: This pattern allows one object to delegate tasks to another object. For example, a table view delegate can be used to handle user interaction with the table view.

Strategy: This pattern allows an algorithm to be selected at runtime based on user input or other factors. It is often used for handling different user input scenarios.

Facade: This pattern provides a simplified interface to a complex subsystem. For example, a facade can be used to provide a simple API for accessing complex network services.

Command: This pattern encapsulates a request as an object, allowing it to be stored and executed at a later time. It is useful for implementing undo/redo functionality.

8 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: www.igi-global.com/chapter/exploring-best-practices-in-mobile-app-design-patterns-and-tools/322080

Related Content

Factors Influencing Students' Continuance Intention Toward Usage of E-Learning Systems in Tanzania: The Hybrid of ECM and ISSM Models
Deogratius Mathew Lashayoand Julius Raphael Athuman Mhina (2022). *International Journal of Mobile Devices, Wearable Technology, and Flexible Electronics (pp. 1-20).*
www.irma-international.org/article/factors-influencing-students-continuance-intention-toward-usage-of-e-learning-systems-in-tanzania/311431

Coherent Passive Backscatter Communications Using Ambient Transmitters
William C. Barottand Kevin M. Scott (2014). *International Journal of Handheld Computing Research (pp. 23-43).*
www.irma-international.org/article/coherent-passive-backscatter-communications-using-ambient-transmitters/124958

A Personal Handheld Device to Support People with Life-Threatening Anaphylactic Allergies (PervaLaxis)
Luis U. Hernandez Munozand Sandra I. Woolley (2010). *International Journal of Handheld Computing Research (pp. 64-78).*
www.irma-international.org/article/personal-handheld-device-support-people/39053

Performance Evaluation of Multimedia Traffic Transmission Under Binomial and Poissonian Primary Traffics in Cognitive Radio Networks
Abdelaali Chaouband Elhassane Ibn-Elhaj (2012). *International Journal of Mobile Computing and Multimedia Communications (pp. 87-105).*
www.irma-international.org/article/performance-evaluation-multimedia-traffic-transmission/69535

The Urban Communication Infrastructure: Global Connection and Local Detachment
Susan Druckerand Gary Gumpert (2011). *ICTs for Mobile and Ubiquitous Urban Infrastructures: Surveillance, Locative Media and Global Networks (pp. 48-66).*
www.irma-international.org/chapter/urban-communication-infrastructure/48344