



# Smart NFC Card Application

User Manual

Vast Expanse (Group 7)

COS 301 - 2019

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## Table of Contents

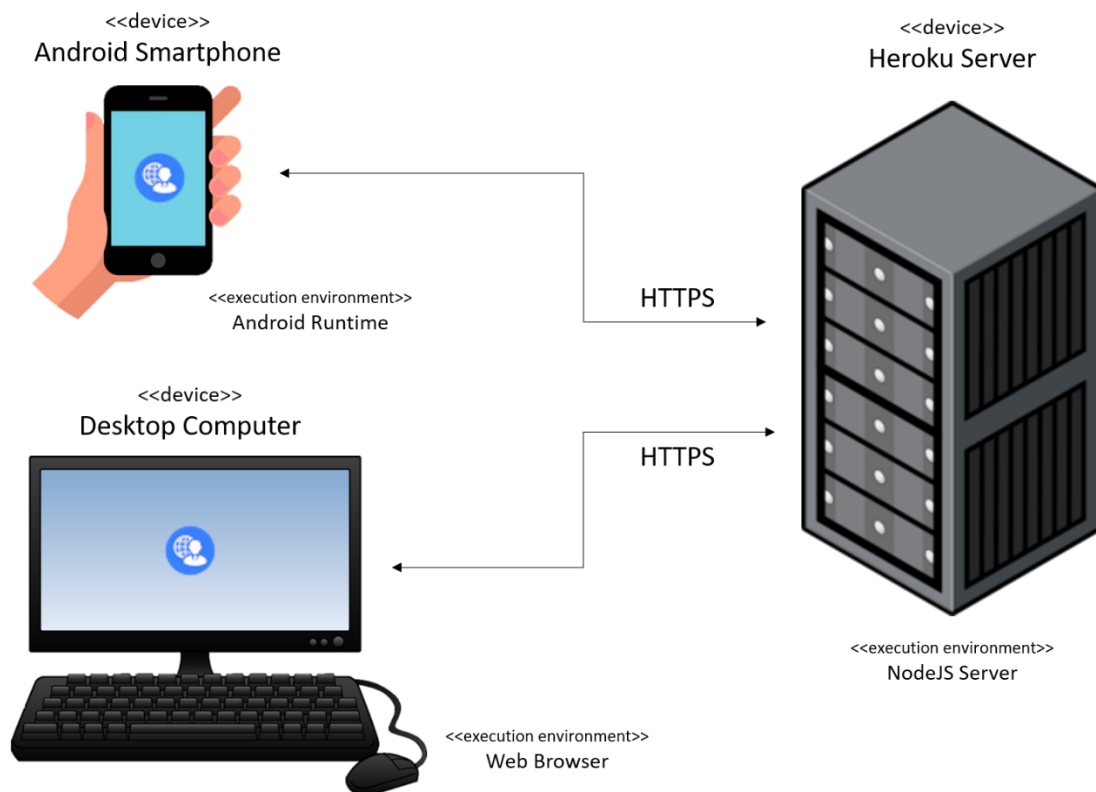
Glossary.....	3
System Design .....	3
App .....	4
Overview .....	4
Configuration .....	4
Installation .....	5
Getting Started.....	5
Using the System.....	6
Employee Features .....	6
Login.....	6
Refresh Account Details.....	6
Create Visitor Packages.....	7
Delete Created Visitor Packages .....	9
Logout .....	10
Share Business Cards .....	10
Refresh Card Details.....	11
Client Features .....	12
Add Business Cards .....	12
Delete Business Cards .....	12
Call Number on Business Cards .....	13
Email Employee on Business Cards.....	14
Visit Website on Business Cards .....	14
Get Directions on Business Cards .....	15
Add Visitor Packages .....	16
Delete Visitor Package .....	17
Get Directions from Visitor Packages .....	17
Connect to WiFi on Visitor Packages .....	18
Gain access using Visitor Package .....	19
Make an inhouse payment using Visitor Package .....	19
Troubleshooting.....	20
Web Interface .....	23
Interface Overview.....	23
Interface Configuration.....	23

Installation .....	24
Getting Started.....	24
Using the System.....	25
Login .....	25
Navigating .....	26
Edit Company Details .....	27
Add Buildings .....	28
Edit Building details.....	29
Add Rooms .....	30
Add Employees.....	31
Edit Employee Details .....	32
Add Payment Points.....	33
Edit Payment Points .....	34
Using the Transaction page.....	35
Troubleshooting.....	36

## Glossary

Android 	An operating system for mobile phones developed by Google. It is also used for other mobile devices such as tablets and smart watches
NFC 	Near-field communication. A wireless technology that allows your device to share information with other NFC-enabled devices
Virtual business card	A digital representation of what a normal business card looks like, containing the details of an employee working for a company
Virtual wallet	A wallet that can be loaded with credits that can be used within the company who gave you the virtual wallet. Credits in the wallet cannot be traded in for actual money and can only be spent at the supported vendors within the company
Visitor Package	A group of features that can be shared by employees to clients. It includes access to a particular room in the employee's building (and rooms leading up to it). It can potentially also include access to the building's WiFi and/or include an amount set on a Virtual Wallet.
WiFi 	Wireless technology that allows your device to connect to the internet when in range of WiFi signals

## System Design



## App

### Overview

**Link App** is a mobile app that is meant to be used by the employees and clients of companies. The main purpose of the app is to make it easier for employees of a company to share their business card, WiFi details, access to their offices as well as to setup a virtual wallet for clients to use within the company. Clients will use the app to view business cards that has been shared with them, connect to companies' WiFi, gain access to offices as well as to spend money at the companies using their virtual wallet.

Direct relation between what an employee and client can do:


Employee	Client
1. Share virtual business card	1. View virtual business cards
2. Give access to offices	2. Gain access to offices
3. Share WiFi details	3. Connect to WiFi
4. Setup a virtual wallet	4. Spend money on the virtual wallet

### Configuration

For now, only Android phones are supported. To use the Link App, you need a mobile phone that runs Android version 5.0 or above and that supports NFC. To be able to connect to WiFi, your mobile phone also must support WiFi.


To check if your mobile phone is running a compatible version of Android:

When trying to download the app, Google Play Store should automatically check if your phone is running a compatible version of Android. To check manually, you can follow these steps:

Go to your mobile phone's **Settings** 


Tap on **About device** or something similar, for instance **About phone** (usually near the bottom of the list of settings)

Look for **Android version** if it there, continue to the next step, otherwise you might have to first tap on **Software information** or something similar.

If **Android version**  is 5.0 or higher, your mobile phone is running a compatible version of android. If your mobile phone is not running a compatible version of Android, you can try to update it, but otherwise your device unfortunately doesn't support the app.

To check if your phone supports WiFi:

The easiest way to check for this is to look for the WiFi symbol on your screen. When your screen is on, it should appear on the top toolbar of the phone. If you do not see the symbol there, you can follow these following steps:

Go to your mobile phone's **Settings** 


Look for the **Wireless and networks** section. You might first have to tap on an option similar to **Connections**.

You should now see an option that says **Wi-Fi**  and it might show you the symbol.


If your phone does not support WiFi, the chances that it has NFC is very slim and thus your mobile phone unfortunately doesn't support the app.

To check if your phone supports NFC:

There are some websites like <https://www.unitag.io/nfc/is-my-phone-compatible-with-nfc> that allows you to check if your mobile phone supports NFC. You can also manually check your phone for the capability by following these steps:

Go to your mobile phone's **Settings** 

Look for the **Wireless and networks** section. You might first have to tap on an option like **Connections**.

You should now see an option that says **NFC and payment**  and it might show you the symbol. If not, you might first have to tap on **More settings**.

If your phone does not support NFC, your mobile phone unfortunately doesn't support the app.

## Installation

The app is still in early development and thus cannot yet be found publicly. Current installation requires the app to be loaded on the mobile phone directly.

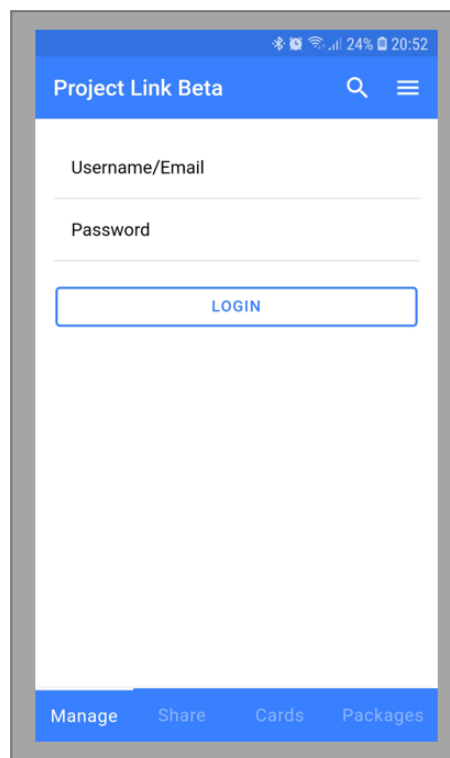
## Getting Started

If you are an employee of a company that wants to use the app to share information as specified in the 'System Overview', you will first have to register. To find out how to register see **Web Interface Configuration** below. If are a client of a company or merely wish to get the virtual business card from an employee, you do not have to register.

Start by following the procedure specified under 'Installation'. Once you have downloaded and installed the app, you can get started. Navigate to where your apps are stored and tap on **Link App**



. Once you have tapped on the app, it should open, and you should see this screen:



If you see this screen, continue to 'Using the System', otherwise consult the 'Troubleshooting' section to see if there is a potential fix.

## Using the System

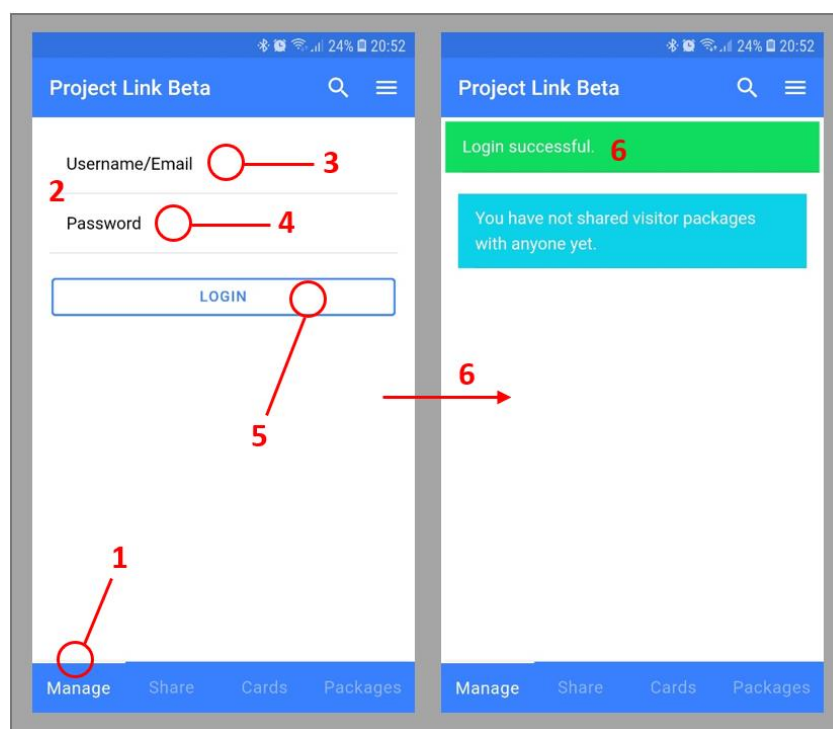
### Employee Features

#### Login

If you already have an account (your company is registered with Link) and you would like to log in to get access to more features, follow these steps:


- 1) Navigate to the 'Manage' tab by tapping on the first tab at the bottom left hand corner, called 'Manage'.
- 2) If the screen does not have 'Username/Email' and 'Password' fields, you are already logged in. If the above-mentioned fields do appear, proceed to the next step.
- 3) Enter your registered username into the respective 'Username/Email' field, by tapping on the 'Username/Email' field and then typing in your username.
- 4) Enter your registered password into the respective 'Password' field, by tapping on the 'Password' field and then typing in your password.
- 5) Tap the 'Login' button.
- 6) If the details were correct, there should be a green success message which reads: "Login successful." at the top of the screen.

If no errors occurred, you should now be logged in. If you are still not logged in or errors occurred, visit the troubleshooting section for more information.

