

An Android Bitcoin Wallet Application

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I would like to build a Bitcoin wallet application for Android smartphones. This application would provide a safe way for Android users to interface with the Bitcoin blockchain while providing them with information that they need in order to make a purchase using bitcoin. This would include providing live price data of bitcoin so they can convert into their chosen fiat currency in order to make sure they're not over or underpaying for products as well as providing a level of security so that even if someone else were to use their phone they wouldn't be able to make purchases without the users authorisation.

Keywords: Mobile Application, Blockchain, Bitcoin

1 To Produce

A mobile application that allows users to send and receive Bitcoin while also providing live Bitcoin price information to the user to advise them in paying the correct amount of Bitcoin for any given purchases.

2 Method of Approach

Agile	Software development process
Kotlin with Android SDK	For developing the front-end application
BitcoinD	To provide a JSON-RPC interface to the Bitcoin blockchain
Go	For developing the back-end API wrapper for BitcoinD
Git and Github	Development source control and hosting

3 Learning Requirements

- Learn how to provide a secure connection to the Bitcoin blockchain from my android application using the Bitcoin JSON-RPC
- Learn Go to write efficient back end code
- Improve on my current knowledge of Android development by learning Kotlin in order to build a modern Android application codebase

4 Potential Risks and Courses of Action

- Loss of project codebase - I am going to be using Github for repository hosting. By committing to the repository on a regular basis I will have a stream of backups I can revert to if there is an issue.
- Hardware failure - In the event of a hardware failure I will move development to my laptop or utilise the university labs in order to complete my project while using the android simulator as a test-bed.
- Difficulty meeting all of my learning requirements - If I have difficulty meeting my learning requirements, I will have to more intently focus my research on functionality of the application I'm struggling the most with.
- Congestion in the Blockchain slows the development process - I will be using the Bitcoin test-net for the development of my application which is purely designed for the testing and debugging of blockchain interfacing applications. In the event that blockchain becomes congested the test-net should remain fast enough to develop with as it contains no real money and just consists of developers reading and writing dummy transactions