DELOCK USER MANUAL

Project Title: Delock – decentralized rental platform

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1. Introduction

Delock is a decentralized rental application for Android, the goal of Delock is to provide a trustless, secure and transparent platform where individuals or businesses can rent their property.

Delock is built on top of the Ethereum platform, the unique selling point of Ethereum in comparison to the like of Bitcoin and Lite-coin is the ability of the Ethereum platform to host smart contracts and its EVM (Ethereum Virtual Machine) which allows for the execution of code out on the network.

This document will detail the technical requirements of the project and outline the steps needed to download, install and run the application, either as a developer or a user.

This application is in very early stages of development and may be unstable depending on your setup, more details below.

2. Installation

A. Developers:

Installation of the project is relatively straight-forward.

Software Requirements:

- Android Studio
  - o Android studio will prompt for installation of any missing SDKs or tools.
- Truffle & TestRPC
  - o If you intend to test the application, you will need to install the truffle framework to run the contract tests.
  - o As well as this you will need a TestRPC or Parity installation, TestRPC will create a local network with several test accounts.
  - o Parity is a full Ethereum node, it will install in a fraction of the time it takes nodes like Geth (May still take several hours) to install and will give you access to the public Ethereum networks.
- Web3j cli-tools
  - o Required for auto-generation of java smart contract wrappers.

Mobile Requirements:

- Android device or Emulator (minimum SDK version 23)
- NFC functionality (Not currently necessary – feature not yet implemented)

Notes for Developers:

How to use the wrapper generation script:

"> Solc_wrap <contract name e.g. "Rental">"

Will generate the new wrappers in the smart contracts directory in "app/src/main/java/.../smartcontract_wrappers"

B. Users:

1. Navigate to the following link:

   https://gitlab.computing.dcu.ie/mcadamm4/2018-ca400-mcadamm4/tree/master/src/apk

2. Sign in to your computing.dcu GitLab account.
3. Download the following file "apk/app-debug.apk"
4. After download, navigate to the file location in the devices Downloads folder.
5. Click the file, a prompt will appear to install.
6. Click "Install".
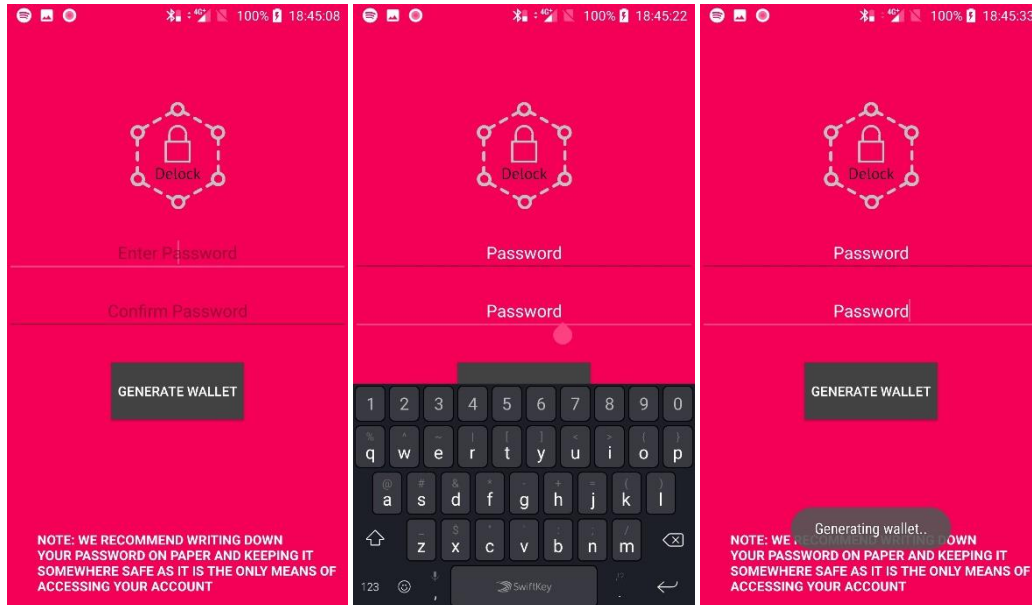7. The application will begin installation and should be available in your application tray upon completion.

