GitHub Username: lubovaskov

Crypto Manager

Description

This app is a mobile client for https://coinmarketcap.com/. It gives you easy access to current information about the price and other data for any chosen cryptocurrency and the crypto market as a whole. The app saves this information in a database, so it can be accessed even when offline.

Intended User

This app is intended for crypto enthusiasts and cryptocurrency market participants.

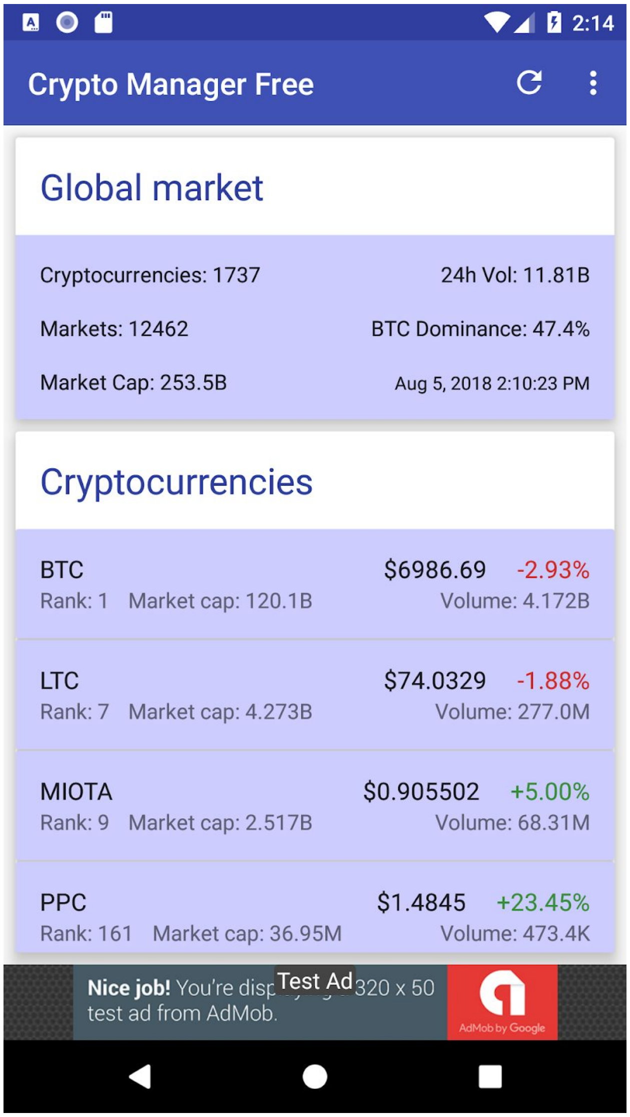
Features

- Allows the user to view information about every cryptocurrency, registered on coinmarket.com

- Saves the state of the chosen cryptocurrencies and the market as whole in a database, to enable offline access
- Shows price information about 5 top cryptocurrencies in a widget for easy access from the home screen
- Downloads recent information automatically at a predefined interval of time

