Mobile Application (ST0281) CA2

Report — Budgefy App Documentation

Academic Semester: 2

Module Code: ST0277

Module Name: Mobile Application

Module Class: DIT/FT/2B/03

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Date of Submission: 6 February 2016

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Table of Contents

1 Objective of Budgefy **2**

2 Key Features of Budgefy **3**

2.1 Splash Screen and Log In 3

2.2 Add Receipt Record via Camera 5

2.3 View Receipt Records and Details 9

2.4 Update Receipt Record 10

2.5 Delete Receipt Record 11

2.4 Add Receipt Record via Gallery 12

2.5 Add Receipt Record via Manual Input 13

2.6 View Expense Summary 14

2.7 About tab and Email Feedback 15

2.7 Logout 16

1 Objective of Budgefy

The mobile application (app) developed by our team is a personal expense tracking app called “Budgefy”. The objective of Budgefy is to provide users a more efficient way of tracking expenses.

The main target audience for Budgefy is adults. From our user research, many adults face difficulty in cultivating the habit of keeping track of personal expenses. It is challenging to be frugal in this day and age due to excessive consumerism. More often than enough, money is spent incessantly, excessively and frivolously without concern nor regard whether it is a justified purchase.

Based on our user research, the two traditional methods of recording one’s expenses are:

1. Manually writing down by hand using paper and pen
2. Microsoft Excel sheets

Although these traditional methods accomplish the same goal of tracking expenses, it is actually counter-productive in the long-run. Due to the sheer amount of expense data, It is too tedious to manually calculate it daily. Hence, it requires one to expend considerable amount of time and effort to maintain such archaic records. This results in a situation whereby some people simply forgo the habit of tracking expense altogether.

Budgefy streamlines the arduous and repetitive process of recording one’s daily expenses. Users can access this Android app ubiquitously to take a photo of a receipt to instantly generate and store an expense record.

Bufgefy utilises a technology called Optical Character Recognition (OCR), which is used to extract text from a receipt image. Budgefy processes the extracted data to identify information such as merchant name, total amount spent and date. Furthermore, it calculates and displays an expense summary to give user an overview of their spending.

2 Key Features of Budgefy

2.1 Splash Screen and Log In

When the app is first started up, the splash screen will be displayed for a duration of 3 seconds as shown below in Fig. 1.

Once the splash screen disappears, a dialog will be displayed to prompt user to choose a Google account to sign in. (Fig. 2)

Fig. 1 Splash screen

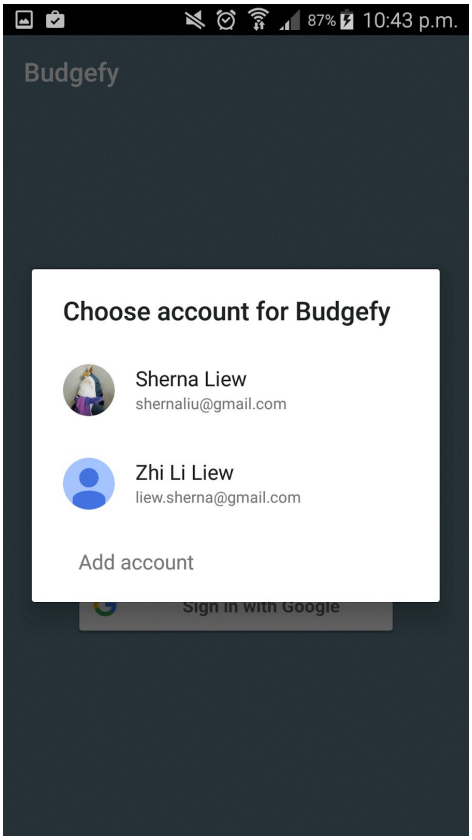


Fig. 2 Log In

Once the user is logged in, users will see a tab navigation. (Fig. 3)

There is a total of 3 tabs, Home, Summary and About. The first page the user is in is the Home page. This is where all the Expense records are displayed in a ListView. Currently, as a new user, the page is empty.