3. Usage Instructions

In this section we will break down in detail how to use the application and navigate the User Interface effectively.
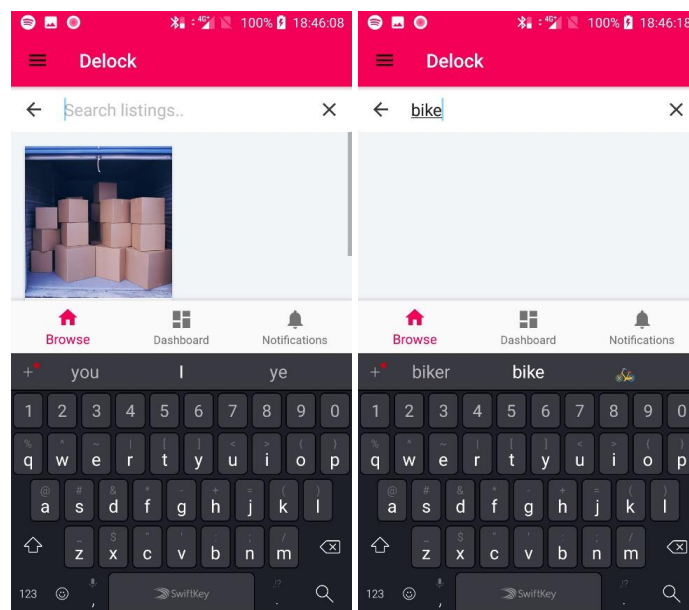
A. First start setup

- Launch the application for the first time.
- Choose a password and enter it into both text boxes making sure they match.
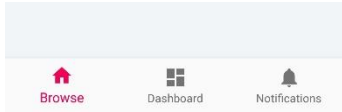- Click the "Generate Wallet" button

B. Search

- Tap somewhere on the search-bar.
- Enter a query.
- Results are updated dynamically as you type.
- Press back button or tap somewhere on the screen to hide the keyboard.
- Make a selection.

C. Navigation Bar - Explained

- Browse Screen – These are all of the listings that exist on the system.

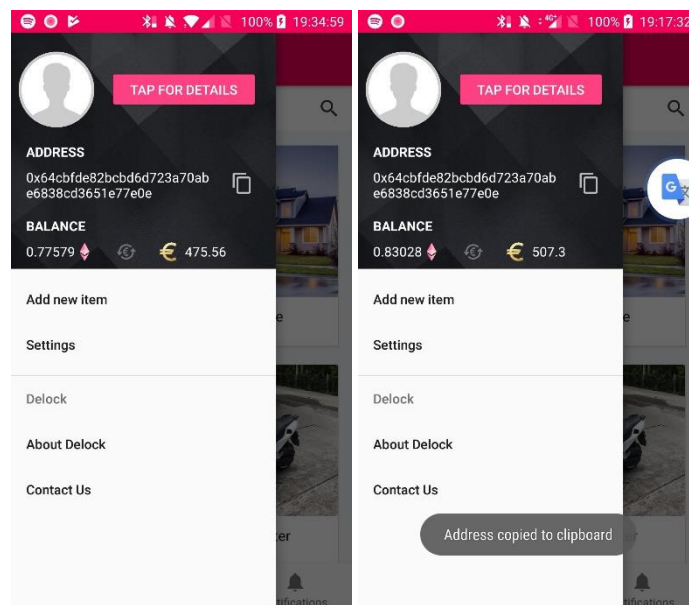- Dashboard Screen (Incomplete) – These are listings that you own or that you are renting