User Interface Mocks

Screen 1 - Main screen



Crypto Manager Free

Global market

Cryptocurrencies: 1737 24h Vol: 11.81B

Markets: 12462 BTC Dominance: 47.4%

Market Cap: 253.5B Aug 5, 2018 2:10:23 PM

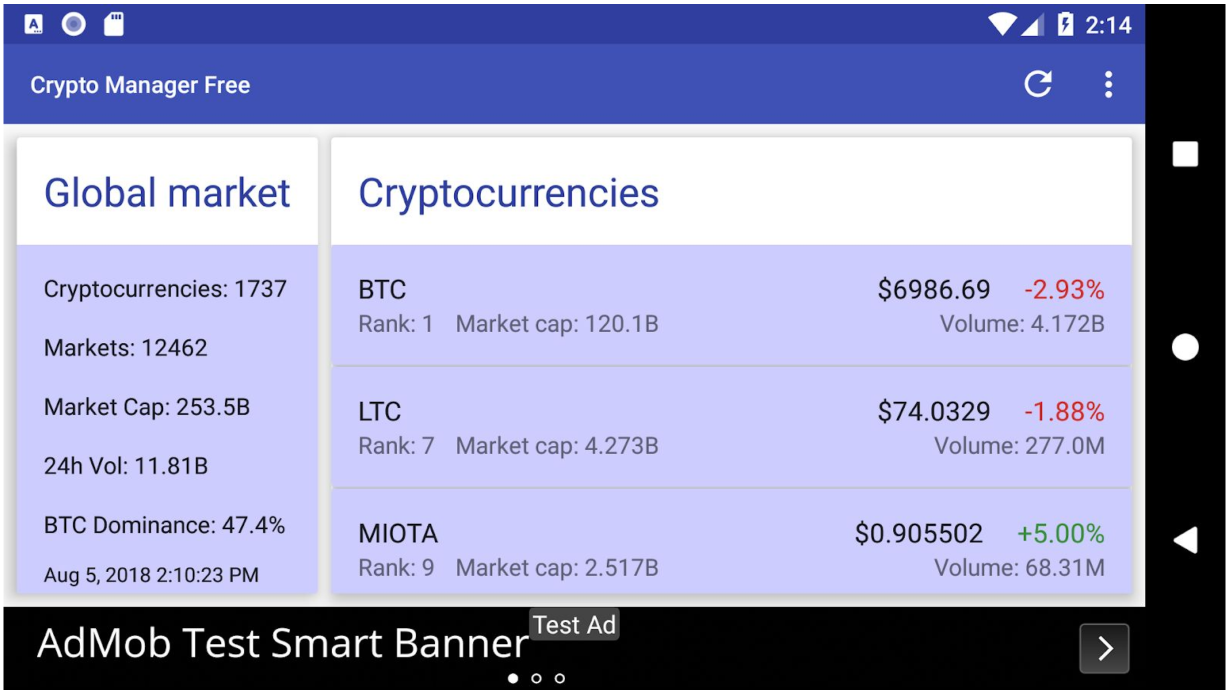
Cryptocurrencies

BTC $6986.69 -2.93%
Rank: 1 Market cap: 120.1B Volume: 4.172B

LTC $74.0329 -1.88%
Rank: 7 Market cap: 4.273B Volume: 277.0M

MIOTA $0.905502 +5.00%
Rank: 9 Market cap: 2.517B Volume: 68.31M

PPC $1.4845 +23.45%
Rank: 161 Market cap: 36.95M Volume: 473.4K



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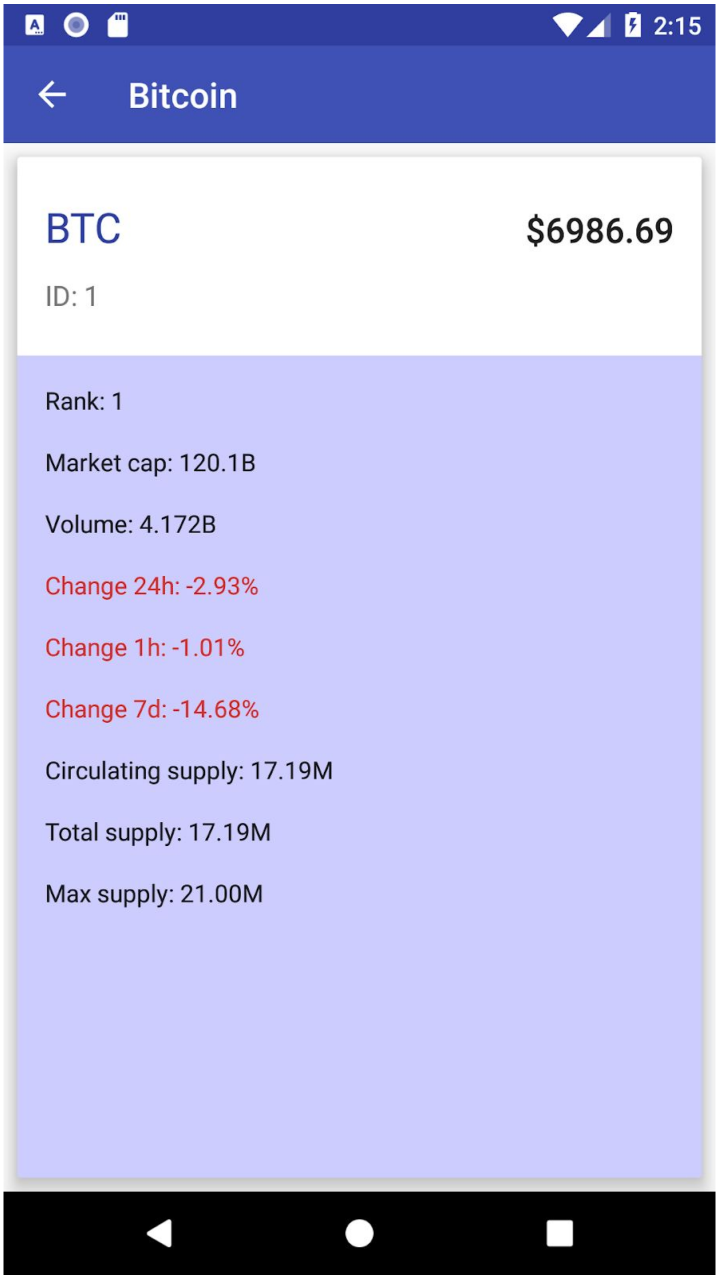
This is the main screen of the app. It shows when the information was refreshed, data about the global cryptocurrency market and basic data about the chosen cryptocurrencies. The user can force a refresh of the data by the refresh button, add and delete listings by the context menu in the top right corner.