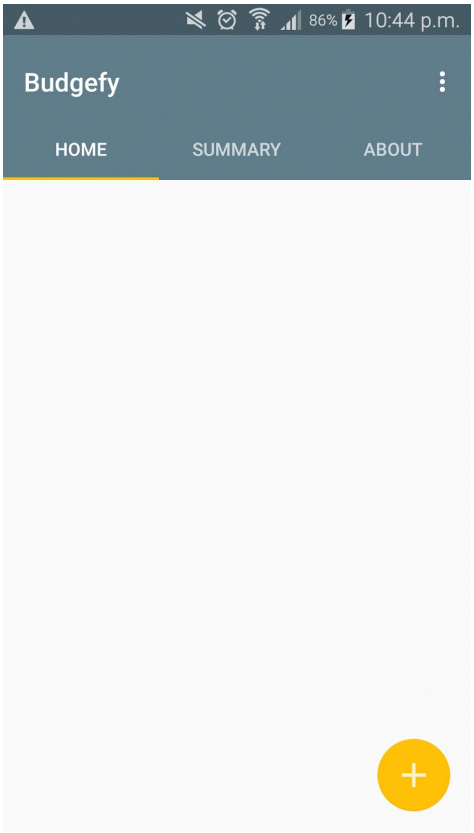


Fig. 3 Home Activity

2.2 Add Receipt Record via Camera

The three ways to add a receipt record is through the camera, gallery and manual input. To add a record, the user has to tap on the yellow + button and an additional 3 floating buttons will pop up. (Fig. 4)

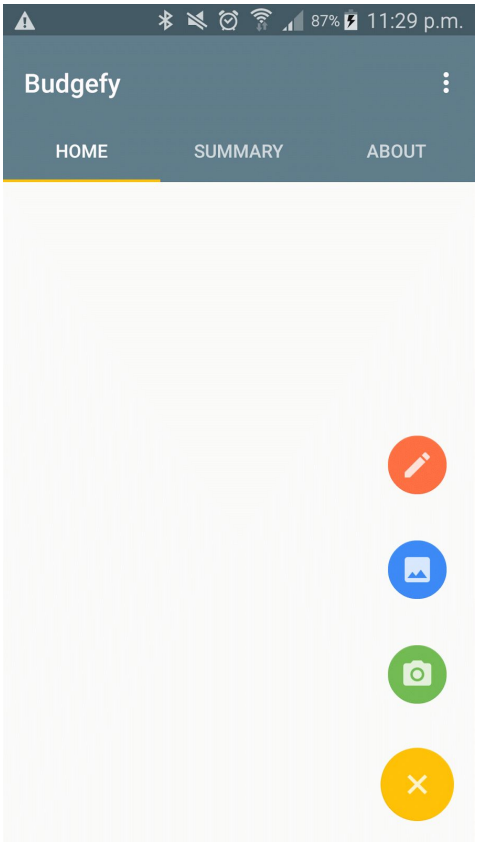


Fig. 4 Add Record Floating Action Buttons

The green picture icon is to add receipt record via Camera. The blue picture icon is to add receipt record via Gallery. Lastly, the orange pencil icon is to manually add the receipt record. When the additional floating buttons are displayed, the yellow + button is animated to rotate 90° to resemble an X cancel button, so that users can tap on it to close the additional floating buttons.

To add a new Receipt Record through the camera method, users can tap on the green camera icon, and it will use an Implicit Intent to open up the default camera app on the phone, as shown in Fig. 5.

Users can then tap on the Camera button to take a picture of the receipt.

Fig. 6 shows how a user can adjust his Picture size to 2.4 Megapixels. It is recommended to use lower camera megapixel setting so that the image file size is much smaller, as this significantly reduces the amount of time it takes to upload the image file to the OCR API.