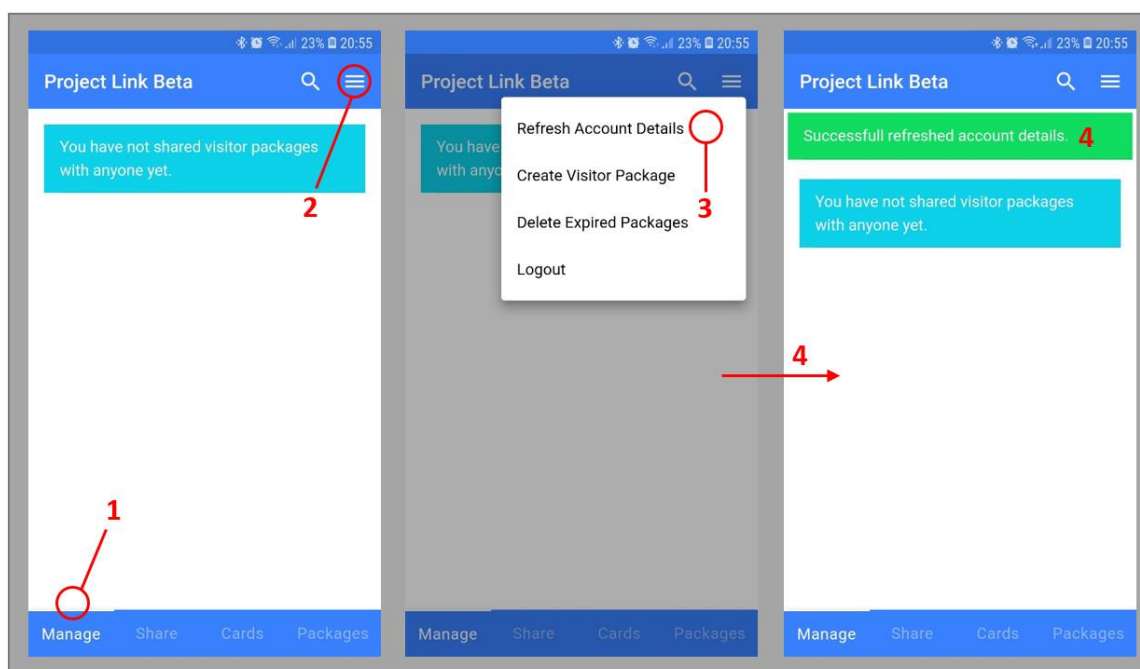


#### Refresh Account Details

If your displayed account details are different from what is on your registered account, or the details have been updated after you logged in, you can refresh them by following these steps:


- 1) Navigate to the 'Manage' tab by tapping on the first tab at the bottom left hand corner, called 'Manage'.
- 2) Tap the menu icon  at the top right of the screen.
- 3) Tap on the 'Refresh Account Details' option at the top of the menu. If the 'Refresh Account Details' option is not there and you only see a 'Login' option, please log in first and restart at step 1 if your account details are still out of date.

4) If the account details were successfully updated, there should be a green success message which reads: “Successfully refreshed account details.” at the top of the screen. If no errors occurred, your details should now be up to date. If your details aren’t up to date or errors occurred, visit the troubleshooting section for more information.



### Create Visitor Packages

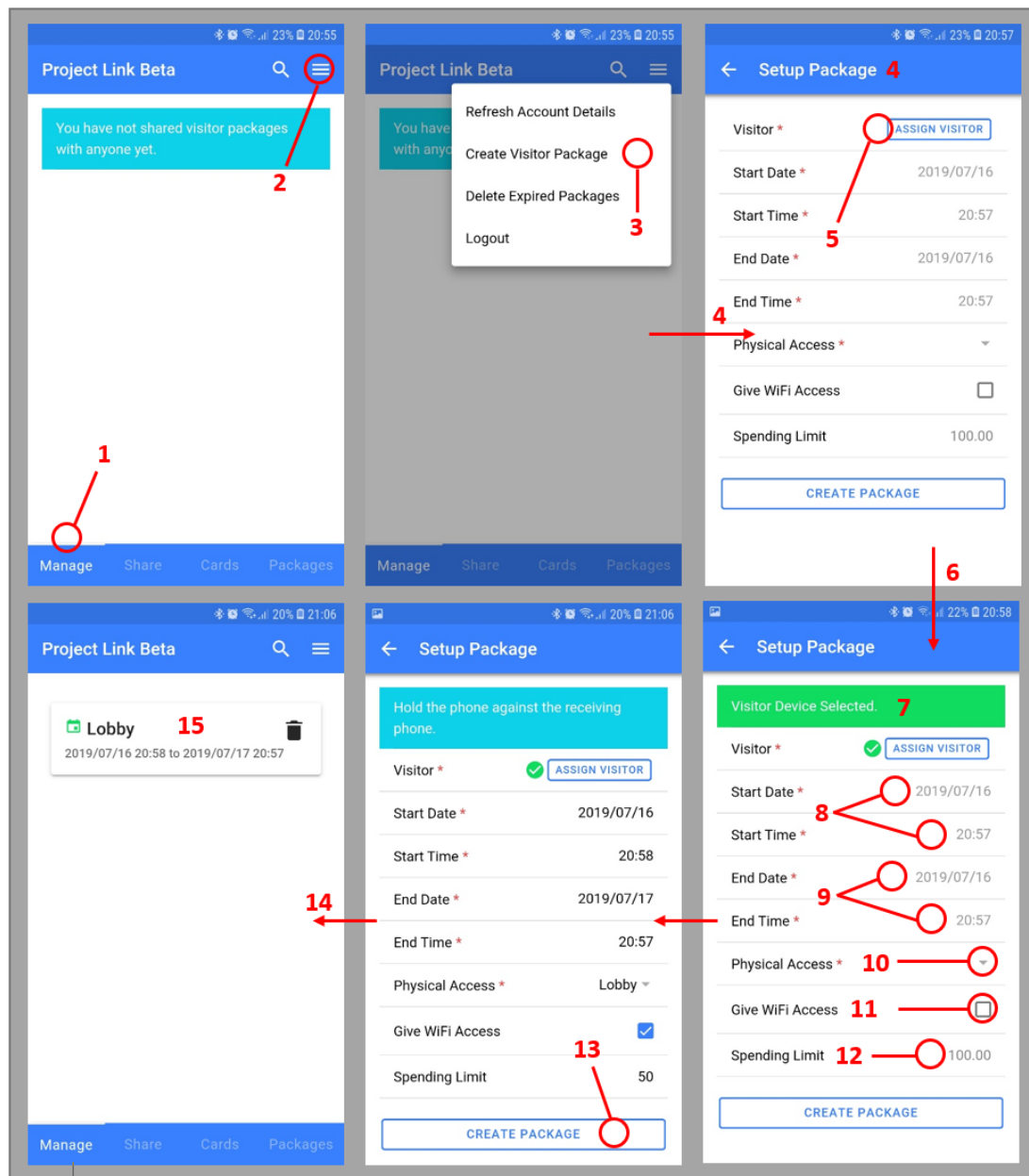
If you are logged in and want to create a Visitor Package for a potential client, you can do so by following these steps:

- 1) Navigate to the 'Manage' tab by tapping on the first tab at the bottom left hand corner, called 'Manage'.
- 2) Tap the menu icon  at the top right of the screen.
- 3) Tap on the 'Create Visitor Package' option at the top of the menu. If the 'Create Visitor Package' option is not there and you only see a 'Login' option, please log in first and restart at step 1.
- 4) A new form should now have appeared on your screen titled 'Setup Package'.
- 5) Assign the client to the package by tapping the 'Assign Visitor' button.
- 6) When the prompt 'Hold the phone against the sharing device.' pops up, hold your phone against the client's phone (back to back). The client will then push the required information to your phone.
- 7) Once the green success message pops up, which reads: "Visitor device selected." at the top of the screen as well as a green arrow pops up, the client's device has been linked.
- 8) Enter a start Date and Time by tapping on the respective fields and selecting an appropriate start date and time for the visitor package. (When the package should take effect.)
- 9) Enter an end Date and Time by tapping on the respective fields and selecting an appropriate end date and time for the visitor package. (When the package should expire.)
- 10) Select a room by tapping the drop down at 'Physical Access' and selecting one of the options. Now click the 'OK' button.
- 11) *Optional:* To add WiFi sharing to the visitor package tick the box next to the 'Give WiFi Access' field. Untick the box to remove WiFi sharing.
- 12) *Optional:* To add a Virtual Wallet to the package, select the 'Spending Limit' field and type in the maximum amount the client can spend.



- 13) Tap the 'Create Package' button.
- 14) When the prompt 'Hold the phone against the sharing device.' pops up, hold your phone against the client's phone (back to back). Tap the screen once the 'Tap To Beam' prompt pops up.
- 15) A green success message should now pop up and you will get redirected back to the previous manage tab.

If no errors occurred, your package should now be created and shared with the potential client. If this is not the case or errors occurred, visit the troubleshooting section for more information.

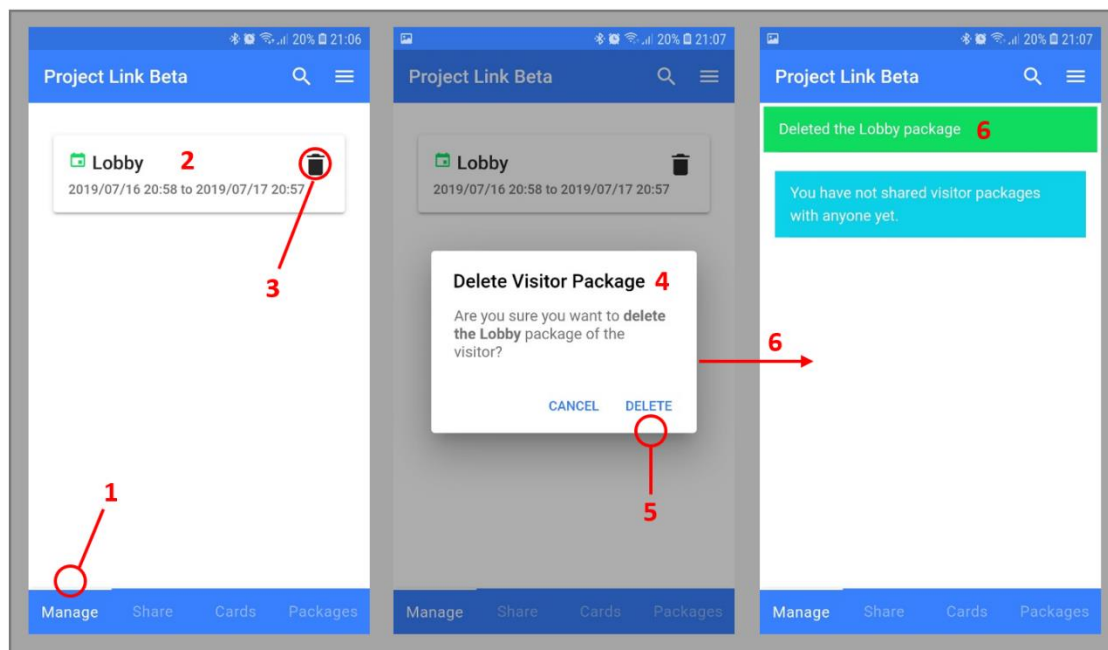


## Delete Created Visitor Packages

If you are logged in and want to delete a created Visitor Package, so that the Visitor Package isn't valid anymore, you can do so by following these steps:


- 1) Navigate to the 'Manage' tab by tapping on the first tab at the bottom left hand corner, called 'Manage'.
- 2) Locate the Visitor Package you would like to delete either manually or using the search bar.
- 3) Tap the trashcan icon of the package you wish to delete.
- 4) A prompt should pop up confirming if you would like to delete that particular Visitor Package.
- 5) Tap the 'Delete' button if you are sure you would like to delete the Visitor Package, otherwise tap the 'Cancel' button.
- 6) A green success message that reads: "Successfully deleted \_\_\_\_\_ package", should appear on the top of the screen, and you shouldn't be able to find that package anymore.

If no errors occurred, the selected package should now be deleted. If this is not the case or errors occurred, visit the troubleshooting section for more information.

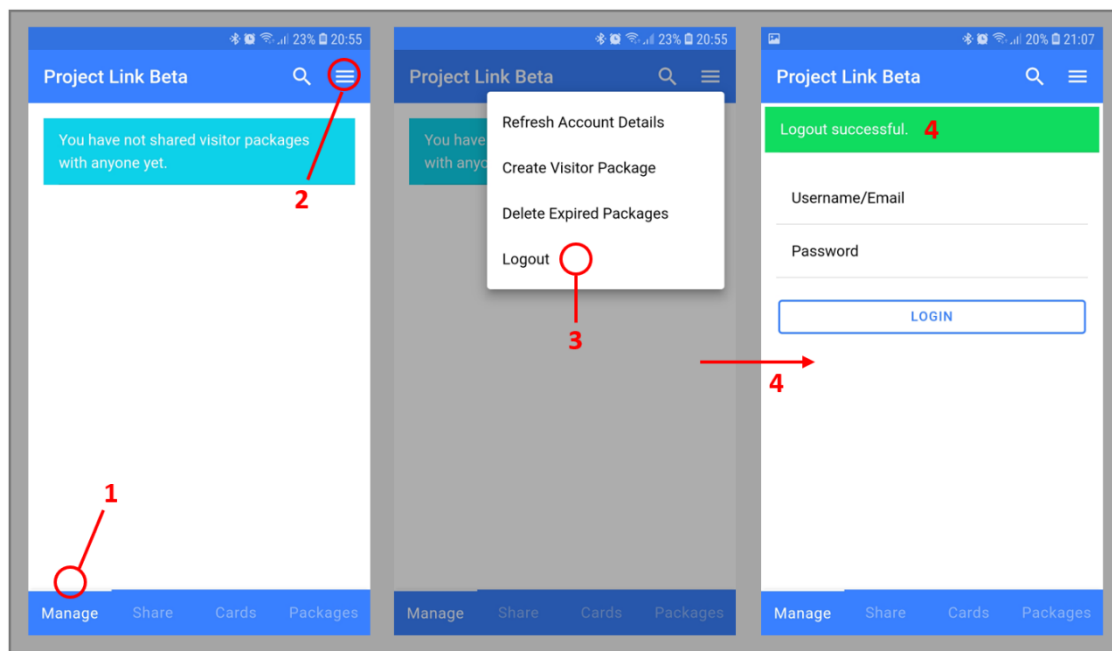


## Logout

If you are already logged in and you would like to log out of your account, follow these steps:

- 1) Navigate to the 'Manage' tab by tapping on the first tab at the bottom left hand corner, called 'Manage'.
- 2) Tap the menu icon  at the top right of the screen.
- 3) Tap on the 'Logout' option at the bottom of the menu. If the 'Logout' option does not appear, it means that you are already logged out.
- 4) A green success message that reads: "Successful logout." should appear at the top of the screen. (The Username and Password fields should now be visible)

If no errors occurred, you should now be logged out. If you are still not logged out or errors occurred, visit the troubleshooting section for more information.

