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Grip

Description

Whenever you go out with friends either for food or for other activities that you have to pay for, it can be frustrating and time consuming to determine how much each person should pay for their own share. In addition, since there is typically one copy of the receipt, it can be hard to remember what you paid for a few weeks later. Grip allows you to calculate the total amount that each person should pay and send a copy of the receipt to each person through email. And if you ever need to access previous receipts through the app, there is a record saved in our database!

Intended User

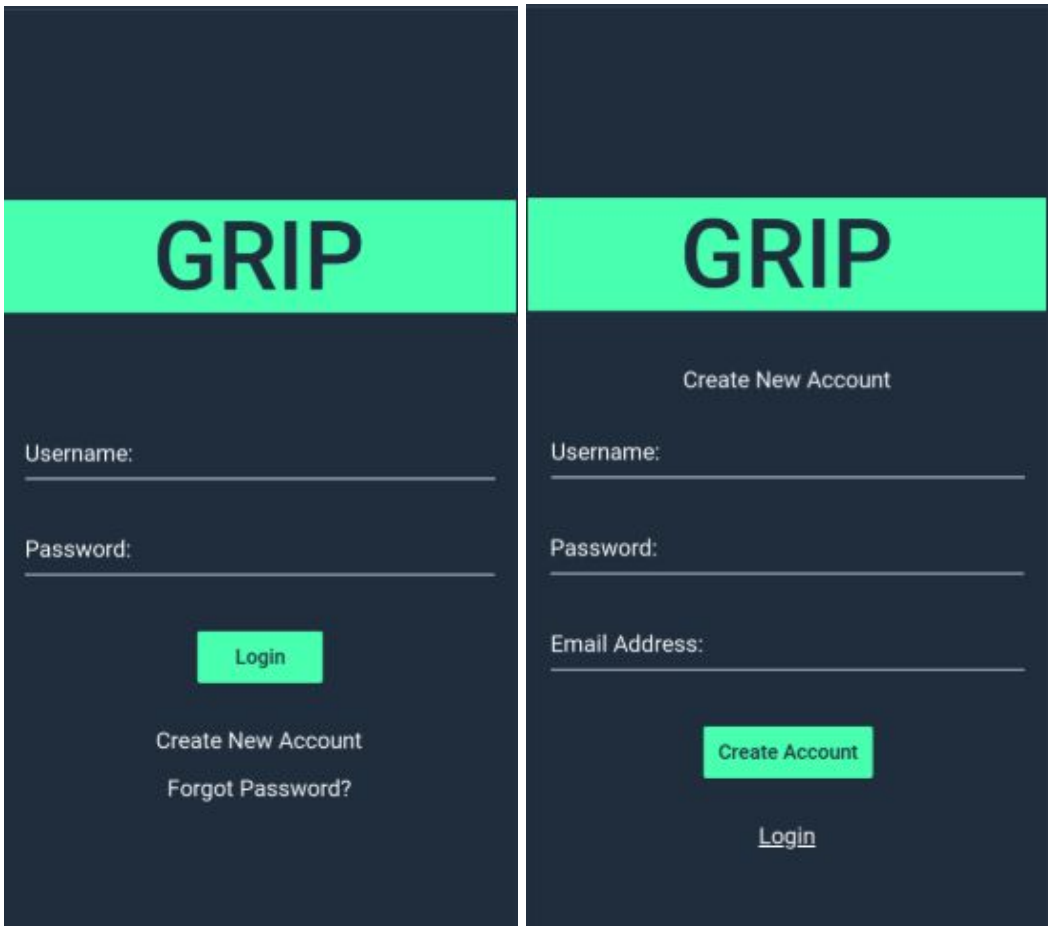
This app is suitable for everyone who enjoys going out with friends and wants to handle the split payments quickly and easily! The app's default language is English but it can be customized in the settings to allow for more accessibility.

Features

- Create an account and sign in to view previous receipt records
- Create and add items with their prices to a list that will calculate the total bill
- Customize tax and tip rates in settings menu
- Take a picture of the receipt
- Email a copy of the bill to multiple recipients
- Receipt record is saved in an online database
- Display a Widget in the home screen for quick bill calculation!