Fig. 5 Camera Activity

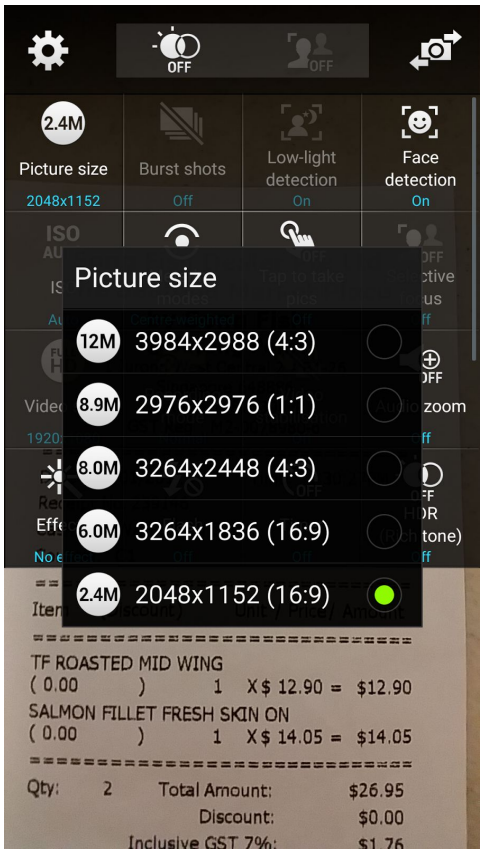


Fig. 6 Adjust Picture Size

Once the user has taken a picture, the screen will display the Add Receipt Record activity, where the OCR-ed text are automatically generated into the EditTexts such as Merchant Name, Date and Total Amount Spent.

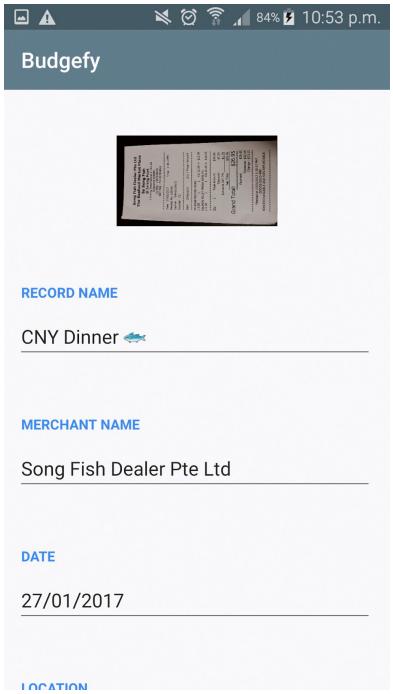
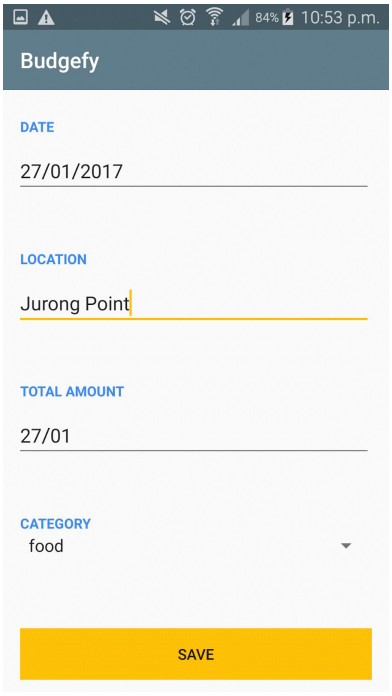


Fig. 7 Add Receipt Record



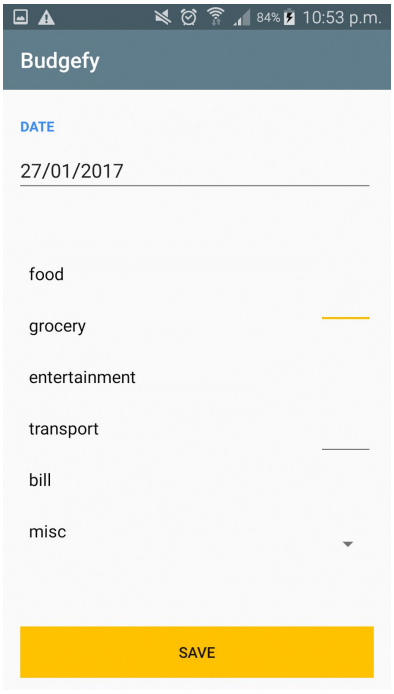


Fig. 8 Category Spinner

User will enter the record name and location. If there are any fields incorrectly OCR-ed or unable to be OCR-ed, users will supplement the missing information. Users can also change the category of his expense by tapping on the Spinner drop down menu as shown in Fig. 8. The user can select one of the 6 categories, which are food, grocery, entertainment, transport, bill and misc.

Once users have keyed in all the fields, users can tap on the Save button to save the record.

Once the Save button is tapped, a progressDialog is displayed to show how much percentage of the image is uploaded to Firebase storage. This lets users know that the image is currently being uploaded at this stage.