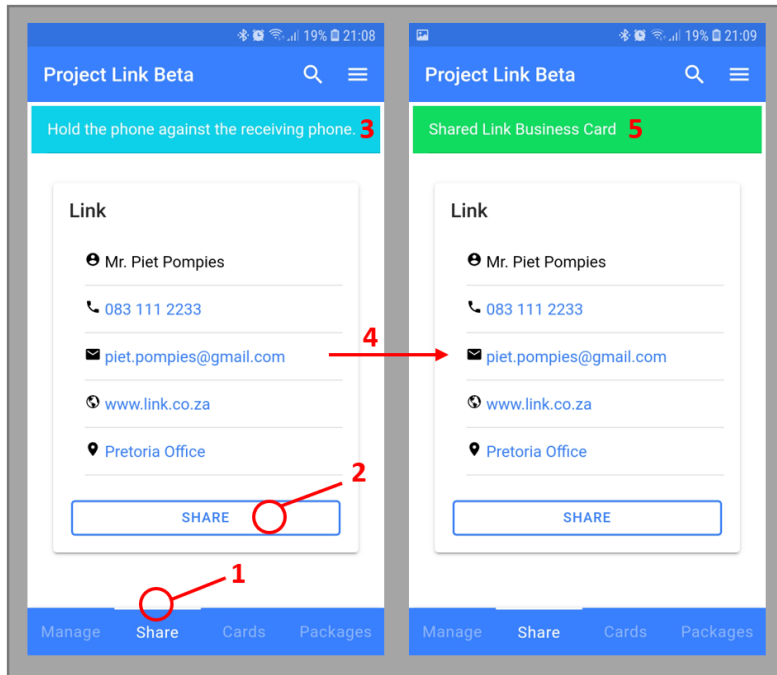


## Share Business Cards

If you have a registered account and have already logged in once and want to share your business card, follow these steps:


- 1) Navigate to the 'Share' tab by tapping on the second tab at the bottom left hand corner, called 'Share'.
- 2) Tap on the 'Share' button on your Virtual Business Card.
- 3) Once the 'Hold the phone against the receiving phone' info message appears at the top of the screen, hold your phone back to back against the phone of the person that should receive your Virtual Business Card.
- 4) Once the 'Touch To Beam' prompt pops up, touch your screen to push the data to the receiver's phone.
- 5) A green success message that reads: "Shared \_\_\_\_ Business Card" should appear at the top of your screen.

If no errors occurred, the receiver should now be able to see your business card on their app. If the cannot see it, or errors occurred, visit the troubleshooting section for more information.

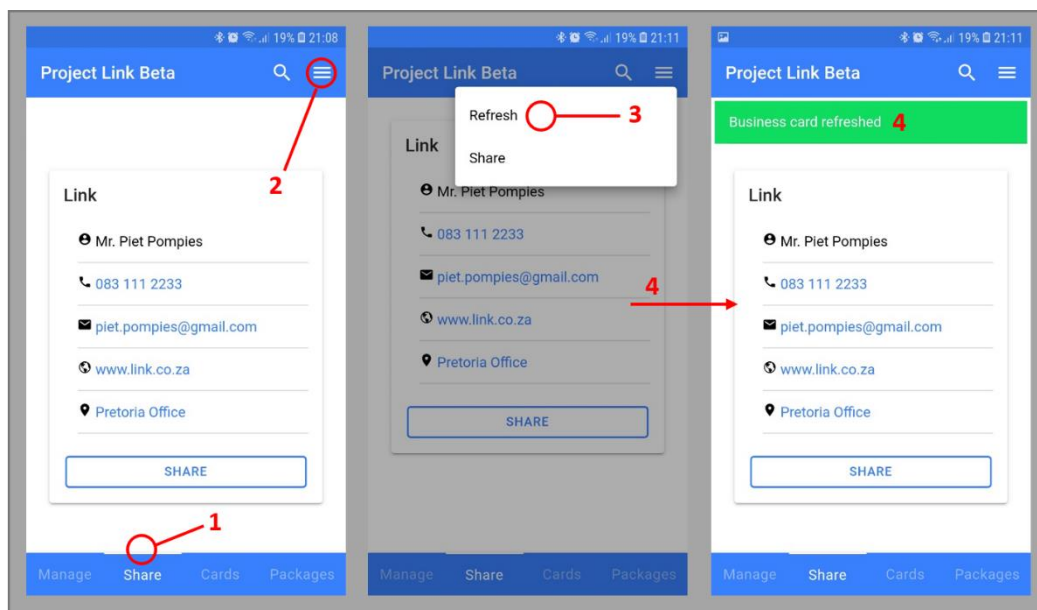


### Refresh Card Details

If your Virtual Business Card details are different from what is on your registered account, or the details have been updated after you logged in, you can refresh them by following these steps:

- 1) Navigate to the 'Share' tab by tapping on the second tab at the bottom left hand corner, called 'Share'.
- 2) Tap the menu icon  at the top right of the screen.
- 3) Tap on the 'Refresh' option at the top of the menu. If the 'Refresh' option is not there and you only see a 'Share' option, please log in first and restart at step 1 if your Virtual Business Card details are still out of date.
- 4) If the Virtual Business Card details were successfully updated, there should be a green success message which reads: "Business card refreshed." at the top of the screen.


If no errors occurred, your details should now be up to date. If your details aren't up to date or errors occurred, visit the troubleshooting section for more information.



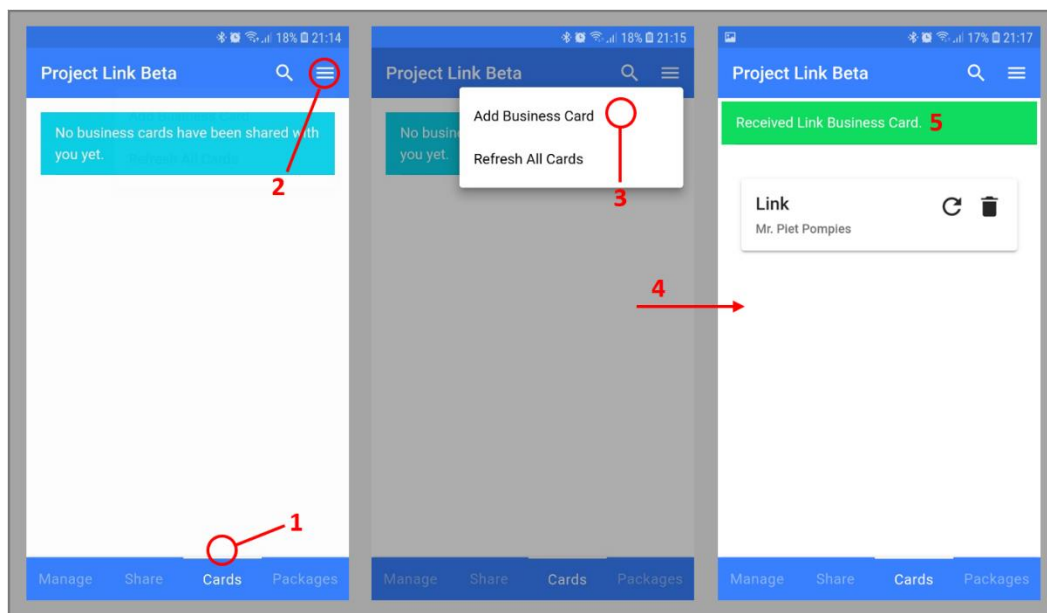
## Client Features

### Add Business Cards

When an employee wants to share his business card with you, using the app, you can receive his Virtual Business Card by following these steps:


- 1) Navigate to the 'Cards' tab by tapping on the third tab at the bottom right hand corner, called 'Cards'.
- 2) Tap the menu icon  at the top right of the screen.
- 3) Tap on the 'Add Business Card' option at the top of the menu.
- 4) Once the 'Hold the phone against the sharing device.' appears at the top of the screen, hold your phone back to back against the phone of the person sharing their Virtual Business Card with you.
- 5) Wait for a green success message to appear at the top of your screen that reads: "Received \_\_\_\_\_ Business Card".

If no errors occurred, a new Virtual Business Card should be at the top of the list of business cards that have been shared with you. If you did not receive the business card, or errors occurred, visit the troubleshooting section for more information.

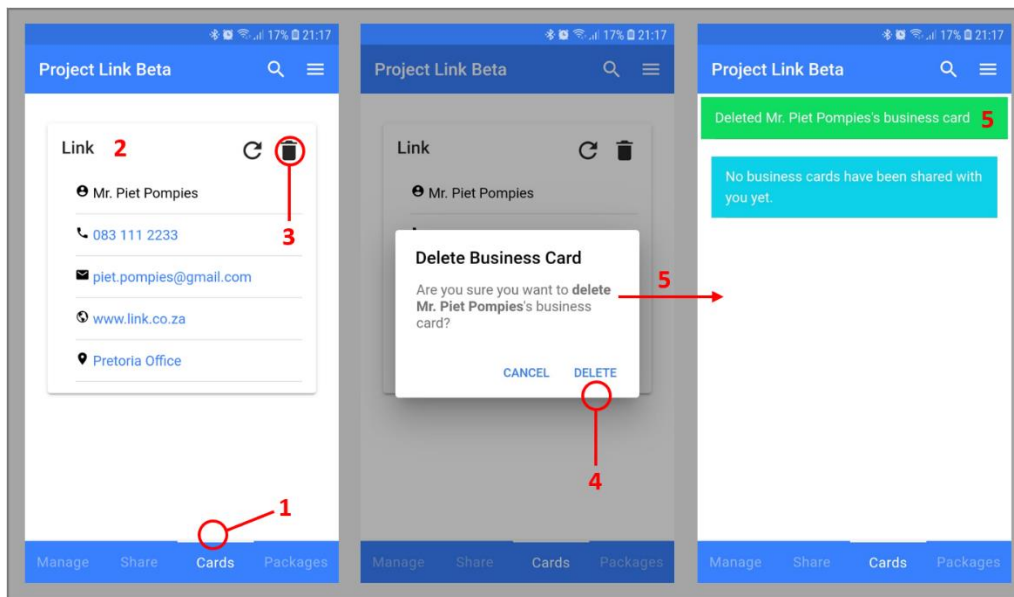


### Delete Business Cards

If you want to delete a Virtual Business Card, so that the Virtual Business Card isn't stored on your phone anymore, you can do so by following these steps:

- 1) Navigate to the 'Cards' tab by tapping on the third tab at the bottom right hand corner, called 'Cards'.
- 2) Locate the Virtual Business Card you would like to delete either manually or using the search bar.
- 3) Tap the trashcan icon  of the Virtual Business Card you wish to delete.
- 4) A prompt should pop up confirming if you would like to delete that particular Virtual Business Card.
- 5) Tap the 'Delete' button if you are sure you would like to delete the Virtual Business Card, otherwise tap the 'Cancel' button.
- 6) A green success message that reads: "Deleted \_\_\_\_\_ business card", should appear on the top of the screen, and you shouldn't be able to find that Virtual Business Card anymore.

If no errors occurred, the selected Virtual Business Card should now be deleted. If this is not the case or errors occurred, visit the troubleshooting section for more information.

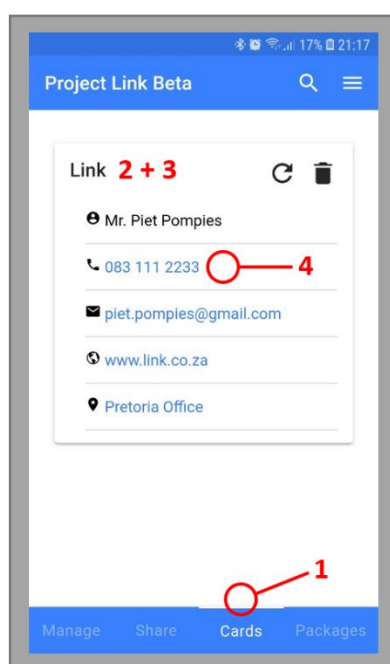


### Call Number on Business Cards

If a Virtual Business Card has been shared with you and you would like to call the number on the Virtual Business Card or save it to your contact list, follow these steps:


- 1) Navigate to the 'Cards' tab by tapping on the third tab at the bottom right hand corner, called 'Cards'.
- 2) Locate the Virtual Business Card you would like to call the number of, either manually or using the search bar.
- 3) Tap the name of the Virtual Business Card to show more information about it.
- 4) Tap on the number next to the phone icon 📞

If no errors occurred, your default phonebook app should open with the number inserted into it. If this is not the case or errors occurred, visit the troubleshooting section for more information.