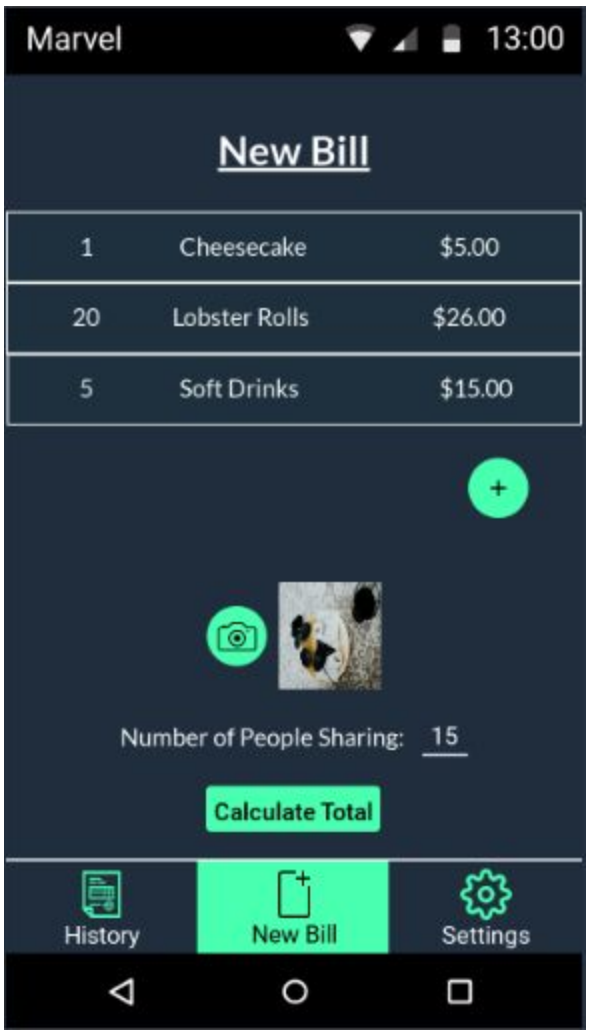
User Interface Mocks

Login Screen



First screen that the user sees is Login Page, they are able to log in, create new account or request password change if they forgot their password

New Bill Screen

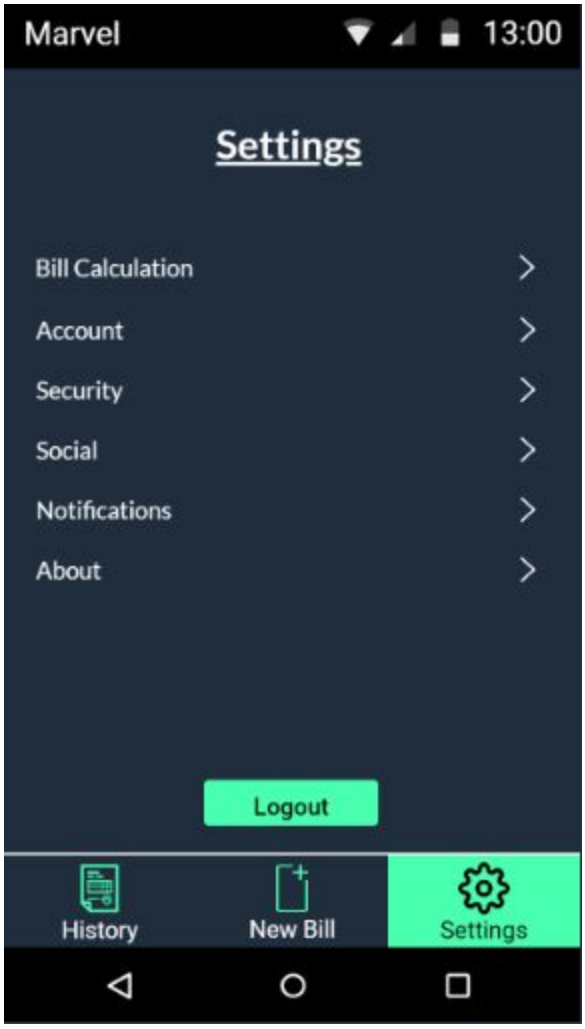


User will be brought to this page after logging in. They can add various items to the bill, take a picture of the bill, and set how many people are sharing so that an accurate total will be calculated for them. The calculate total button will open a window displaying the total amount that each person has to pay and the user has the option of saving this bill to the history tab.

History Screen

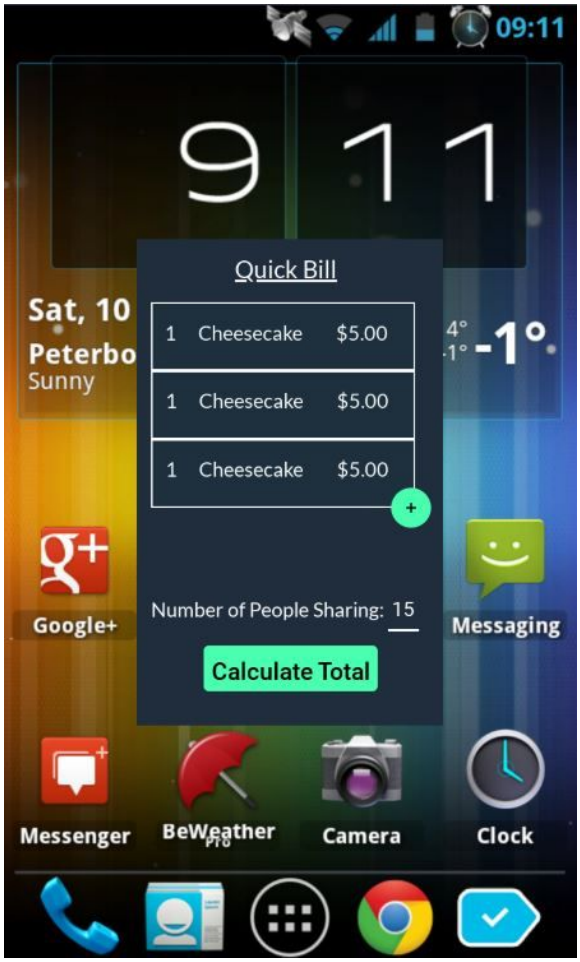
Saved bills from the New Bill tab will be saved and listed in this page. The user can tap on any of the bills to see more details about it or delete it from their history.