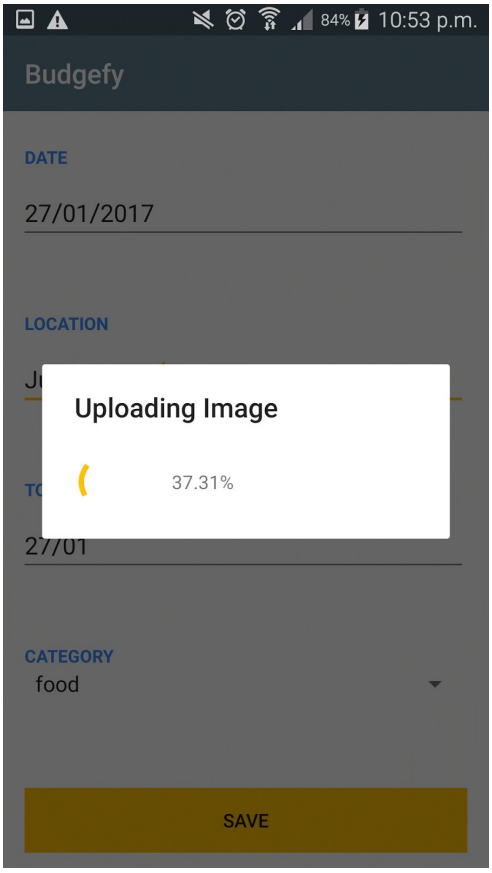


Fig. 9 Upload Image Progress Dialog

2.3 View Receipt Records and Details

Once the receipt record is created, it will be shown in the ListView in the Home tab. (Fig. 10) The black icon is an image that represents the Food category the user have selected earlier. The blue text 'CNY Dinner' is the record name given by the user, and the user have purposely keyed in $0.0 for the amount spent for this record.

To view the receipt record, users can tap on that record, and it opens up the View Receipt Detail Activity, where more details are shown. (Fig. 11) In this activity, user can choose to Edit this record (pencil icon) or delete the record (red trash can icon).

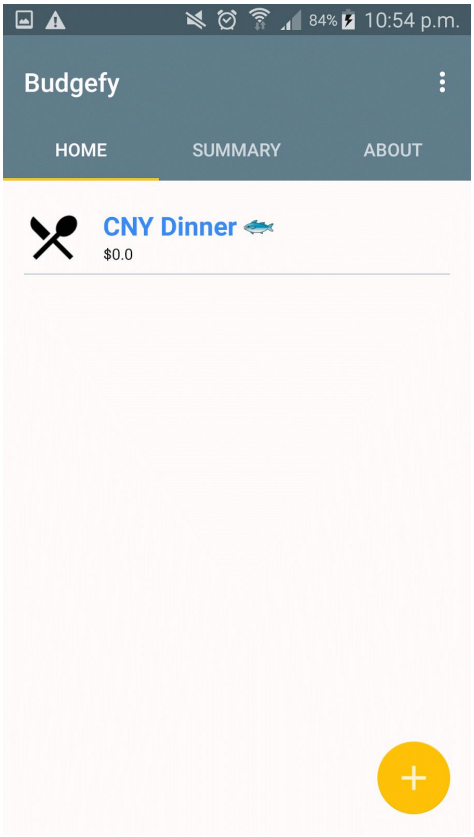


Fig. 10 Home Activity

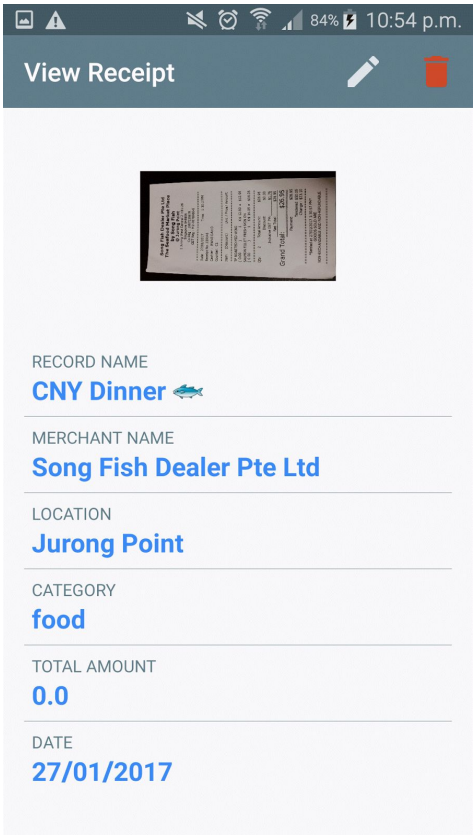


Fig. 11 View Receipt Details Activity

2.4 Update Receipt Record

Users can edit the record by tapping on the pencil icon, which will bring them to the Update Receipt Record activity as shown in Fig. 12. It displays an ImageView of the receipt of this record, a button to update the image. Users can edit any EditText field he wishes to. In this case, the user is editing the total amount to 26.95.