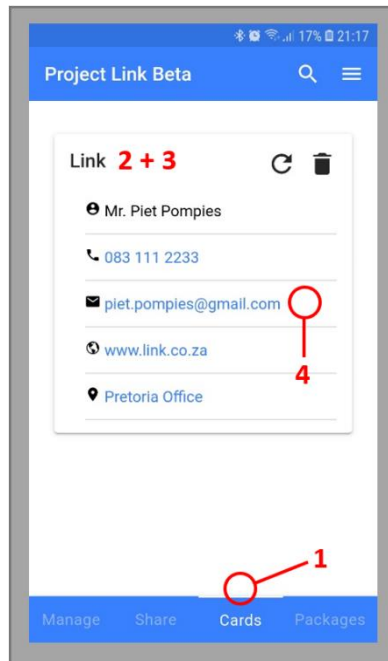


### Email Employee on Business Cards

If a Virtual Business Card has been shared with you and you would like to email the employee of the Virtual Business Card, follow these steps:


- 1) Navigate to the 'Cards' tab by tapping on the third tab at the bottom right hand corner, called 'Cards'.
- 2) Locate the employee's Virtual Business Card either manually or using the search bar.
- 3) Tap the name of the Virtual Business Card to show more information about it.
- 4) Tap on the email address next to the email icon 

If no errors occurred, your default email app should open with the email inserted into its receiver field. If this is not the case or errors occurred, visit the troubleshooting section for more information.

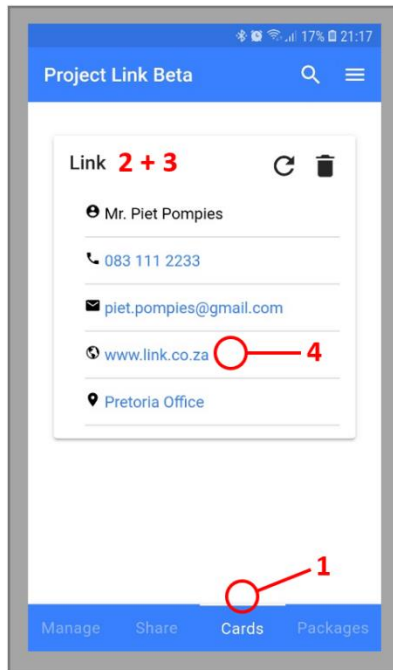


### Visit Website on Business Cards

If a Virtual Business Card has been shared with you and you would like to visit the website of the company, follow these steps:

- 1) Navigate to the 'Cards' tab by tapping on the third tab at the bottom right hand corner, called 'Cards'.
- 2) Locate the Virtual Business Card either manually or using the search bar.
- 3) Tap the name of the Virtual Business Card to show more information about it.
- 4) Tap on the website link next to the web icon 

If no errors occurred, your browser should open on the website of the company. If this is not the case or errors occurred, visit the troubleshooting section for more information.

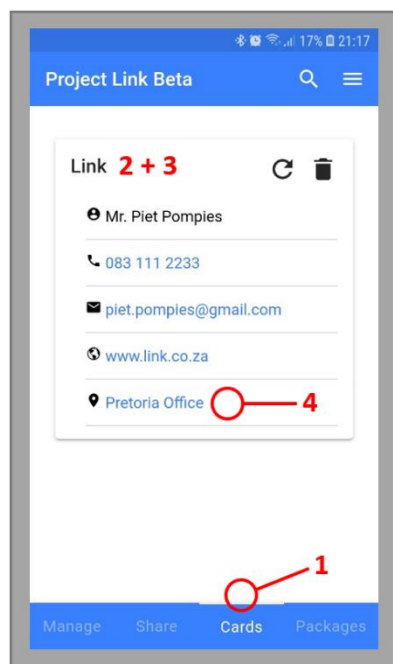


### Get Directions on Business Cards

If a Virtual Business Card has been shared with you and you would like to get directions to the company building where the employee works, follow these steps:

- 1) Navigate to the 'Cards' tab by tapping on the third tab at the bottom right hand corner, called 'Cards'.
- 2) Locate the Virtual Business Card either manually or using the search bar.
- 3) Tap the name of the Virtual Business Card to show more information about it.
- 4) Tap on the building name next to the pin icon 📍

If no errors occurred, your default GPS app should open with the directions to the building. If this is not the case or errors occurred, visit the troubleshooting section for more information.



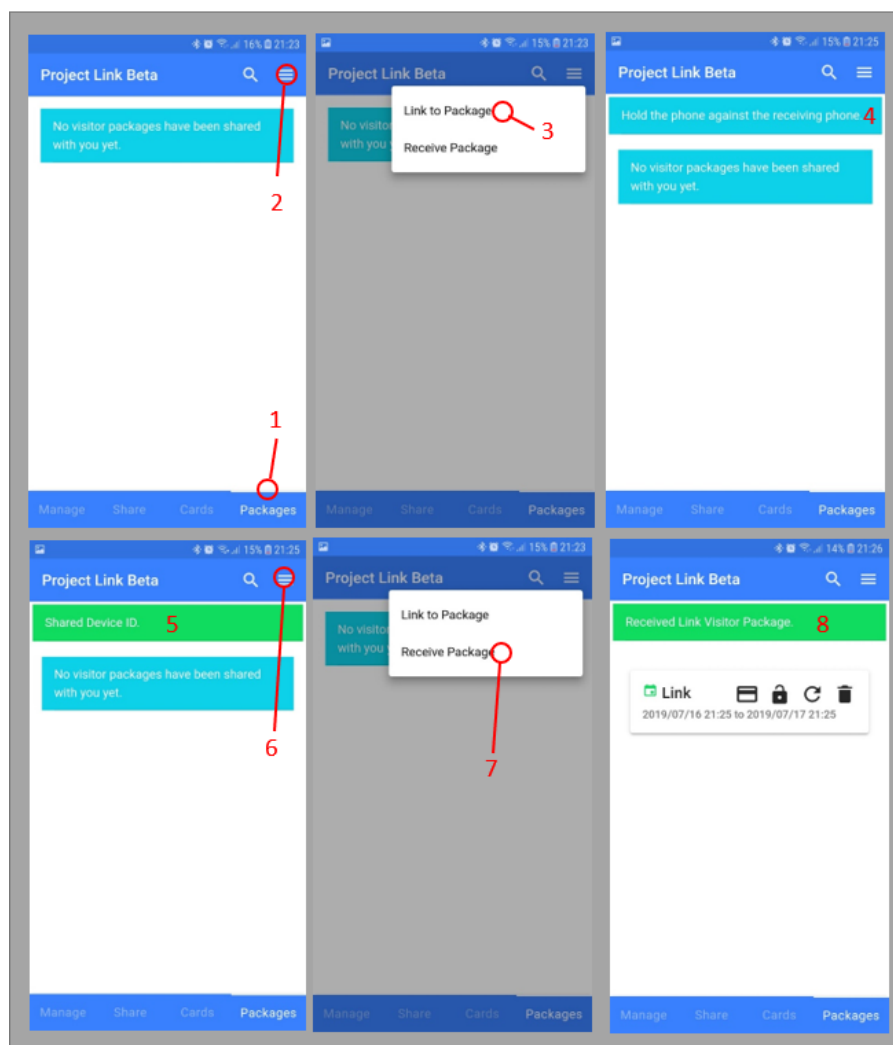


## Add Visitor Packages

If an employee wants to share a Visitor Package with you, using the app, follow these steps:

- 1) Navigate to the 'Packages' tab by tapping on the last tab at the bottom right hand corner, called 'Packages'.
- 2) Tap the menu icon ≡ at the top right of the screen.
- 3) Once the employee wants to assign your device to the Visitor Package, tap on the 'Link to Package' option at the top of the menu.
- 4) Once the 'Hold the phone against the receiving phone.' appears at the top of the screen, hold your phone back to back against the phone of the employee.
- 5) Once the 'Touch To Beam' prompt pops up, touch your screen to push the data to the receiver's phone.
- 6) Tap the menu icon ≡ at the top right of the screen.
- 7) Once the employee wants to share the Visitor Package with you, tap on the 'Receive Package' option at the top of the menu.
- 8) Once the 'Hold the phone against the receiving phone.' appears at the top of the screen, hold your phone back to back against the phone of the employee.
- 9) Wait for a green success message to appear at the top of your screen that reads: "Received \_\_\_\_\_ Visitor Package".

If no errors occurred, the Visitor Package should now be at the top of the list of received packages. If this is not the case or errors occurred, visit the troubleshooting section for more information.

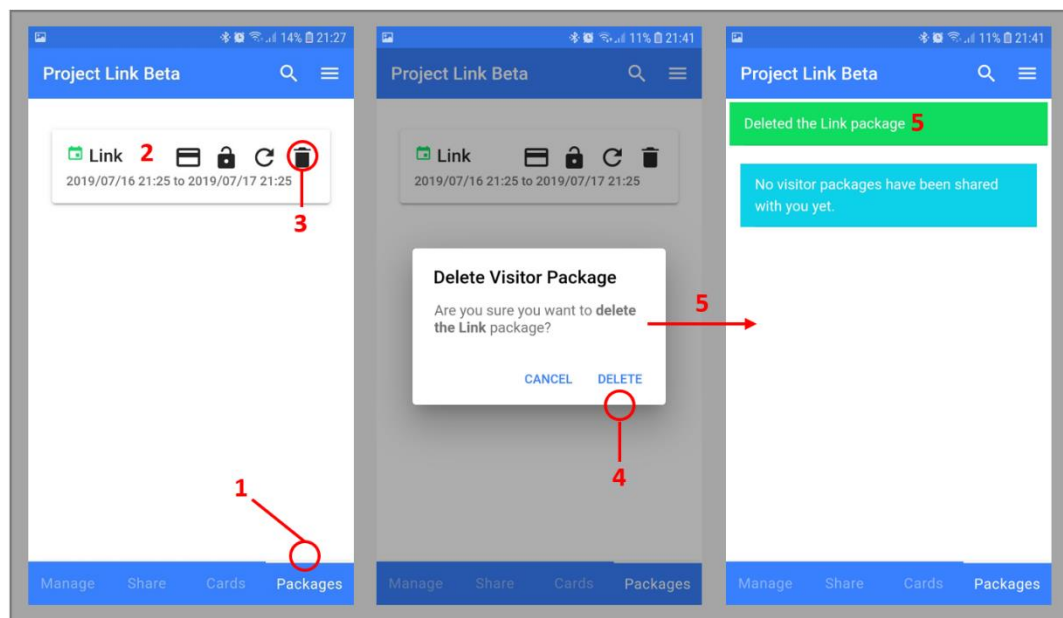


## Delete Visitor Package

If you want to delete a Visitor Package, so that the Visitor Package isn't stored on your phone anymore, you can do so by following these steps:

- 1) Navigate to the 'Packages' tab by tapping on the last tab at the bottom right hand corner, called 'Packages'.
- 2) Locate the Visitor Package you would like to delete either manually or using the search bar.
- 3) Tap the trashcan icon of the Visitor Package you wish to delete.
- 4) A prompt should pop up confirming if you would like to delete that particular Visitor Package.
- 5) Tap the 'Delete' button if you are sure you would like to delete the Visitor Package, otherwise tap the 'Cancel' button.
- 6) A green success message that reads: "Deleted the \_\_\_\_\_ package", should appear on the top of the screen, and you shouldn't be able to find that Virtual Business Card anymore.

If no errors occurred, the selected Visitor Package should now be deleted. If this is not the case or errors occurred, visit the troubleshooting section for more information.

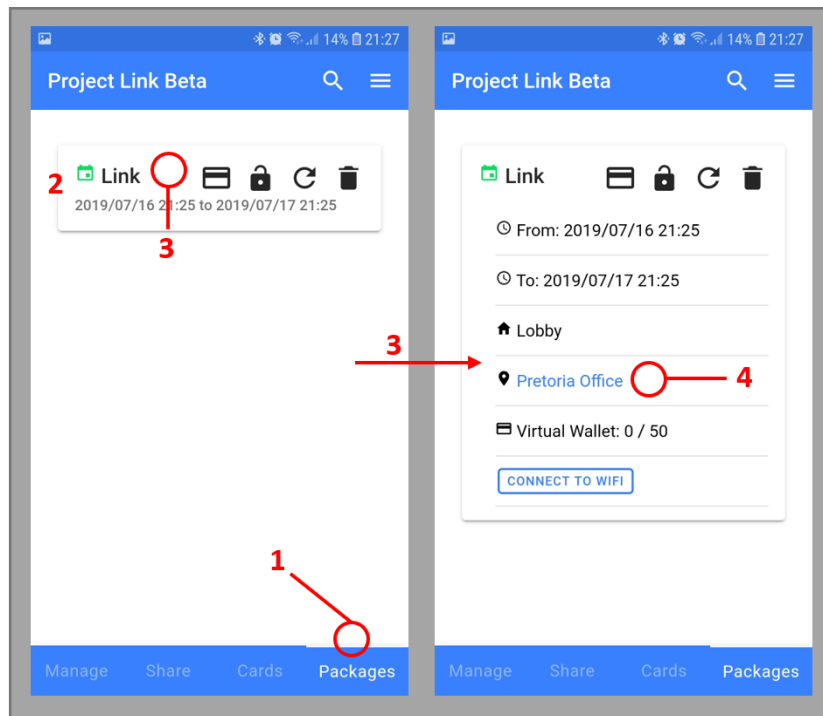


## Get Directions from Visitor Packages

If a Visitor Package has been shared with you and you would like to get directions to the building on the package, follow these steps:

- 1) Navigate to the 'Packages' tab by tapping on the last tab at the bottom right hand corner, called 'Packages'.
- 2) Locate the Visitor Package either manually or using the search bar.
- 3) Tap the name of the Visitor Package to show more information about it.
- 4) Tap on the building name next to the pin icon.

