# Project description

In the following document, we will consider a visitor to be a user without an account, and a user to be a user with an account.

## Interface

We aim to deliver the following functionality to all users and visitors:

1. Check the exchange rates everytime they open the website/app

2. Check the following statistics and insights about the each of the buy and sell exchange rates:

1. Standard Deviation, which is a standard measure for experienced users

2. Seven Day Average, which is helpful in comparision with a 3 day average

3. Trend (upward or downward) which is simply calculated now but can be improved further

The stats also include volume for USD and LBP:

1. All time volume fun stat for our app :)

2. Daily volume useful to know the trading volume to see demand/supply

3. Check graphs that show the evolution of the exchange rates over the course of all time, where each where each datapoint represents the opening value of the exchange rate every day

4. A caculator that provides the visitors with 4 functionalities:

1. Convert USD amount to LBP according to BUY rate

2. Convert USD amount to LBP according to SELL rate

3. Convert LBP amount to usd according to BUY rate

4. Convert LBP amount to usd according to SELL rate

5. The ability to record a new transacation that has already happened for it to factor in the new rates

The stats methods will all be implemented in the fetchrates method, so they will be updated after adding every transaction

We aim to deliver the following functionality for users only:

1. Seeing a record of past transactions which were added when logged in as user

## Marketplace

### What

The marketplace is a way to effectuate a peer to peer transaction. If two parties are interested in effectuating a transaction for a specific amount, where one party is buying USD and the other is selling, determining if this a buy or sell trade becomes a little bit blurry, as this model is different than the standard exchange place transaction where the demand and supply is clear.

This is the reason we do not add the peer to peer transacation to our transaction databse which affects the rate, and leave it up to the users to add this trade as a transaction if they want to, since the functionality is provided.

### Why

A listing consists of an amount in USD or LBP and another amount I want in return of my initial amount, in the opposite currency. For maximum secrecy, anonymity, and practicality, we decided not to put the phone number of the lister in the listing (not having visitors bypass using the application or call the lister and negotiate price). Only a user can add a listing, to provide the user more functionality than a normal visitor, and provide an elegant way to save previous listings instead of letting visitors self check their listings by id for example (if the listing is anonymous, we cannot notify the lister that his listing was accepted by someone or keep track of listings). Not to limit the functionality of a visitor and make the market a user-only function, we decided that the market will be visible for everyone and we will allow confirmation of listings by phone number (no need for a user-id). The question was whether to provide the "accepter" with contact details of the lister (directly after accepting), but to increase benefits of a user, we decided to only allow the user to know the contact details of the accepter and allow him to initiate contact everytime.

### How

A user posts a listing, it shows in the marketplace and in a tab of his listings where he can se the history of listings he posted and differrenciate between accepted and unaccepted listings by checking a phone number field, which will be filled with thephone number of the "accepter" or otherwise be null. Everyone can visit the marketplace. When somoeone (user or visitor) accepts the listing and adds his phone number, it will be removed from the market directly (and won't be added as a transaction for the reason mentioned in the What paragraph), and the phone number of the "accepter" will be direcctly added to the user listings tab. A user can delete listings (accepted and not), which will automatically update the user listings and market (remove it from there). We limit the confirm and delete listings methods to only support a one by one choice of listings not to allow for scripts and bots.