Once the user is done editing, he can tap on the Update button to save changes.

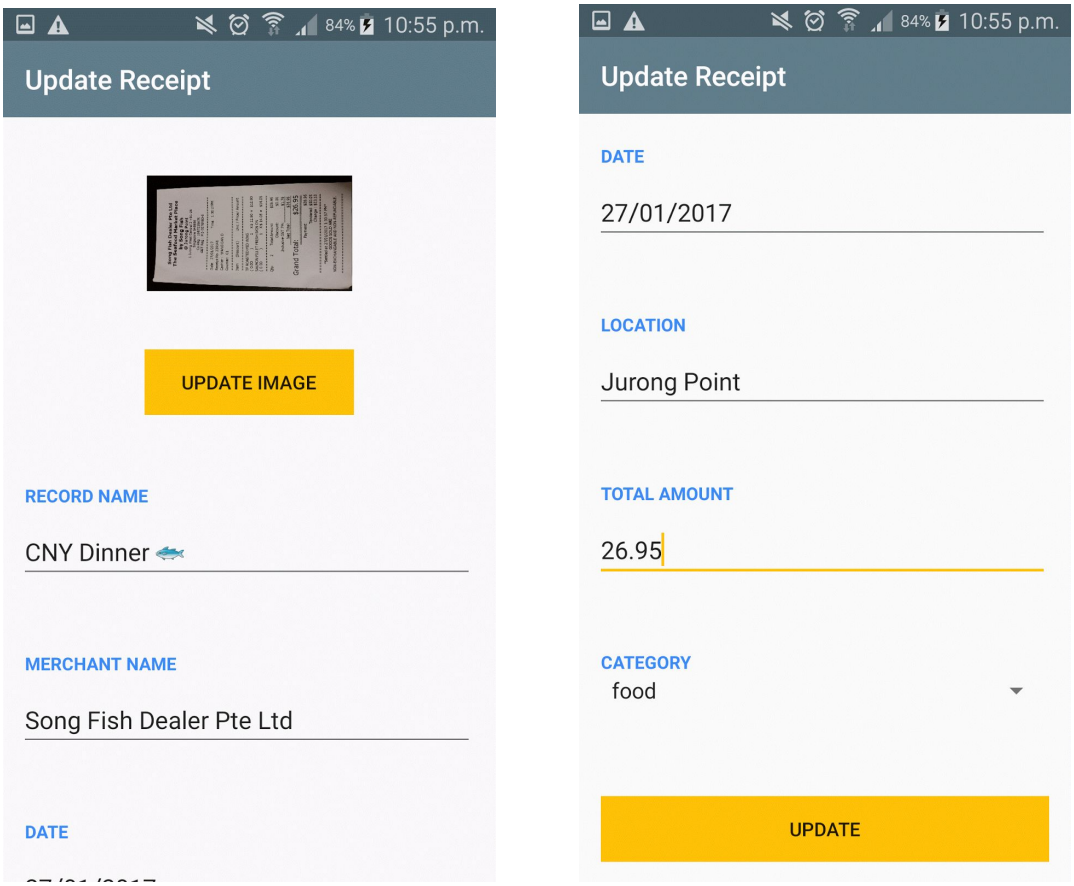


Fig. 12 Edit Receipt Record Activity

2.5 Delete Receipt Record

In the View Receipt Details activity, the user can tap on the red trash can icon to delete the receipt record he is currently viewing. A confirmation dialog will be displayed to prompt the user to confirm the action. (Fig. 13) This confirmation dialog helps to prevent users from accidentally deleting records due to mis-clicks.