If no errors occurred, your default GPS app should open with the directions to the building. If this is not the case or errors occurred, visit the troubleshooting section for more information.

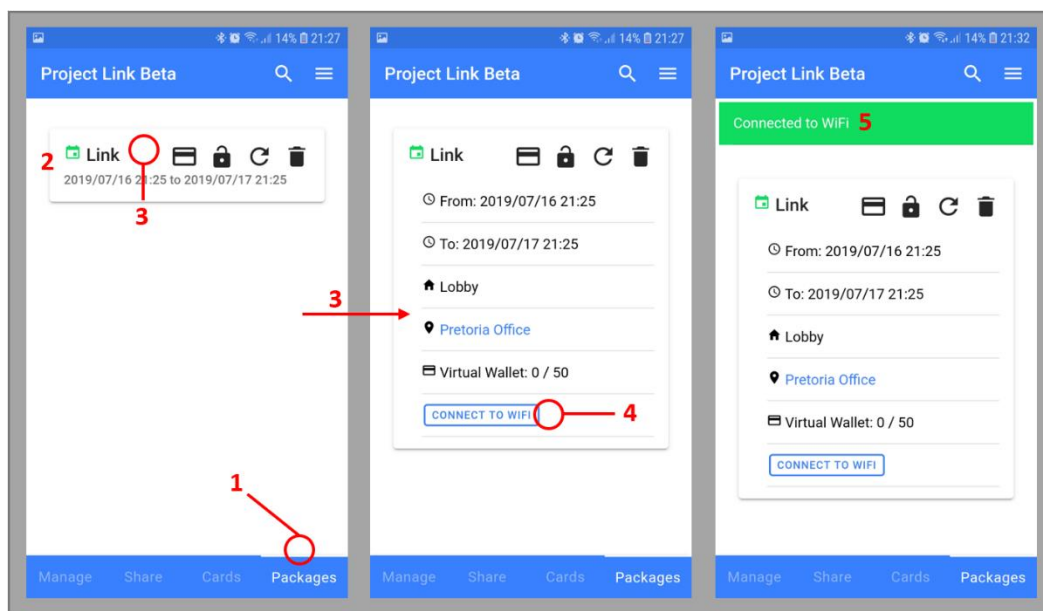


### Connect to WiFi on Visitor Packages

If a Visitor Package has been shared with you and WiFi access was granted to you. If you would like to connect to the building's WiFi, follow these steps:

- 1) Navigate to the 'Packages' tab by tapping on the last tab at the bottom right hand corner, called 'Packages'.
- 2) Locate the Visitor Package either manually or using the search bar.
- 3) Tap the name of the Visitor Package to show more information about it.
- 4) Tap on the 'Connect To WiFi' button.
- 5) Wait for the green success message to pop up at the top of the screen that reads: "Successfully connected to WiFi".

If no errors occurred, you should now be connected to the building's WiFi. If this is not the case or errors occurred, visit the troubleshooting section for more information.

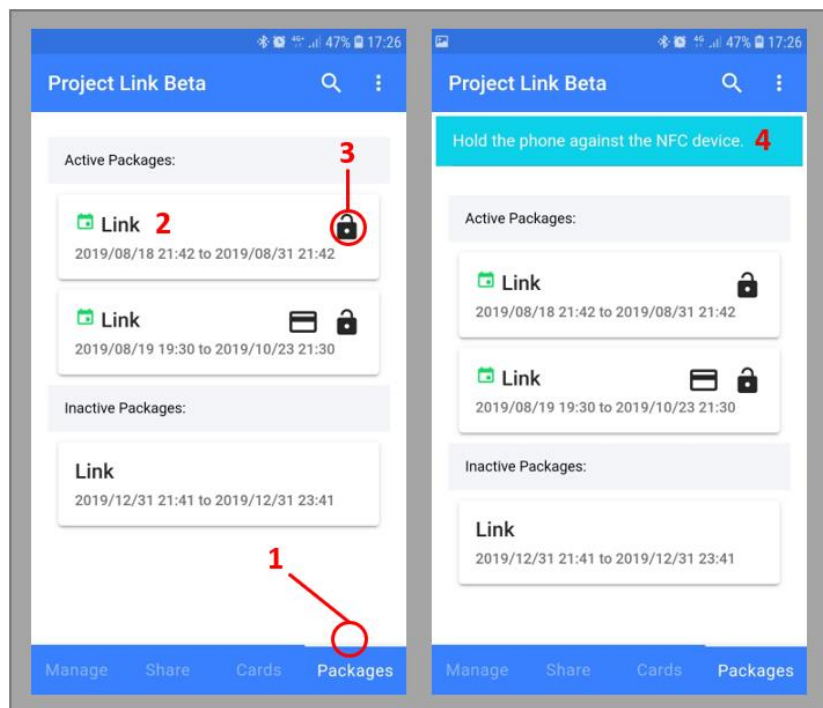


### Gain access using Visitor Package

If a Visitor Package has been shared with you and physical access was granted to you. If you would like to gain access to a room in the building, which access was granted for, follow these steps:

- 1) Navigate to the 'Packages' tab by tapping on the last tab at the bottom right hand corner, called 'Packages'.
- 2) Locate the Visitor Package either manually or using the search bar.
- 3) Tap on the access icon at the top of the Visitor Package.
- 4) Once the 'Hold the phone against the NFC device' appears at the top of the screen, hold your phone against the NFC access device.
- 5) Once the 'Touch To Beam' prompt pops up, touch your screen to attempt access.

If no errors occurred, the NFC device should grant access to the door, unlocking it. If this is not the case or errors occurred, visit the troubleshooting section for more information.

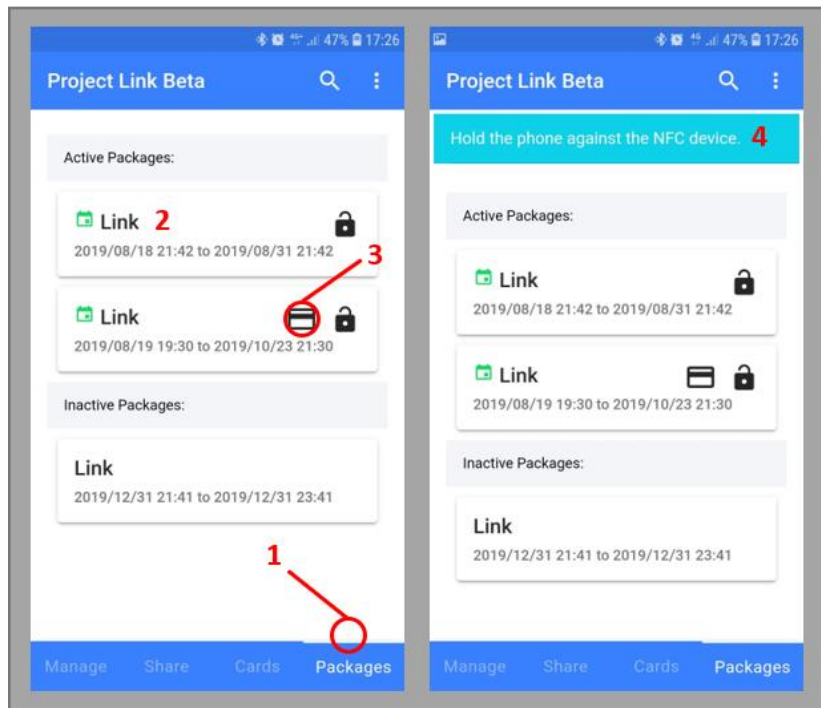


### Make an inhouse payment using Visitor Package

If a Visitor Package has been shared with you and a virtual wallet was setup for you. If you still have enough credits left and would like to use it to make a payment at one of their vendors which accepts this type of payment:

- 1) Navigate to the 'Packages' tab by tapping on the last tab at the bottom right hand corner, called 'Packages'.
- 2) Locate the Visitor Package either manually or using the search bar.
- 3) Tap on the card icon at the top of the Visitor Package.
- 4) Once the 'Hold the phone against the NFC device' appears at the top of the screen, hold your phone against the NFC access device.
- 5) Once the 'Touch To Beam' prompt pops up, touch your screen to make the payment.


If no errors occurred the payment should have gone through, and the clerk/machine should give you your items. If this is not the case or errors occurred, visit the troubleshooting section for more information.



## Troubleshooting



General: Something went wrong: Ensure that you have an internet connection

Try the following steps below, after each step checking whether it fixed your issue:

- 1) Check Your internet connection
  - a) Try accessing websites
  - b) Check your connection - in the case that **a)** fails
    - i) If you are using a Wi-Fi , try to use a network cable instead
    - ii) If you are using 3G, try to connect to the internet on a different computer using the 3G modem
  - c) If the above have not worked, try rebooting your router/ modem.
  - d) If you still don't have an internet connection, contact your ISP (internet service provider) for assistance

General: Error: NFC DISABLED

Try the following steps below, after each step checking whether it fixed your issue:

- 1) Ensure that your phone supports NFC by following the instructions in the 'Configuration' section for the app in this manual
- 2) Ensure that your NFC services are enabled
  - a) If the NFC icon  does not appear on the top of your phone's status bar, ensure that it is enabled in the settings
  - b) If it is disabled, enable it by tapping the NFC icon 

Login: Incorrect username and/or password

Try the following steps below, after each step checking whether it fixed your issue:

- 1) Ensure that you have entered your details correctly

- a) Double check the spelling of the username and password. Capital letters are considered different from their lowercase counterparts
- 2) Ensure that you have a registered account
  - a) Contact your company representative and find out if your account is active
- 3) If you forgot your username or password
  - a) Contact your company representative and find out if your account details are
  - b) Let your company representative reset your details if they cannot be recovered

#### Create Visitor Packages: ... is required

Try the following steps below, after each step checking whether it fixed your issue:

- 1) Ensure that you have filled in all the details that are required
  - a) Fill in all the fields that has a red star next to the field name

#### Create Visitor Packages: No physical access options (except for 'None')

Try the following steps below, after each step checking whether it fixed your issue:

- 1) Refresh account details
- 2) Ensure that you have been assigned to a building with rooms
  - a) Contact your company representative and inquire about the issue



#### Logout: Could not log out

Try the following steps below, after each step checking whether it fixed your issue:

- 1) Restart the app


#### Get Directions on Business Cards


Try the following steps below, after each step checking whether it fixed your issue:

- 1) Ensure that your Location services are enabled
  - a) If  does not appear on the top of your phone's status bar, enable it in the settings
- 2) Check Your internet connection
  - a) Try accessing websites
  - b) Check your connection - in the case that **a)** fails
    - i) If you are using a Wi-Fi , try to use a network cable instead
    - ii) If you are using 3G, try to connect to the internet on a different computer using the 3G modem
  - c) If the above have not worked, try rebooting your router/ modem.
  - d) If you still don't have an internet connection, contact your ISP (internet service provider) for assistance

#### Get Directions from Visitor Packages: GPS not opening

Try the following steps below, after each step checking whether it fixed your issue:

- 1) Ensure that your Location services are enabled
  - a) If  does not appear on the top of your phone's status bar, enable it in the settings

- 2) Check Your internet connection
  - a) Try accessing websites
  - b) Check your connection - in the case that **a)** fails
    - i) If you are using a Wi-Fi , try to use a network cable instead
    - ii) If you are using 3G, try to connect to the internet on a different computer using the 3G modem
  - c) If the above have not worked, try rebooting your router/ modem.
  - d) If you still don't have an internet connection, contact your ISP (internet service provider) for assistance

#### Connect to WiFi on Visitor Packages: Timeout

Try the following steps below, after each step checking whether it fixed your issue:

- 1) Ensure that you are in the range of the WiFi hotspot
  - a) Find out where the hotspot is by asking the employee that shared it with you
  - b) Move closer and tap the button again


#### Connect to WiFi on Visitor Packages: No 'Connect' button

Try the following steps below, after each step checking whether it fixed your issue:

- 1) Ensure that your visitor package includes WiFi access
  - a) Ask the employee that shared the package with you

## Web Interface

### Interface Overview

**Link Admin Interface** is a website that is meant to be used by a representative of a company such as an HR member. The main purpose of the web interface for the company representative to create and maintain all aspects of a company such as the different buildings, rooms and employees that belong to that company. Once this information has been created, an employee will be able to use the **Link App**  to share business cards and visitor packages with clients.

### Interface Configuration

Link Admin Interface is currently supported on the following **browsers**:

Google Chrome 

Mozilla Firefox 

The use of other browsers may result in an unexpected experience when using the Admin Interface

In order to login to the Admin Interface you will need to register your company with Link.