Screen 2 - Listing details



Bitcoin

BTC

$6986.69

ID: 1

Rank: 1

Market cap: 120.1B

Volume: 4.172B

Change 24h: -2.93%

Change 1h: -1.01%

Change 7d: -14.68%

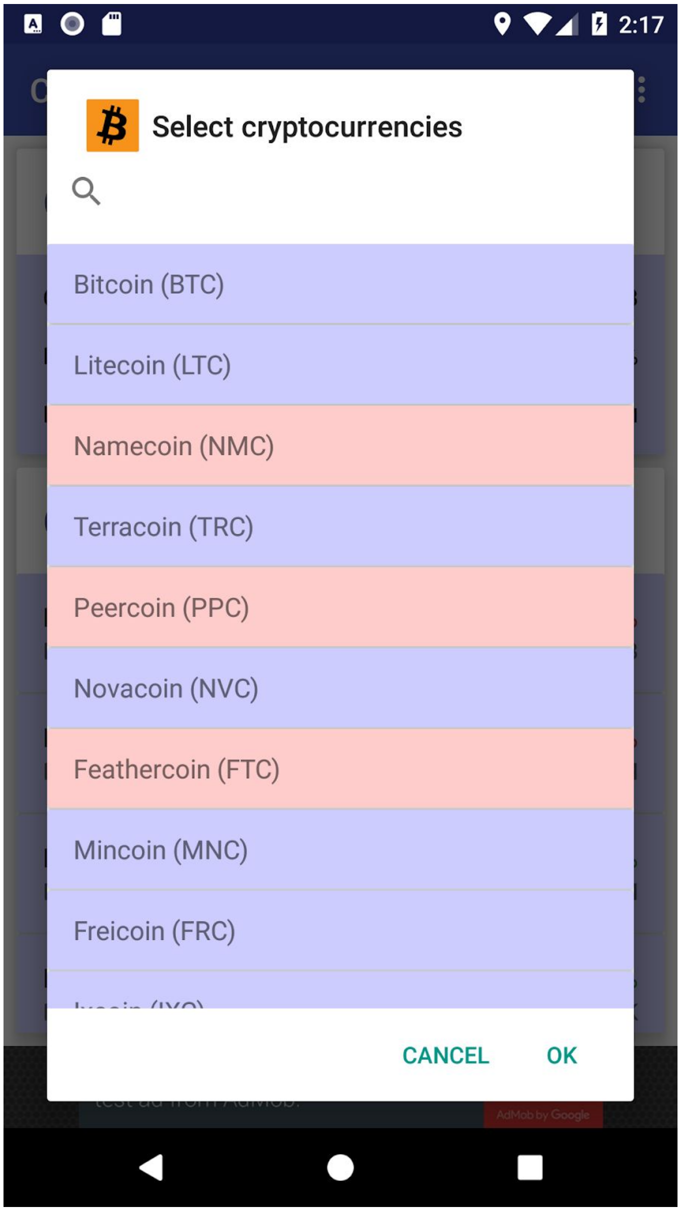
Circulating supply: 17.19M

Total supply: 17.19M

Max supply: 21.00M

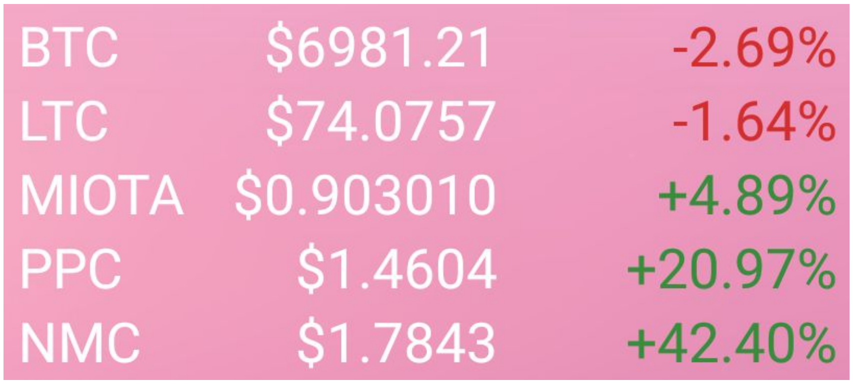
The user can see full details about a chosen cryptocurrency in this screen. It can be shown by tapping on a cryptocurrency listing from the list in the main screen.

Screen 3 - Add new listings



The user can add new listings of cryptocurrencies through this screen. The list can be filtered by typing a part of a cryptocurrency name in the filter field.

App Widget



BTC	$6981.21	-2.69%
LTC	$74.0757	-1.64%
MIOTA	$0.903010	+4.89%
PPC	$1.4604	+20.97%
NMC	$1.7843	+42.40%

Key Considerations

The app will be implemented using Java language. It keeps all strings in a strings.xml file and enables RTL layout switching on all layouts. The app supports accessibility by enabling D-pad navigation on all screens.

It will use the following versions of tools and libraries:

- Android Studio - 3.1.3
- Gradle - 4.4
- Android Support Library - 26.1.0
- Espresso Test Library - 3.0.2
- Google Analytics - 16.0.1
- Google AdMob - 15.0.1
- Firebase Job Dispatcher - 0.8.5
- Butterknife - 8.8.1
- Retrofit 2 - 2.3.0
- Material Values - 1.1.1

How will your app handle data persistence?

The app will store information, downloaded from coinmarket.com, in a SQLite database, accessible by a content provider.

Describe any edge or corner cases in the UX.

- The user can filter the list of all cryptocurrencies by entering a part of a cryptocurrency name in the search field.

- The list of all cryptocurrencies is sorted by rank.
- The user can see full details for a cryptocurrency if he clicks on it in the main list.
- The user can enter “multi-select mode” in the main list by long clicking on an item. This enables the action for deleting the selected cryptocurrencies from the database

Describe any libraries you’ll be using and share your reasoning for including them.

- Retrofit 2 to communicate with coinmarketcap.com.
- Butterknife to reduce boilerplate code.