Settings Screen



The Settings page will allow the user to customize the tax rate and add tip (if necessary) to their new bill creation. The user will also be able to change account settings such as username, password, and email. The Security section will list which devices have logged into this account. The Social section will allow the user to share this app through social media. The notifications section will allow the user to enable/disable notifications that remind the user to use this app if they go out with friends. The About section will list the app version. The user can also log out of the app in this page.

Widget Screen



The Widget will allow users to quickly calculate a bill to share between a group of people. Items can be added in a similar fashion as the New Bill Page and the Calculate Total button will behave in the same way as well. When the widget is first created, it will prompt the user to input preferences for tax and tip rates.

Key Considerations

What language will this app be written in?

Java

How will your app handle data persistence?

Previous receipt records will be saved in a Firebase Realtime database. They will also connect the receipt records to the user account.

Describe any edge or corner cases in the UX.

New Bill Page

- If a user taps an item in the New Bill tab, it will prompt the user to whether they want to delete it or not.

- The + floating action button will move down when a new item is created.
- The camera button will prompt the user to open the camera app
- If there is no items or input for number of people sharing, the user will not be able to calculate total

History Page

- Tapping back button on the phone will go back to New Bill Page

Settings Page

- Tapping back button on the phone will go back to New Bill Page
- When exploring each setting section, a back arrow will appear on the top to allow the user to go back or the user can tap the back button on the phone

General Errors

- If there are network errors or the user forgets to input a value for a field, a snackbar will be displayed providing an error message

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

- Gradle and Android Studio libraries (support, design, expresso & etc… 27.1.1)
- Butterknife to handle view binding (8.8.1)
- Timber for easier logging (4.7.1)

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

- Firebase Authentication will be used for logging in/out
- Firebase Realtime Database will be used for storing previous receipt records
- Analytics for tracking user activity

Next Steps: Required Tasks

Task 1: Project Setup

- Add Butterknife dependency to build.gradle file
    - implementation 'com.jakewharton:butterknife:8.8.1'

      annotationProcessor 'com.jakewharton:butterknife-compiler:8.8.1'
- Add Timber dependency to build.gradle file
    - implementation 'com.jakewharton.timber:timber:4.7.1'

Task 2: Implement UI for Each Activity and Fragment

- Build UI for Login Page Activity
- Build UI for Navigation Activity
    - Add Bottom Navigation
    - Build UI for New Bill Page
    - Build UI for History Page
    - Build UI for Setting Page
- Enable RTL layout switching

- Keep all resources (images, colors, strings, themes) in separate resource files

Task 3: Implement Firebase Authentication

- Create and set up project with Firebase authentication
- Implement signing in, create new account and forgot password functionalities in Login Page

Task 4: Implement Firebase Realtime Database

- Create and set up project with Firebase Realtime Database
- Connect app to database and display mock data in History Tab
    - Use an AsyncTask to retrieve this data as a background process
- Implement view data detail and delete data functionalities in History Tab
    - This should be a window and it also allows the record to be shared via email

Task 5: Create New Bill

- Implement functionality for adding new items to bill, have a window pop up for users to fill out quantity, item name, and price
- Implement photo taking functionality and display photo in the page
- Implement calculate total functionality which uses total price of items, tax rate, tip and number of people sharing to calculate what each person should pay
    - Should be displayed in a window and allow users to save receipt record to database and/or email to other people

Task 5: Setup Settings

- Create settings/preferences for the following sections:
    - Account: change username, password, or email
    - Bill Calculation: change tax rate, enable/disable tip and input a tip value
    - Devices: View devices that have logged into the user's account
    - Social: Share this app with the user's friends on social media
    - Notifications: Enable/disable notifications to tell user to use this app when they go out
    - About: Display app version
- Create Logout button to logout users

Task 5: Create Widget

- Create layout file for widget
- Load tax rate and tip preferences into widget
- Allow user to calculate total for each person to pay after they input all the items and the number of people sharing