For company registrations please email the following details to [team.vast.expense@gmail.com](mailto:team.vast.expense@gmail.com)

- The Name of the Company
- The Website of the Company
- The Username of the company

A member of the Link team will then create a company profile for you and email you a temporary password for you to gain access to the Admin Interface. Once access is gained you can change your company details as you wish.

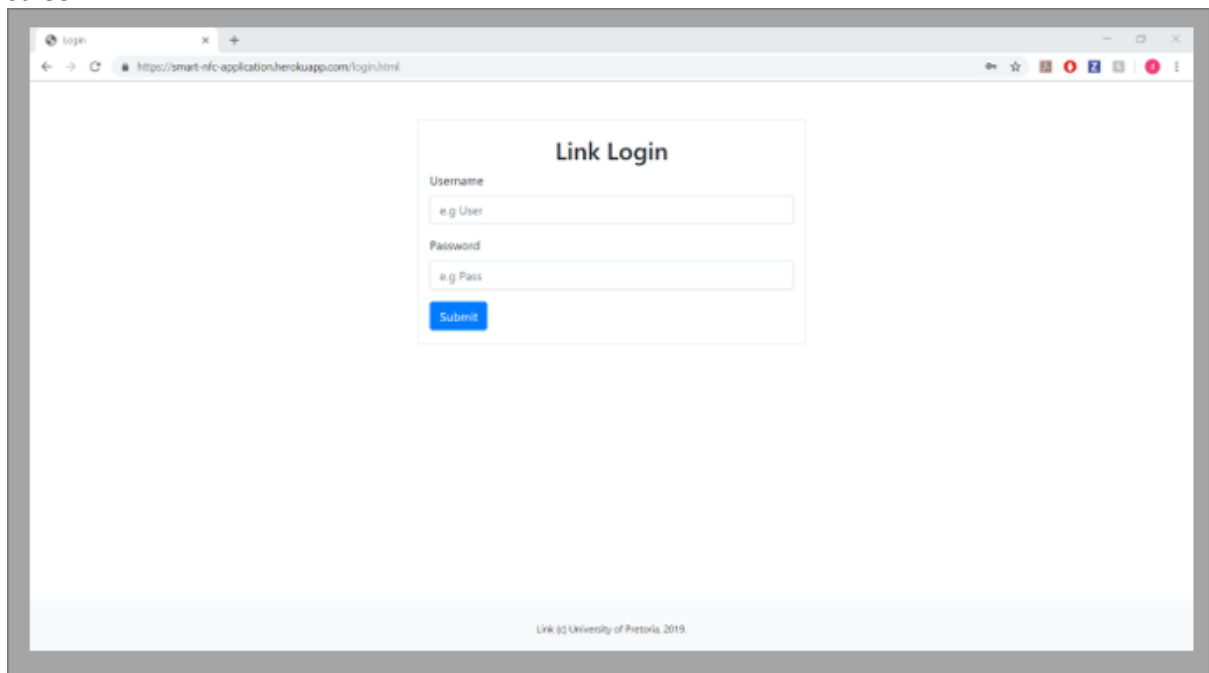


## Installation

No installation is needed to use the **Link Admin Interface**. Once a company profile has been created for you (see web interface configuration) you can go to <https://smart-nfc-application.herokuapp.com> in order to create all aspects of your company.

## Getting Started

Once a company profile has been created for you (see **Web Interface Configuration** above), you can go to <https://smart-nfc-application.herokuapp.com> where you should be greeted by the following screen:

A screenshot of a web browser window showing the 'Link Login' page. The browser's address bar displays 'https://smart-nfc-application.herokuapp.com/login.html'. The page has a white background with a central login form. The form is titled 'Link Login' in bold. It contains two input fields: 'Username' with a placeholder 'e.g User' and 'Password' with a placeholder 'e.g Pass'. Below these fields is a blue 'Submit' button. At the bottom of the page, there is a small footer that reads 'Link (c) University of Pretoria, 2019.'

If the above screen does not appear for you, please consult **Troubleshooting** below

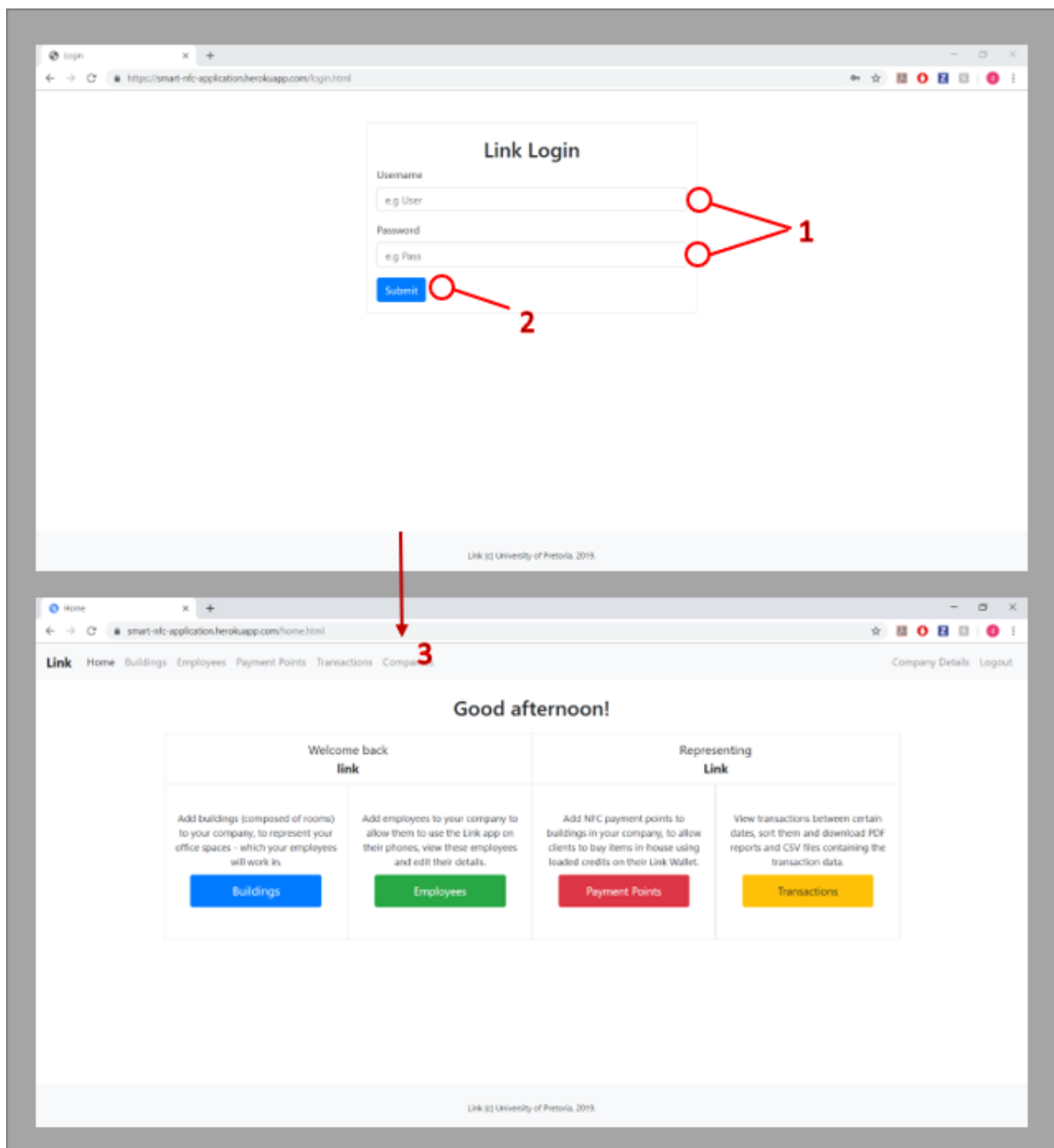
## Using the System

The following sections will explain how to use the Admin Interface. For each section, the corresponding picture of the steps will be presented below the textual steps.

### Login

If you have an account registered with Link and would like to login to the admin interface to manage the company, follow these steps:

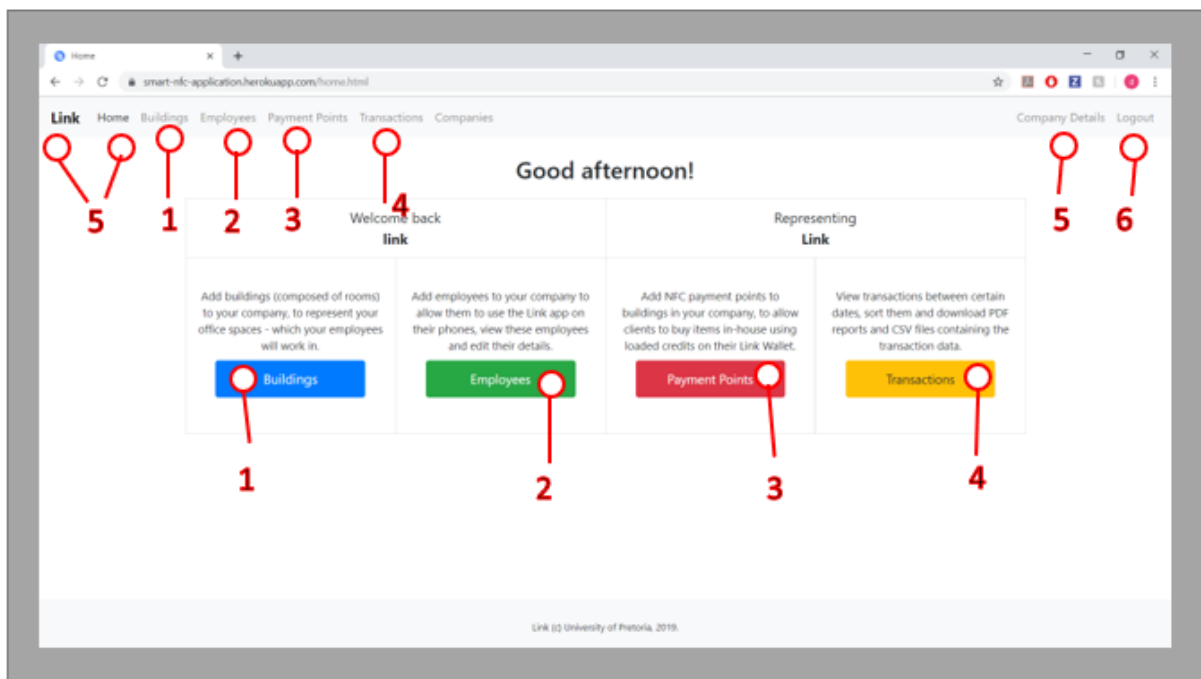
- 1) Fill in the username and password fields with your username and password credentials
- 2) Click the 'Login' button
- 3) If the credentials are correct you will be presented with the Home page. if the credentials are incorrect, you'll be presented with an error message.



## Navigating

Throughout the Admin Interface we use a navigation bar for easy navigation through the website. On the Home page there are additional buttons for navigation. The list below corresponds to the buttons on the picture presented below.

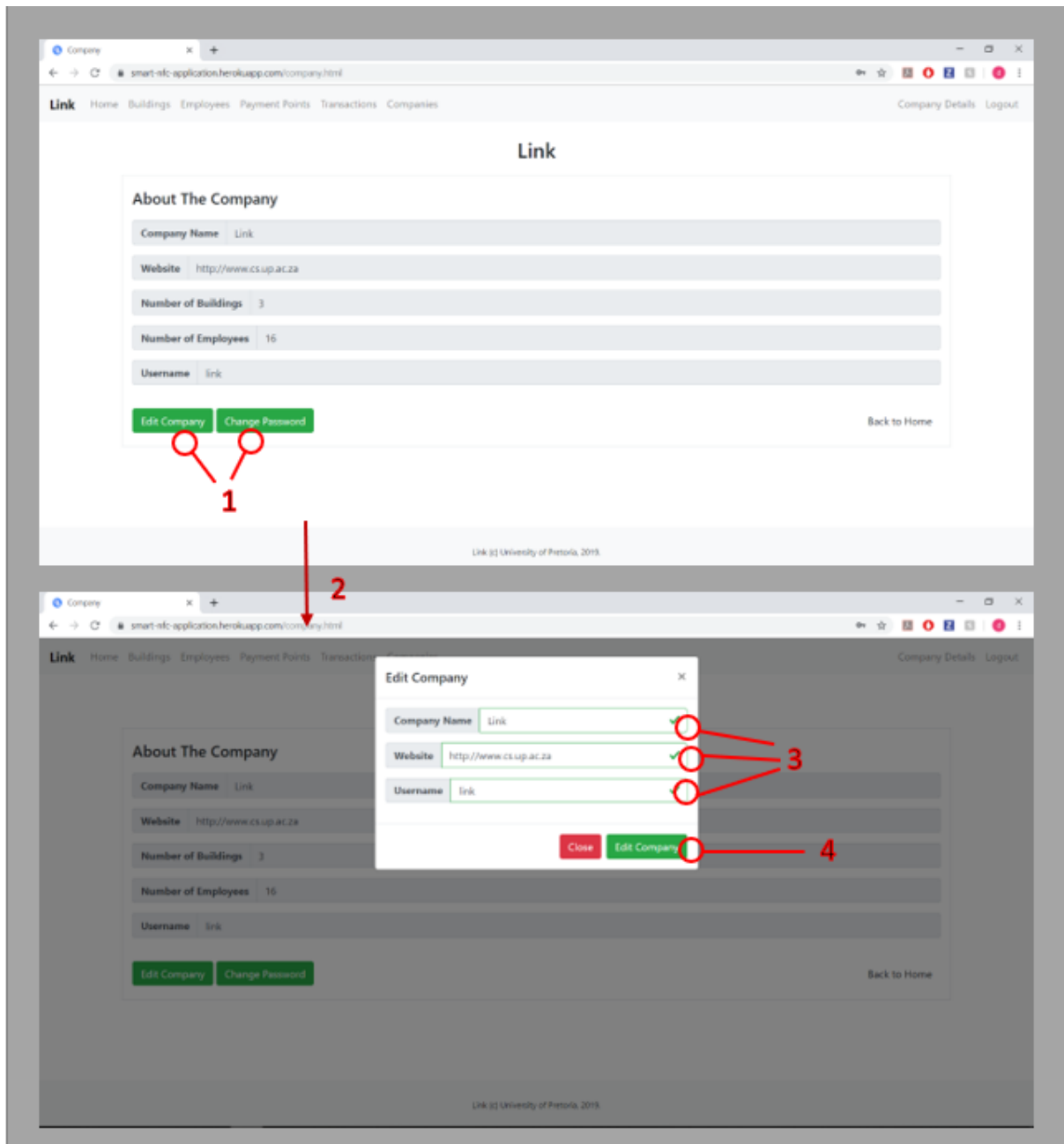
- 1) Will take you to the Building Page where you can add and maintain buildings as well as add rooms to buildings.
- 2) Will take you to the Employee Page where you can add and maintain your employees' details.
- 3) Will take you to the Payment Points Page where you can add and maintain payment points linked to your company.
- 4) Will take you back to the transaction page where you can see a comprehensive list of transactions that has taken place from payment points linked to your company.
- 5) Will take you to your company profile where you can see and edit you companies details.
- 6) Will log you out and take you back to the login page.