- Notifications Screen (Incomplete) – Shows notification regarding state changes to your items e.g. (Item was rented; Item was returned).
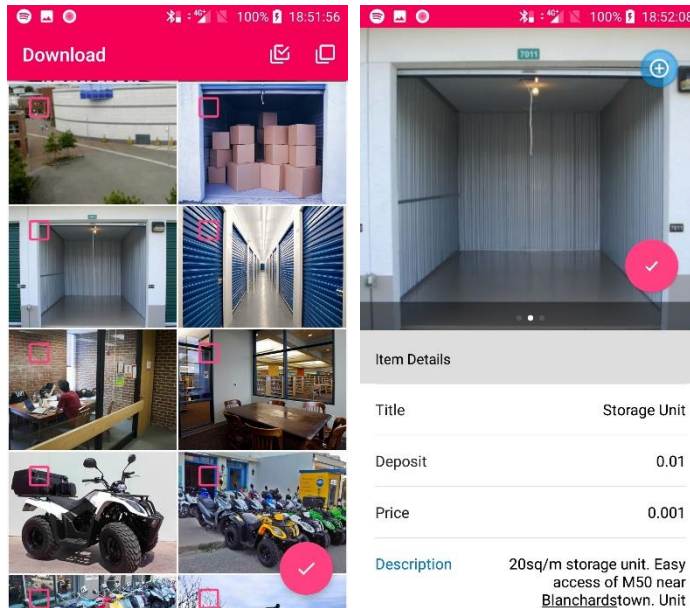

D. Drawer Overlay - Explained

- Click the menu button in the top left corner or simply swipe your finger across the screen to the right to open the drawer
- Can be closed again by swiping in the opposite direction or tapping on the faded part of the screen.
- Contents:
    - "Address" – Your address is the reference to your account, it is what people / entities will use to send you money.
    - Tap for details Button – More information about your address.
    - Paper Icon – Click this to copy your address to the device clipboards
    - Balance – Current address balance shown in Ether and Euro
    - Menu Items
        - Add New Item
        - Settings
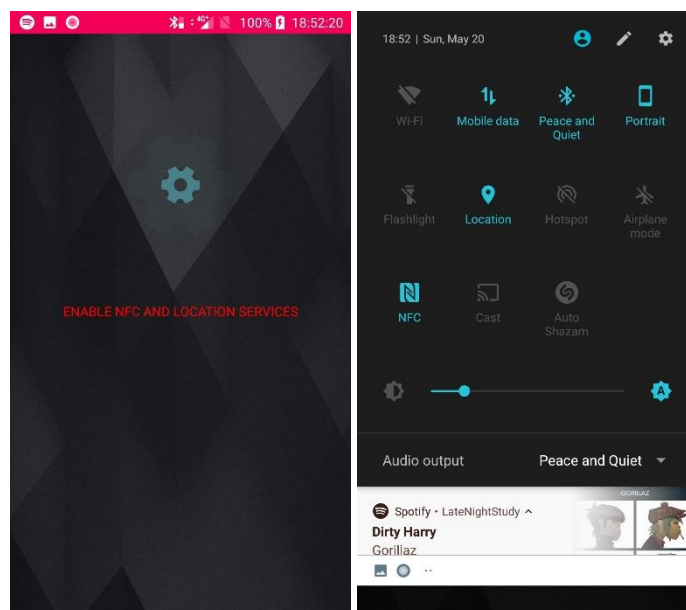   - About Delock
        - Contact Us