- Firebase JobDispatcher for scheduling automatic jobs.
- Material Values for applying Material Design principles.

Describe how you will implement Google Play Services or other external services.

- The app will be developed in two flavors - free and paid version. The free version will display ads by using Google AdMob Service.
- The app will use Google Analytics Service to measure user activity

Next Steps: Required Tasks

Task 1: Project Setup

- Create a new Android project.
- Research and setup libraries to use.
- Review coinmarketcap.com REST API and choose which endpoints to call.
- Setup project flavors to enable building of free and paid versions of the app.

Task 2: Implement UI for Each Activity and Fragment

Build the following UI elements:

- BaseMainActivity, containing the core UI of the app, showing a list with important information about the selected cryptocurrencies
- MainActivity in the free flavor, inheriting BaseMainActivity, adding ads by AdMob.
- AddListingsDialogFragment, allowing the user to select cryptocurrencies, for which data will be downloaded and saved
- TickerDetailsActivity, showing detailed information about a cryptocurrency

Task 3: Design data classes

- Design a POJO for every entity, received from coinmarketcap.com

Task 4: Implement a client for communication with coinmarketcap.com

- Design a Retrofit 2 interface, to describe coinmarketcap.com REST API
- Implement response handlers to receive and process data

Task 5: Implement a persistence mechanism

- Implement a SQLite database to store downloaded data
- Implement a content provider to read and write data to the database

Task 6: Implement automatic refresh of data

- Implement a Firebase JobService to schedule regular downloading of current data and saving it to the SQLite database

Task 7: Implement a home screen widget

- Implement a home screen widget, showing price information about the top 5 cryptocurrencies on the home screen, ordered by rank. The widget should be updated when new data is downloaded by the automatic refresh job service or manually by the user.

Task 8: Implement screen tracking

- Implement a Google Analytics tracker to track the opening of every screen