## Edit Company Details

Once you have navigated to the Company Profile screen and want to change the company details, follow these steps:

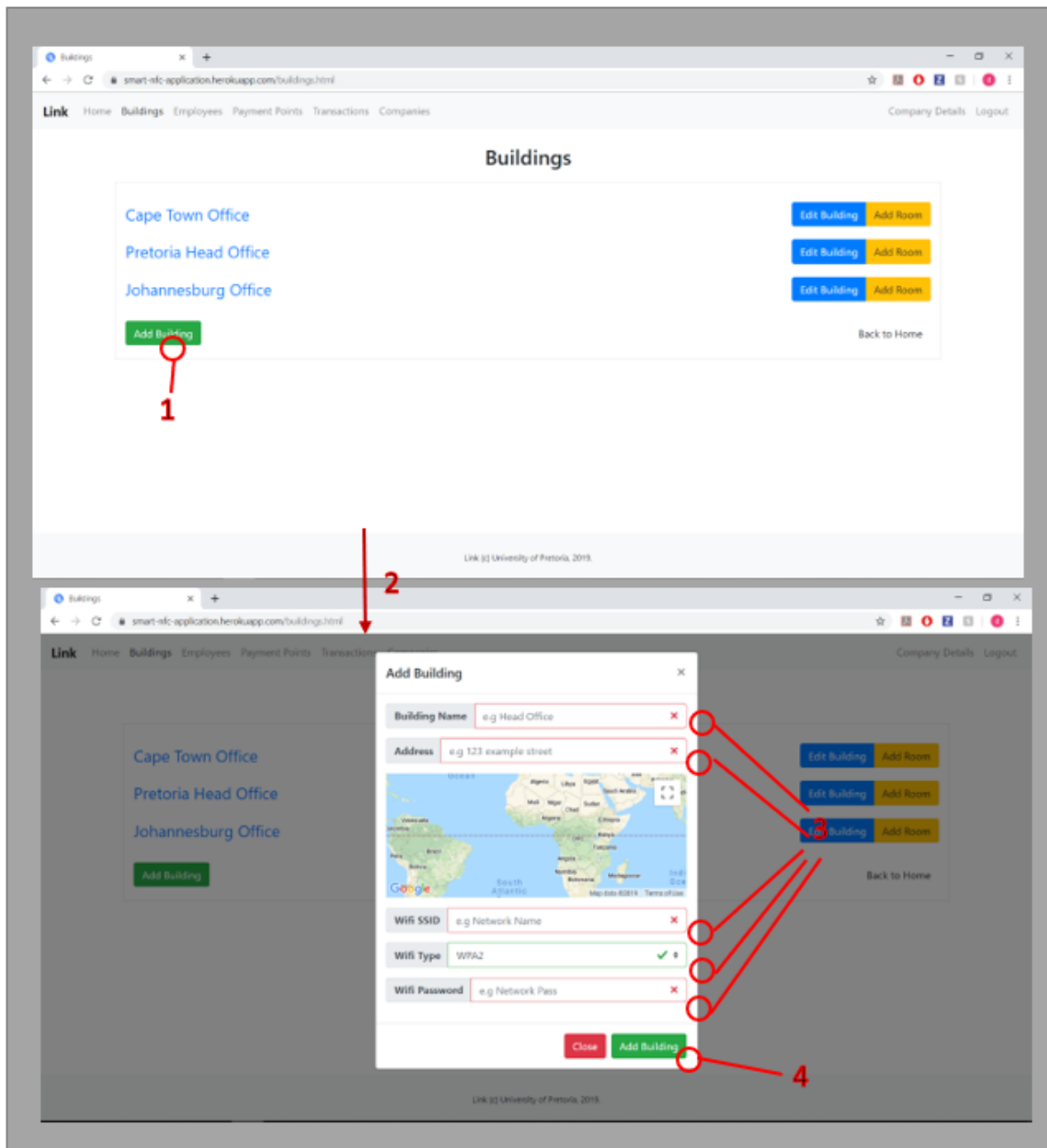
- 1) Click on the appropriate button for what you want to do - either changing the company details or changing the company profile password.
- 2) A pop up will appear with required fields
- 3) Fill in the fields with the updated details
- 4) Click the 'Edit Company' button in order to save the new details of the company. If the operation was successful, you'll be presented with a success message, else you'll be presented with an error message



## Add Buildings

Once you have navigated to the Building page and wish to add a building to your company, follow these steps:

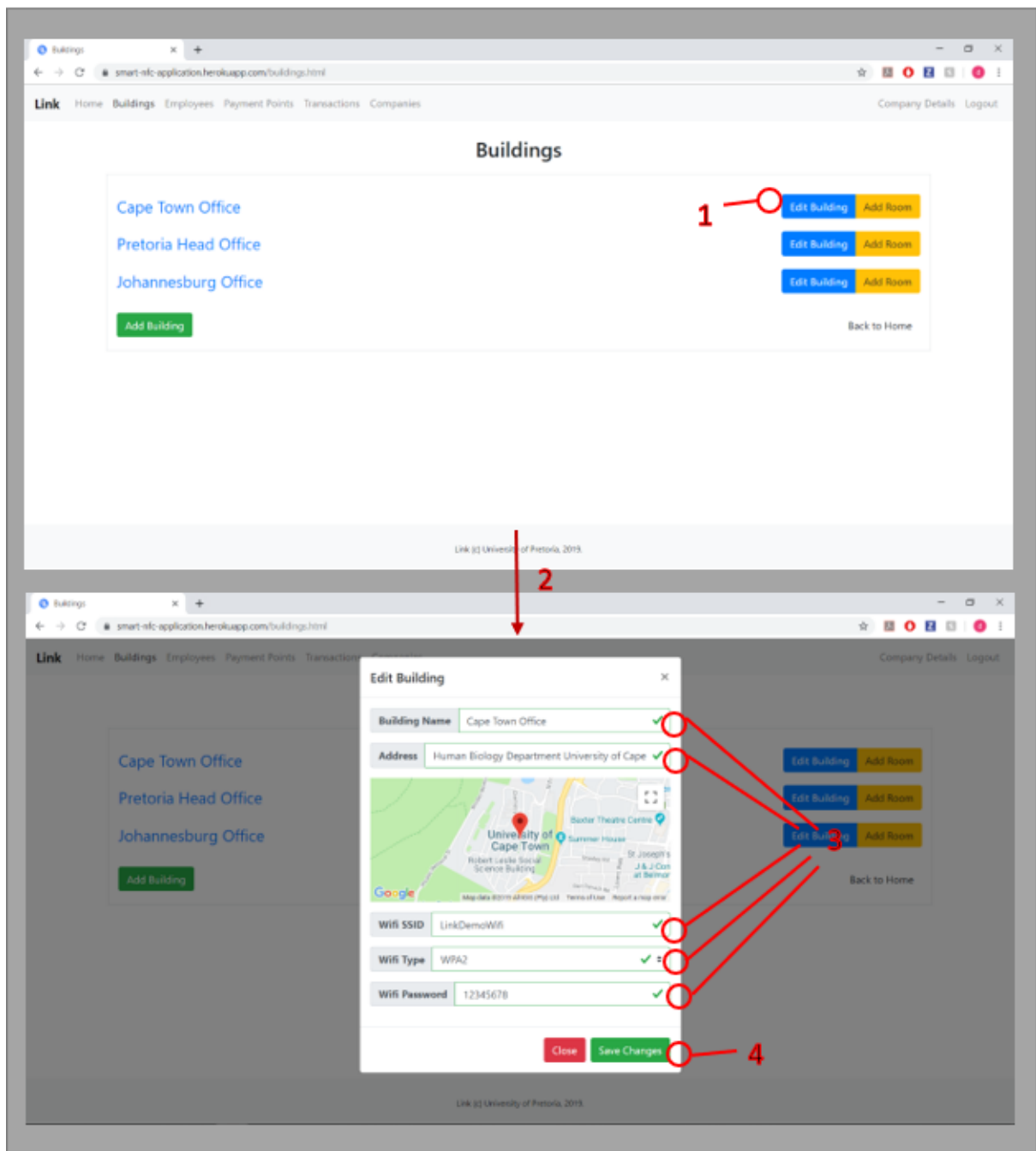
- 1) Click the 'Add Building' button
- 2) A pop up will be presented with empty fields
- 3) Fill in the fields of the new building you wish to add. The map will place a pin where you have set the location of your new building.
- 4) Click the 'Add Building' button to complete the operation. If the operation was successful, you'll be presented with a success message, else you'll be presented with an error message



## Edit Building details

Once a building has been created, you'll be able to edit the buildings details. To edit the buildings details, follow these steps:

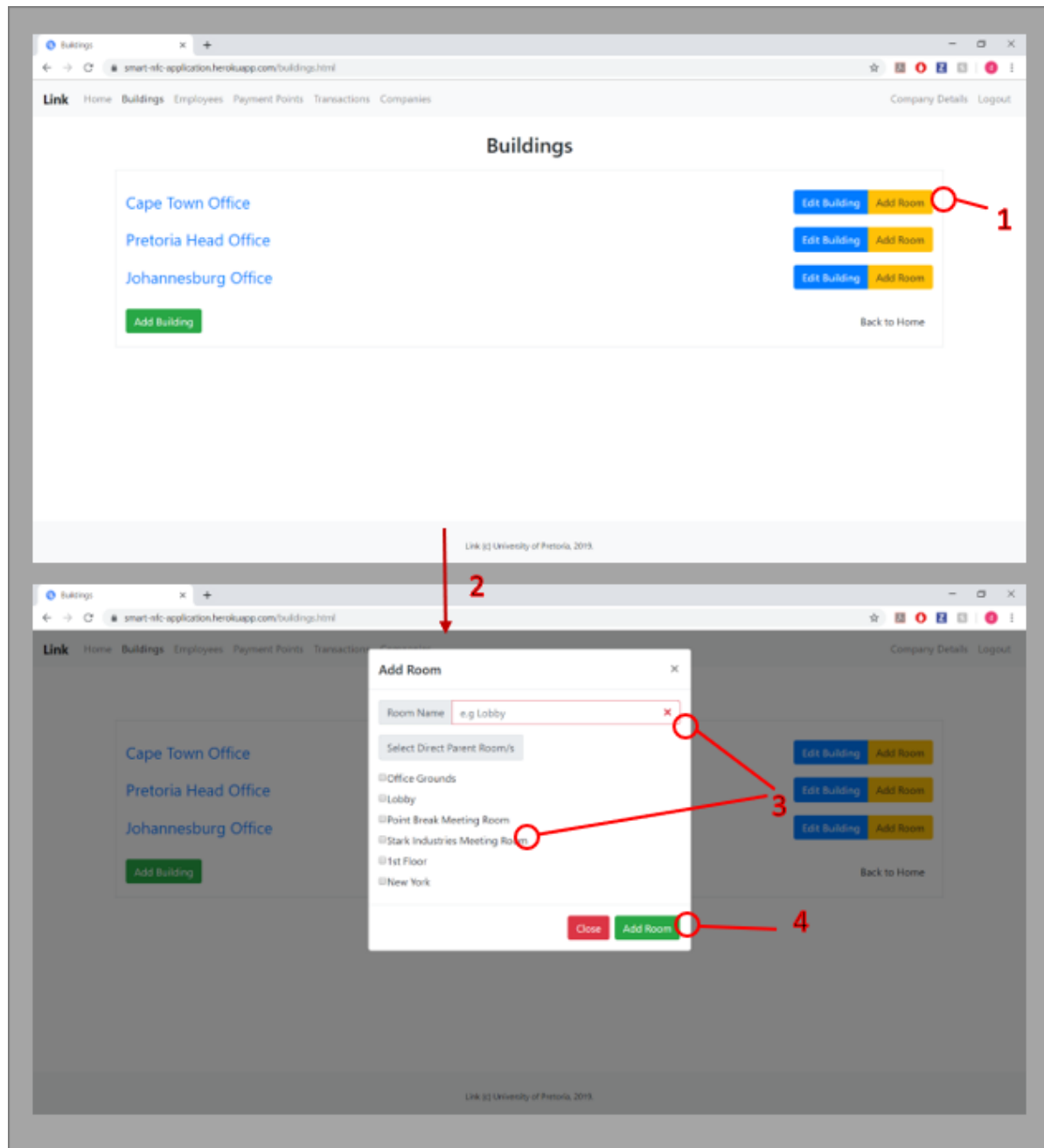
- 1) Click the 'Edit Building' button corresponding the building you want to edit
- 2) A popup will appear containing all the details corresponding to the company you wish to edit.
- 3) Fill in the updated details
- 4) Click the 'Edit Building' button to complete the operation. If the operation was successful, you'll be presented with a success message, else you'll be presented with an error message