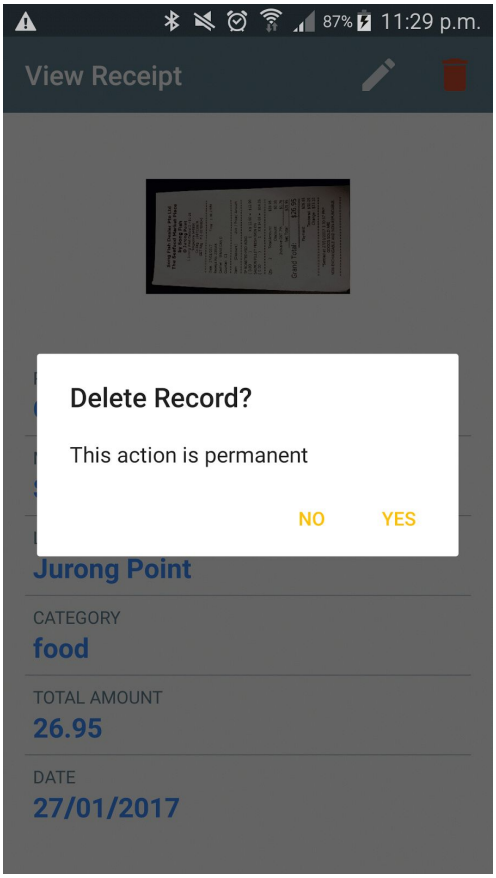


Fig. 13 Delete Receipt Record

2.4 Add Receipt Record via Gallery

To add a new Receipt Record through the camera method, users can tap on the blue picture icon, and it will use an Implicit Intent to open up the default gallery app on the phone, as shown in Fig 14.

User can then choose the desired image to use and it will go through the same steps as Add Receipt Record via Camera, from Fig. 7 to Fig. 10.

Fig. 14 Gallery

2.5 Add Receipt Record via Manual Input

Sometimes, there are scenarios where there is no physical receipt issued to the user. Thus, users can create a manual receipt record by tapping on the orange pencil icon in the Home page and they will manually key in all of the information as shown below in Fig 15.

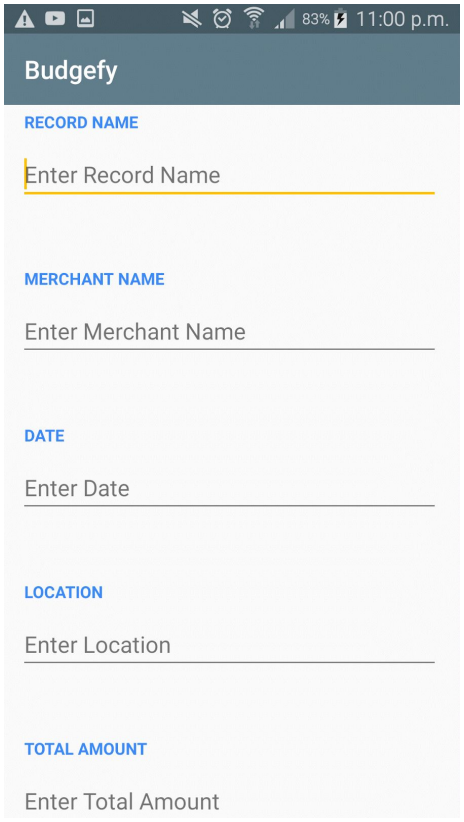


Fig. 15 Create Receipt Record manually

2.6 View Expense Summary

Users can navigate to the Summary tab to have an overview of his spendings. (Fig. 16) There are 5 CardViews which displays:

- Limit Amount
- Total $ spent
- Average $ spent/day
- Highest $ spent
- Lowest $ spent

The Limit Amount is the amount of money the users do not want to exceed. This can be changed by tapping on the red pencil icon, and a dialog with EditText appears, as shown in Fig. 17.