E. Add New Item (Already have drawer opened)

- Select "Add new Item" menu option
- To add Images (At-least one required)
  - ○ Click the small blue circular button in the top right hand side of the screen
  - ○ Locate the image you wish to supply to the new item creation
  - ○ Check the small pink box on the image.
  - ○ If the image opens in full screen, click the back button.
  - ○ Select up to 3 images
  - ○ To confirm, click the large pink floating button at the bottom right-hand side of the screen.
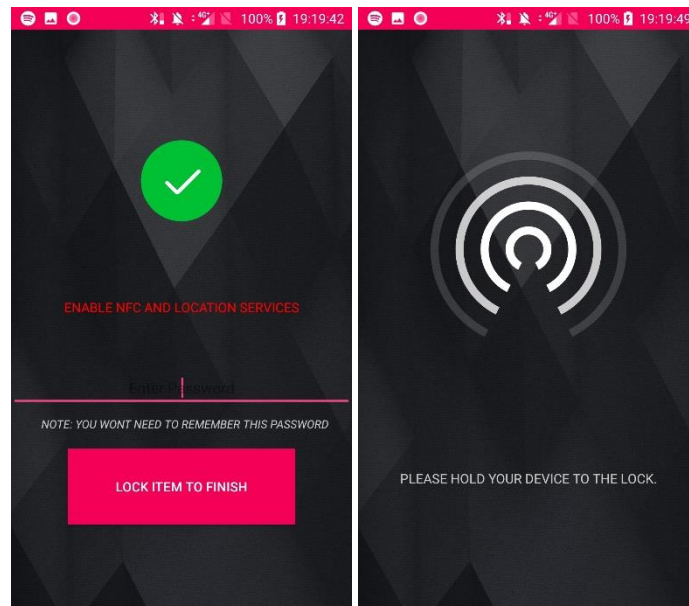

- Click the title text box to add a title for the item.
- Add a deposit amount in Ether.
- Add a price per hour amount in Ether.
- Add a description for the item e.g. (Condition, Age, details etc.).
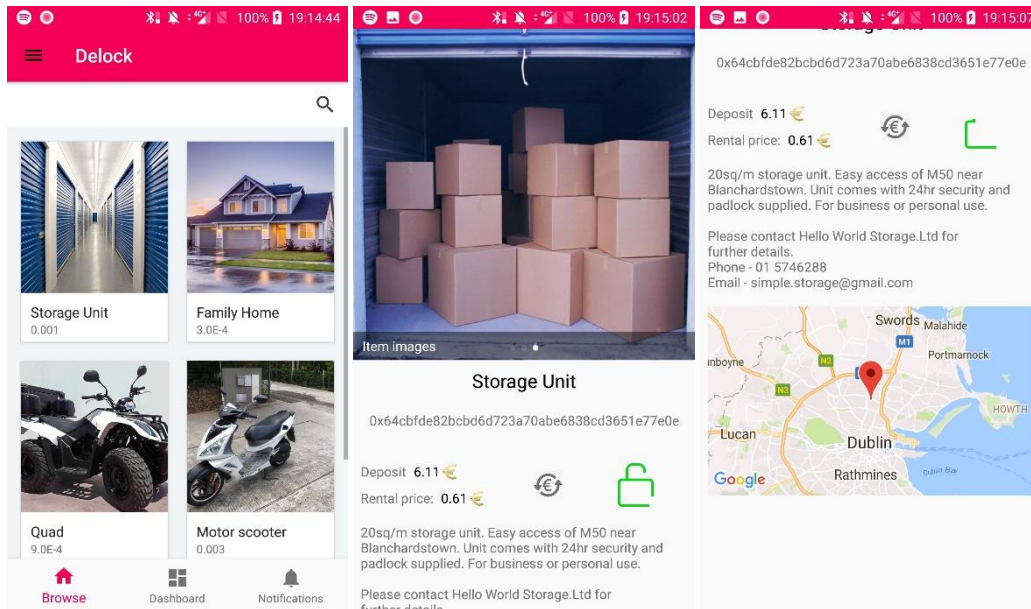- To confirm, click the floating pink button in the middle of the screen.