## Add Rooms

Once a building has been created you can add buildings to the building. To create rooms, follow these steps:

- 1) Click the 'Add Room' button on the corresponding building you wish to add a room to.
- 2) You'll be presented with a pop up containing empty fields.
- 3) You'll need to enter the name of the Room as well as select rooms which lead to the current room. For example, 'Lobby' leads into 'Canteen'. If there is no room which leads into the current room being added, it defaults to the leading room being outside
- 4) Click the 'Add Room' button to complete the transaction. If the transaction was successful, you'll be presented with a success message, else you'll be presented with an error message



## Add Employees

Once you have created buildings you can now assign employees to these buildings. To add employees, follow these steps:

- 1) Click the 'Add Employee' button.
- 2) You'll be presented with a popup with empty fields
- 3) You'll need to fill in all the fields and select the building where this employee will be working.
- 4) Click the 'Add Employee' button to complete the operation. If the operation is successful, you'll be presented with a success message else you'll be presented with an error message

The top screenshot shows the 'Employees' page with a table of 10 employees. The 'Add Employee +0' button is circled in red and labeled '1'. The bottom screenshot shows the 'Add an Employee' modal form with red arrows pointing to each input field (First Name, Surname, Title, Cellphone, Email, Create Password, Confirm Password, and Building) labeled '3', and the 'Add Employee' button at the bottom labeled '4'.

ID	First Name	Surname	Email	Title	Cellphone	Work Email	Building	Action
4	Jim	Hood	JimHood@dayrep.com	Mr	085 555 4147	JimHood@dayrep.com	Cape Town Office	Edit
5	Scarlett	Tomlinson	ScarlettTomlinson@gmail.com	Mrs	084 340 0731	team.vast.expansive@gmail.com	Johannesburg Office	Edit
6	Columbus	Ponce	ColumbusPonce@jouragide.com	Mr	085 742 5784	ColumbusPonce@jouragide.com	Cape Town Office	Edit
7	Bradley	King	bradleyking@gmail.com	Mr	083 872 6126	team.vast.expansive@gmail.com	Johannesburg Office	Edit
8	Jack	Sharpe	jackSharpe@gmail.com	Mr	084 161 6889	jackSharpe@gmail.com	Johannesburg Office	Edit
9	Noah	Hull	NoahHull@armyspy.com	Mr	083 509 4584	team.vast.expansive@gmail.com	Cape Town Office	Edit
10	Ben	Nich	benNich@hotmail.com	Mr	083 200 9880	benNich@hotmail.com	Pretoria Head Office	Edit

Showing 1 to 10 of 16 entries

Previous 1 2 Next

Back to Home

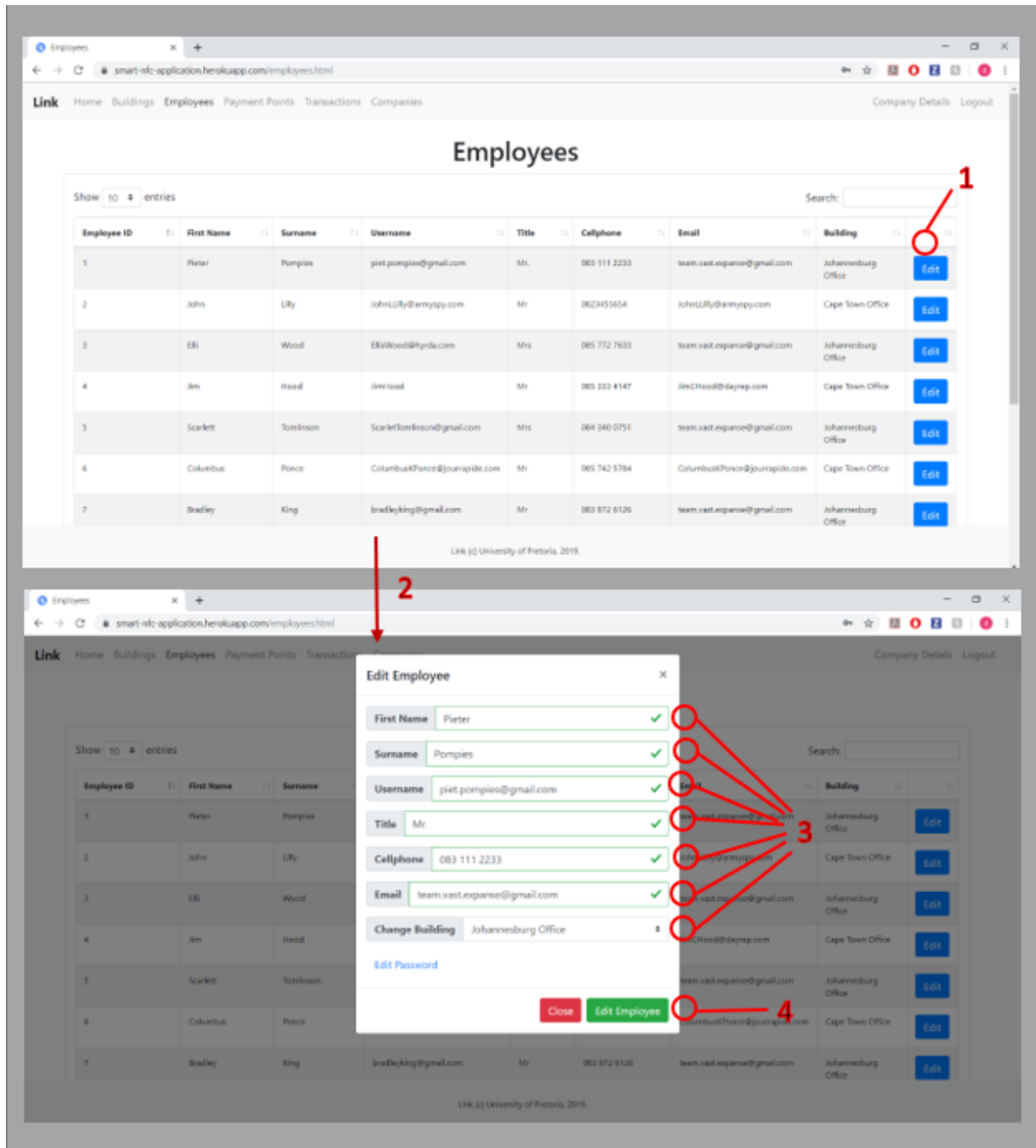
Link 10 University of Pretoria, 2019.



## Edit Employee Details

Once an employee has been created, you can then edit the details of the employee.

- 1) Click the 'Edit Employee' button corresponding to the employee entry you wish to edit
- 2) You'll be presented with a pop up filled with the details of the employee you are editing
- 3) Edit the details that you want to change
- 4) Click the 'Edit Employee' button to complete the operation. If the operation was successful, you'll be presented with a success message, else you'll be presented with an error message



## Add Payment Points

Once you have created buildings you can now add payment points to this building. To add payment points, follow the steps below:

- 1) Click the 'Add Payment Point' button.
- 2) You'll be presented with a popup for creating a new payment point
- 3) Fill in the necessary information needed for a payment point
- 4) Click 'Add Payment Point' and you'll receive a prompt stating whether it was successful or not.

The image consists of two screenshots of a web application interface, illustrating the steps to add a payment point.

**Top Screenshot:** The 'Payment Points' page is shown. It features a table with columns: Payment Point Id, Building, and Description. The table contains three entries. Below the table, there is a green button labeled 'Add Payment Point' with a plus icon. A red circle with the number 1 highlights this button.

**Bottom Screenshot:** The 'Add a Payment Point' modal is displayed. It has a 'Description' field with the value 'e.g. John' and a 'Building' dropdown menu. At the bottom of the modal, there are two buttons: 'Close' and 'Add Payment Point'. A red circle with the number 2 highlights the modal itself. A red circle with the number 3 highlights the 'Add Payment Point' button. A red circle with the number 4 highlights the 'Add Payment Point' button.

## Edit Payment Points

Once a payment point has been created, you can then edit the details of the payment point.

- 1) Click the 'Edit' button corresponding to the payment point you wish to edit.
- 2) You'll then be presented with a popup filled with the details of the payment point you wanted to edit
- 3) Fill in the necessary updated information for that payment point
- 4) Click the 'Edit Payment Point' Button and you'll be presented with a prompt saying if your edit was successful or not.

The image displays two screenshots of a web application interface for managing 'Payment Points'.

**Top Screenshot:** The 'Payment Points' page shows a table with columns: Payment Point Id, Building, and Description. The table contains three entries:

Payment Point Id	Building	Description
1	Pretoria Head Office	Vida e Caffé
2	Pretoria Head Office	Wans Coffee Shop
3	Johannesburg Office	Starbucks

An 'Edit' button is circled in red and labeled '1' next to the first entry. Below the table, there is a green 'Add Payment Point' button and a 'Toggle this switch for dark mode' option.

**Bottom Screenshot:** The 'Edit Payment Point' modal is open, showing the details of the selected payment point (Id 1). The modal has fields for 'Description' (Vida e Caffé) and 'Change Building' (Pretoria Head Office). A red arrow labeled '2' points to the modal. Red circles and labels '3' and '4' point to the 'Description' field and the 'Edit Payment Point' button respectively. The background shows the same table as the top screenshot.

## Using the Transaction page

Once a Payment point has been created, transactions can start to occur at those payment point. To view and do other certain actions with the transactions follow the steps below:

- 1) Chose whether you want to search for all the transactions that have occurred or if you want to do an advanced search
- 2) You'll be presented with a table full of transactions that have occurred at payment points made by employees of your company.
- 3) You can refresh the table and search again
- 4) You can generate a pdf containing all the transactions currently displayed on screen
- 5) You can generate a excel file containing the transactions that are currently displayed on screen

The screenshot displays the 'Transactions' page of a web application. The page has a navigation bar with links: Link, Home, Buildings, Employees, Payment Points, Transactions, and Companies. The main heading is 'Transactions'. Below the heading are two buttons: 'Search All Transactions' and 'Advanced Search'. A red circle with the number '1' points to the 'Search All Transactions' button. Below this, a red arrow with the number '2' points to the 'Transactions' link in the navigation bar. The page shows a table of transactions with the following data:



Employee Name	Employee Surname	Employee Email	Amount Spent	Date Time	Payment Description	Payment Point Description
Bradley	King	team.vast.expense@gmail.com	40	2019-08-12 08:50	None	Starbucks
Bradley	King	team.vast.expense@gmail.com	10	2019-08-12 08:46	None	Starbucks
Bradley	King	team.vast.expense@gmail.com	32.5	2019-07-25 14:53	Caffe Latte	Vida e Caffe
Bradley	King	team.vast.expense@gmail.com	32	2019-07-25 14:52	Ice Latte	Vida e Caffe

Below the table, there are three buttons: 'Search Again', 'Download PDF', and 'Download CSV'. A red circle with the number '3' points to the 'Search Again' button, a red circle with the number '4' points to the 'Download PDF' button, and a red circle with the number '5' points to the 'Download CSV' button. The page also shows a 'Showing Results for:' dropdown menu set to 'All transactions', a 'Showing 1 to 4 of 4 entries' message, and a 'Back to Home' link.

## Troubleshooting

### The Link Admin Interface won't open/ isn't working properly

Try the following steps below, after each step checking whether it fixed your issue.

- 1) Make sure you are trying to access <https://smart-nfc-application.herokuapp.com/>
  - a) If you are not trying to access the above website, then click on the link above
- 2) Refresh the page by clicking refresh  in the top left of the browser or by holding down CTRL and pressing F5
- 3) Check Your internet connection
  - a) Try accessing other websites
  - b) Check your connection – in the case that **a)** fails
    - i) If you are using a Wi-Fi , try to use a network cable instead
    - ii) If you are using 3G, try to connect to the internet on a different computer using the 3G modem
  - c) If the above have not worked, try rebooting your router/ modem.
  - d) If you still don't have an internet connection, contact your ISP (internet service provider) for assistance
- 4) Contact Links development team
  - a) Contact the development team by sending the issue to [team.vast.expense@gmail.com](mailto:team.vast.expense@gmail.com).