

## Reactive And Concurrency-Based Image Resource Management Module for IOS Applications

**Authors :** Shubham V. Kamdi

**Abstract :** This paper aims to serve as an introduction to image resource caching techniques for iOS mobile applications. It will explain how developers can break down multiple image-downloading tasks concurrently using state-of-the-art iOS frameworks, namely Swift Concurrency and Combine. We will explain how developers can leverage SwiftUI to develop reactive view components and use declarative coding patterns. Developers will learn to bypass existing built image caching systems by curating the procedure to implement a swift-based LRU cache system. The paper will provide a full architectural overview of a system, helping readers understand how mobile applications are designed professionally. It will also cover technical discussion, helping readers understand the low-level details of threads and how they can switch between them, as well as the importance of the main and background threads for requesting HTTP services via mobile applications.

**Keywords :** Main thread, background thread, reactive view components, declarative coding

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