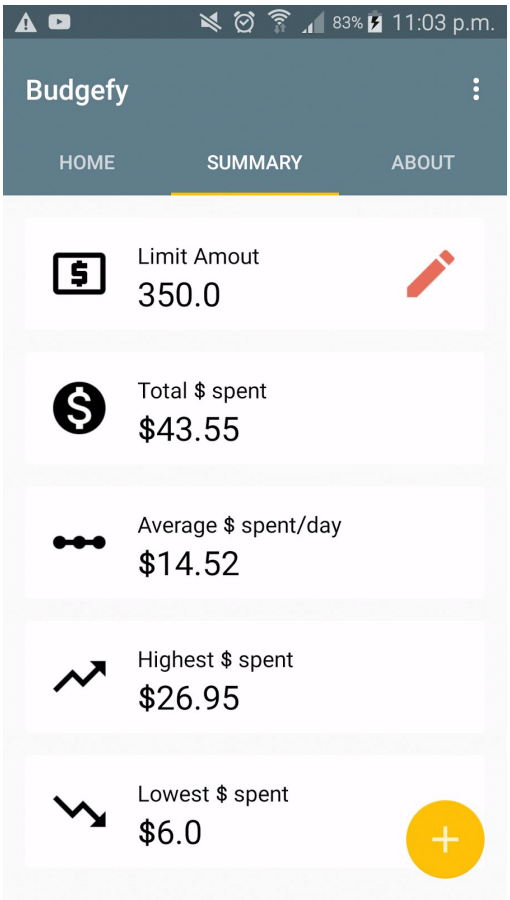


Fig. 16 Expense Summary tab

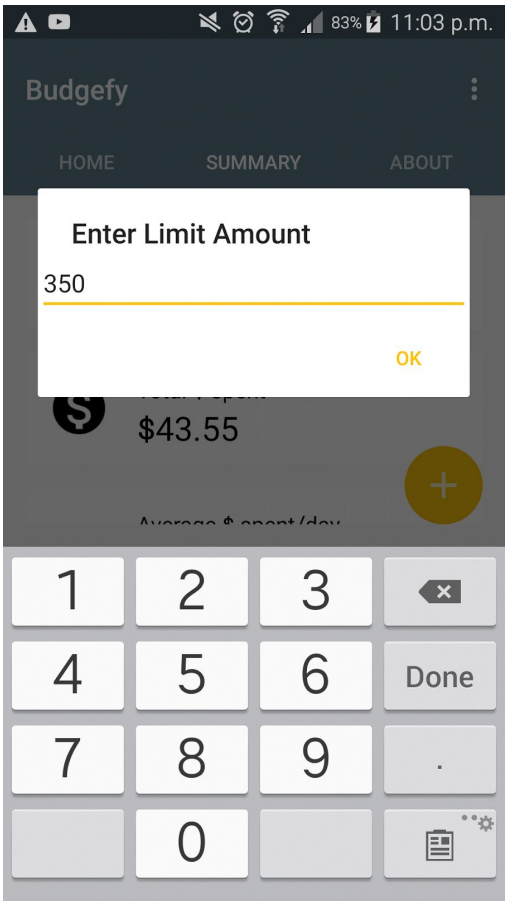


Fig. 17 Edit Limit Amount Dialog

2.7 About tab and Email Feedback

The last tab is the About tab, which displays the developer team's details. (Fig. 18)

There is an Email Us button for users to send feedback to the developer. When user taps on the Email Us button, it uses an Implicit Intent to open up any Email app available on the phone. (Fig. 19)

The destination email address, email header and email opening is automatically generated so that users can immediately type their email contents.