- Wait for the animation to turn green and a message to appear saying that the contract has been deployed successfully to a specific address.
- When this happens a text box will appear along with a button
- You are asked to enter a password, this password is not important, it is merely used as a means of generating a random secure passcode for the item lock.
- Input a password and press the button
- To finish and activate the item, hold the device to the lock and tap the screen when Android beam recognizes the interaction.
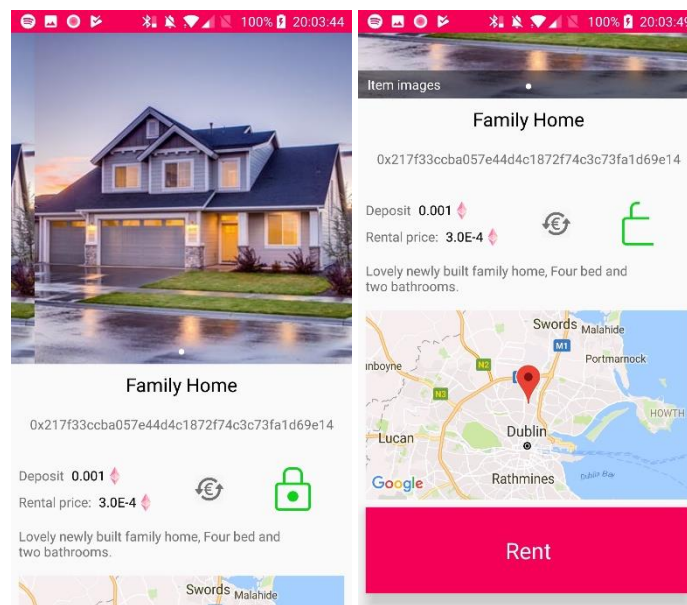- The app should reset to one of the main screens upon completion.

F. Item screen (Owned Item)

- Image Slider – swipe to view the next image
- Currency conversion button – small grey button with arrows circling a Euro symbol.
- Tap the lock animation to toggle the availability state of the item
  - Green – Item is available for be rented by other users
  - Red - Item is unavailable for rent by users.
- Maps view, shows the last location of the item. (Hardcoded for the time being).
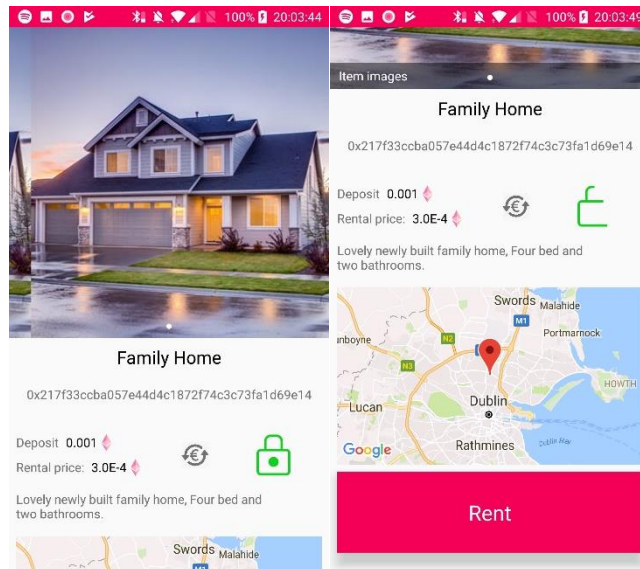

G. Item screen (Not owned Item)

- Image slider – no change
- Currency conversion button – no change
- Cannot alter the availability state of the item as they are not the owner.
- Map – no change
- Rent button will be visible – clicking this triggers a rental transaction and sends the deposit payment to the items contract.

H. Rent Item

- (Assume already on Item screen)
- (Cannot be an item you own)
- Item must be available i.e. the lock must be green.
- Click the Rent Item button
    - o Wait while it works
    - o When transaction completes, Unlock screen will open
- Hold device to the lock and tap the screen when Android Beam recognizing the interaction
- App will bring you out of Unlock screen.

I. Return Item

- (You are renting this item)
- Availability will be red as you are renting the item.
- The return button will be visible at the bottom of the screen
- Click this to end the rental
    - o Wait while it works
    - o When transaction completes, payment is deducted
- Lock screen appears, hold the device to the lock to complete the transaction.
- App will bring you out of Lock screen, Item is now available again.