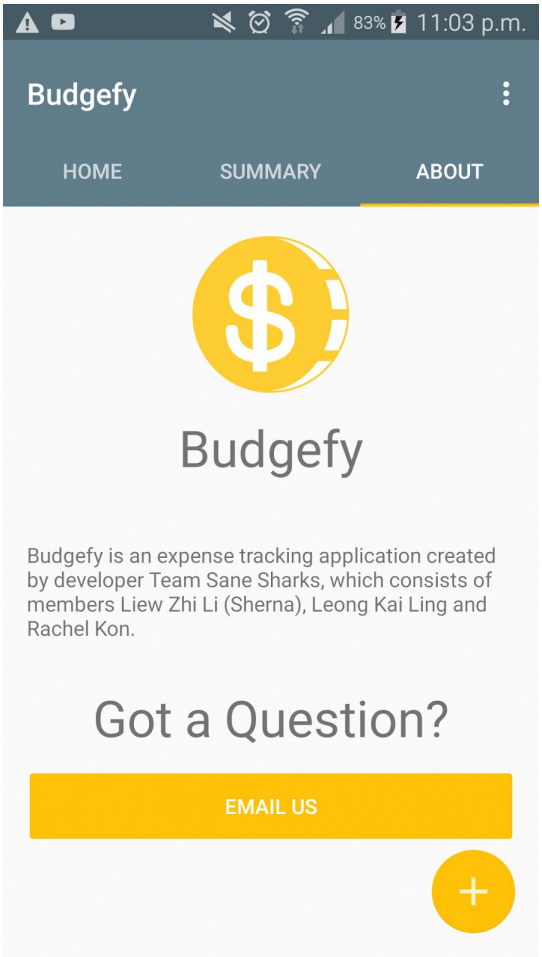


Fig. 18 About tab

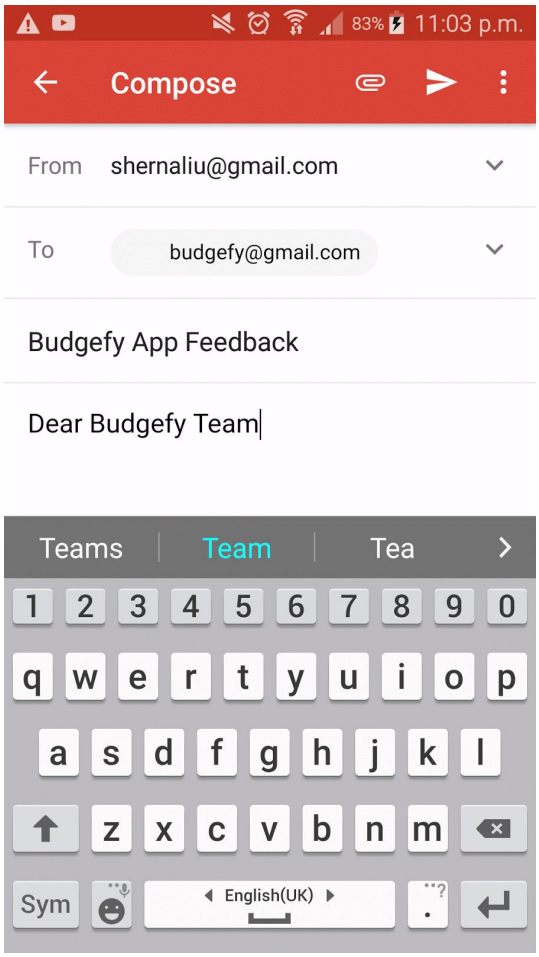


Fig. 19 Gmail app

2.7 Logout

Users can log out of their Gmail account by tapping on the overflow menu on the top right and tap on Logout. (Fig. 20)

Once the user is logged out, the Google account sign in screen as shown in the beginning is displayed. (Fig. 2)

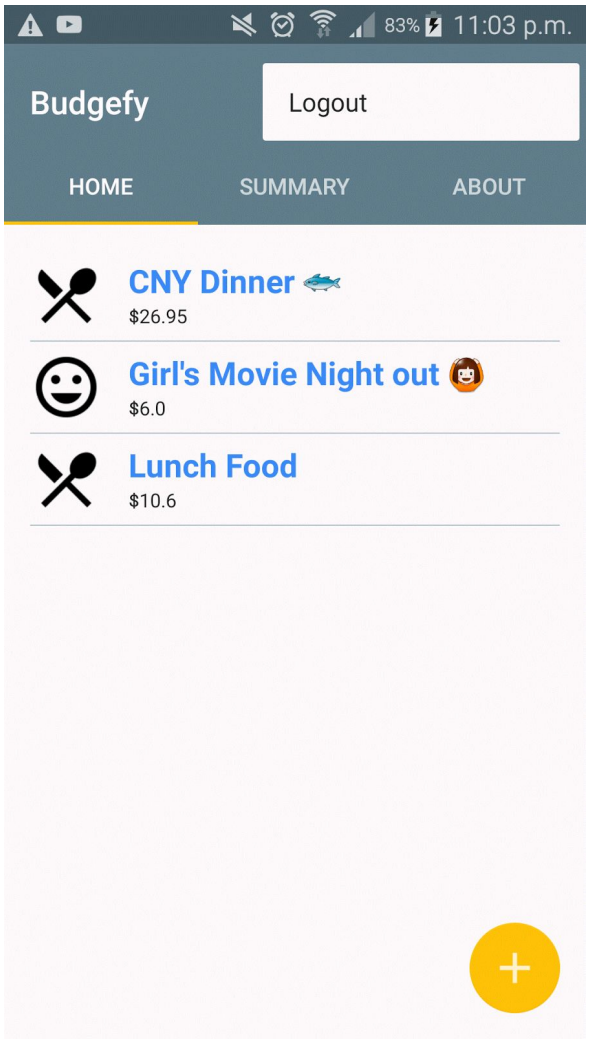


Fig. 20 Logout in Overflow Menu