CASH CONTROL

Control your cash

Development Team:

Aryan Tyagi (101816022)

Prabdeep Singh (101816014)

Arindam Sharma (101816003)

Mehul Singh Teya (101816021)

Participated in:

Hack-O-Wasp hackathon

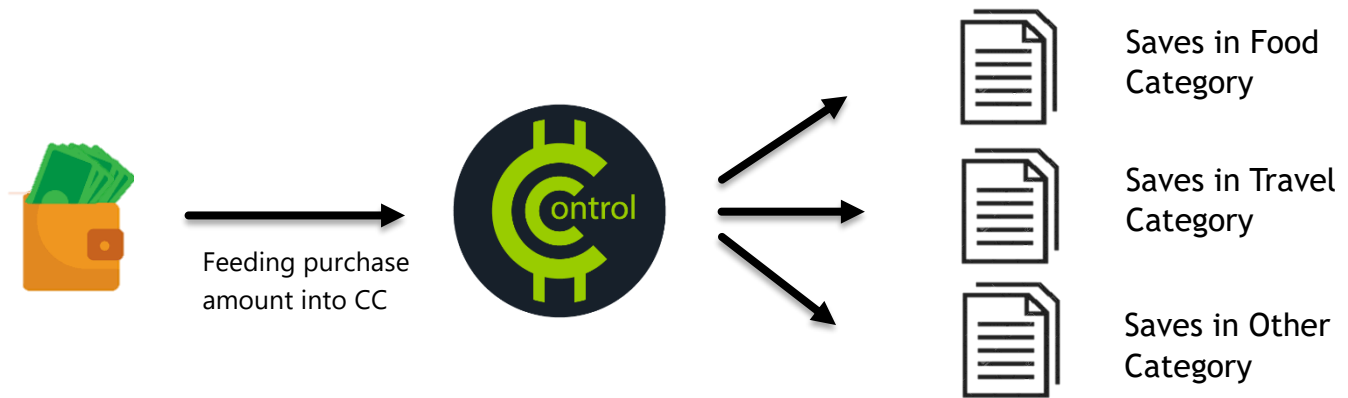On 20th and 21st April 2019.

TIET, Patiala.

Introduction

An app that helps you in keeping track of your expenses by storing your transactions with date and time categorically and predicting your next purchase in each category using Machine Learning. It also uses Geofencing to remind you to log any transactions of the cash you might have spent while you were out.
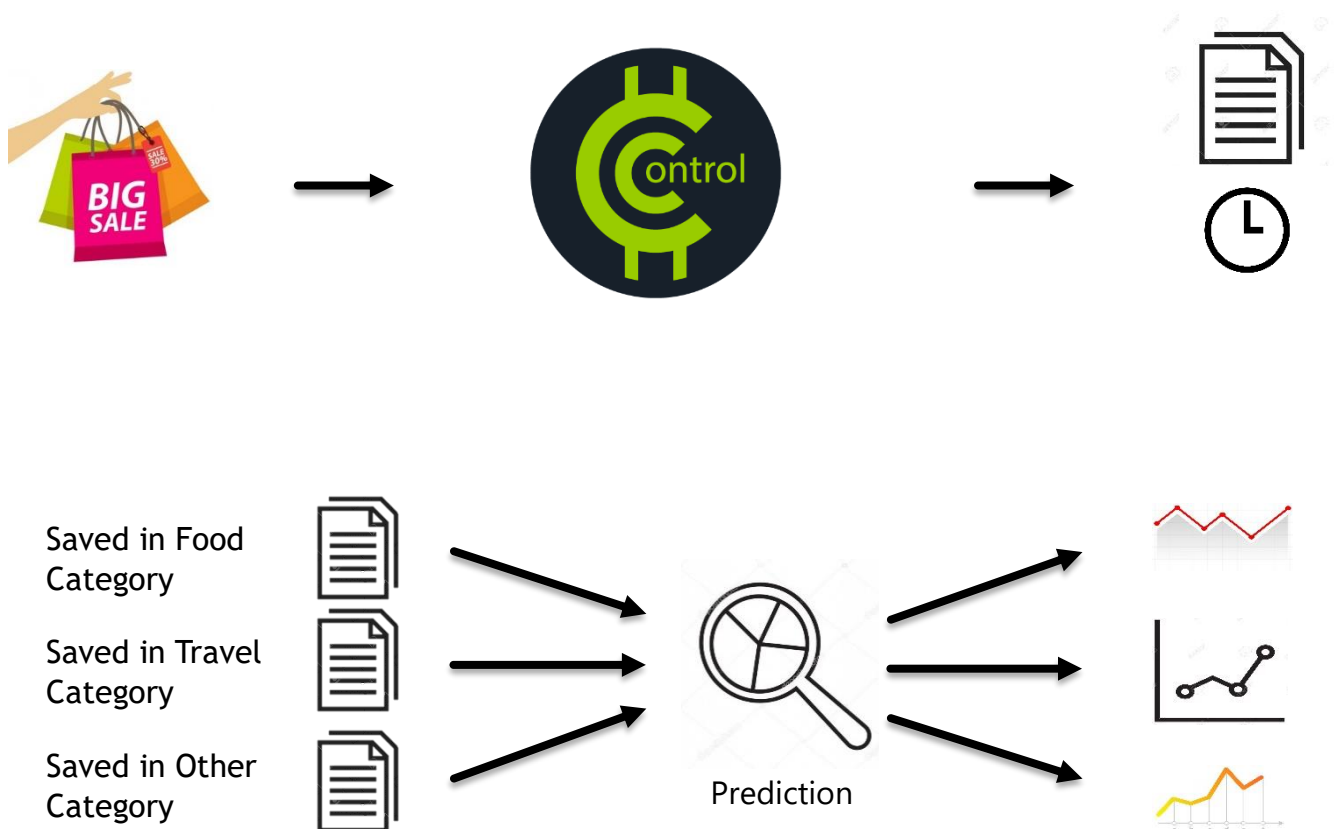
Technologies Used:

➢ The project was developed in Android Studio using Java and XML.
➢ It utilises SQLite database to store user info and transaction history.
➢ It uses linear regression analysis for prediction in the Machine Learning model.
➢ The project was hosted on GitHub and Git was used for version control.
➢ Library used for drawing graph: graphView

http://www.android-graphview.org/

Planning and Design

Flowchart of the working of Cash Control

Feeding purchase amount into CC

Saves in Food Category

Saves in Travel Category

Saves in Other Category

Expenditure history is stored with a timestamp automatically.

Saved in Food Category

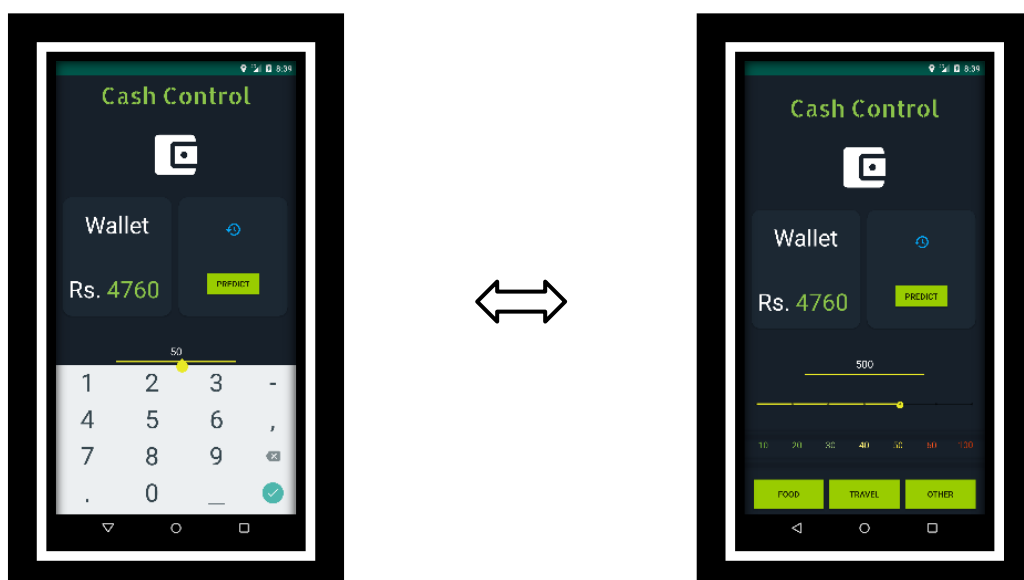Saved in Travel Category

Saved in Other Category

Prediction

How Cash Control Works

1. First register with your name and your current wallet balance
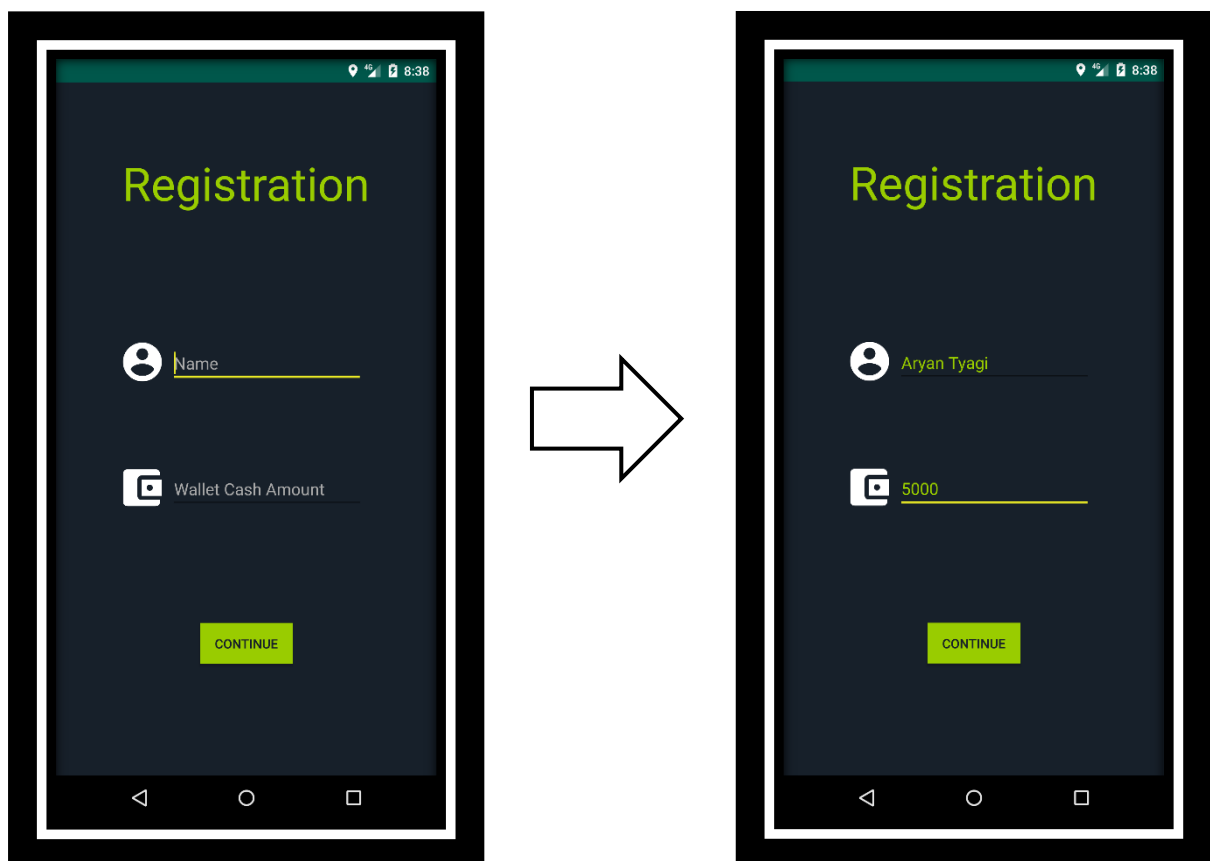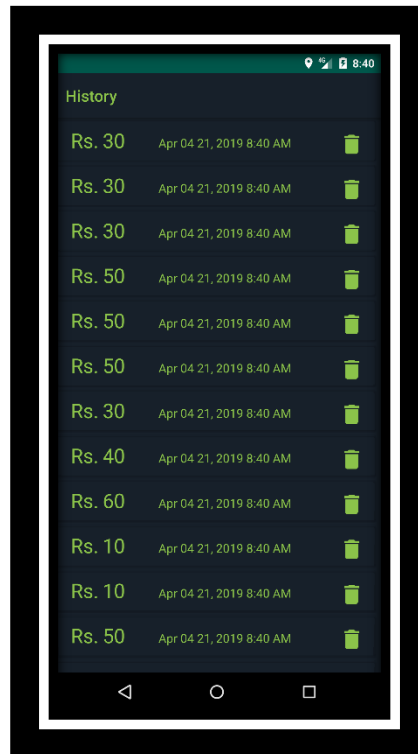

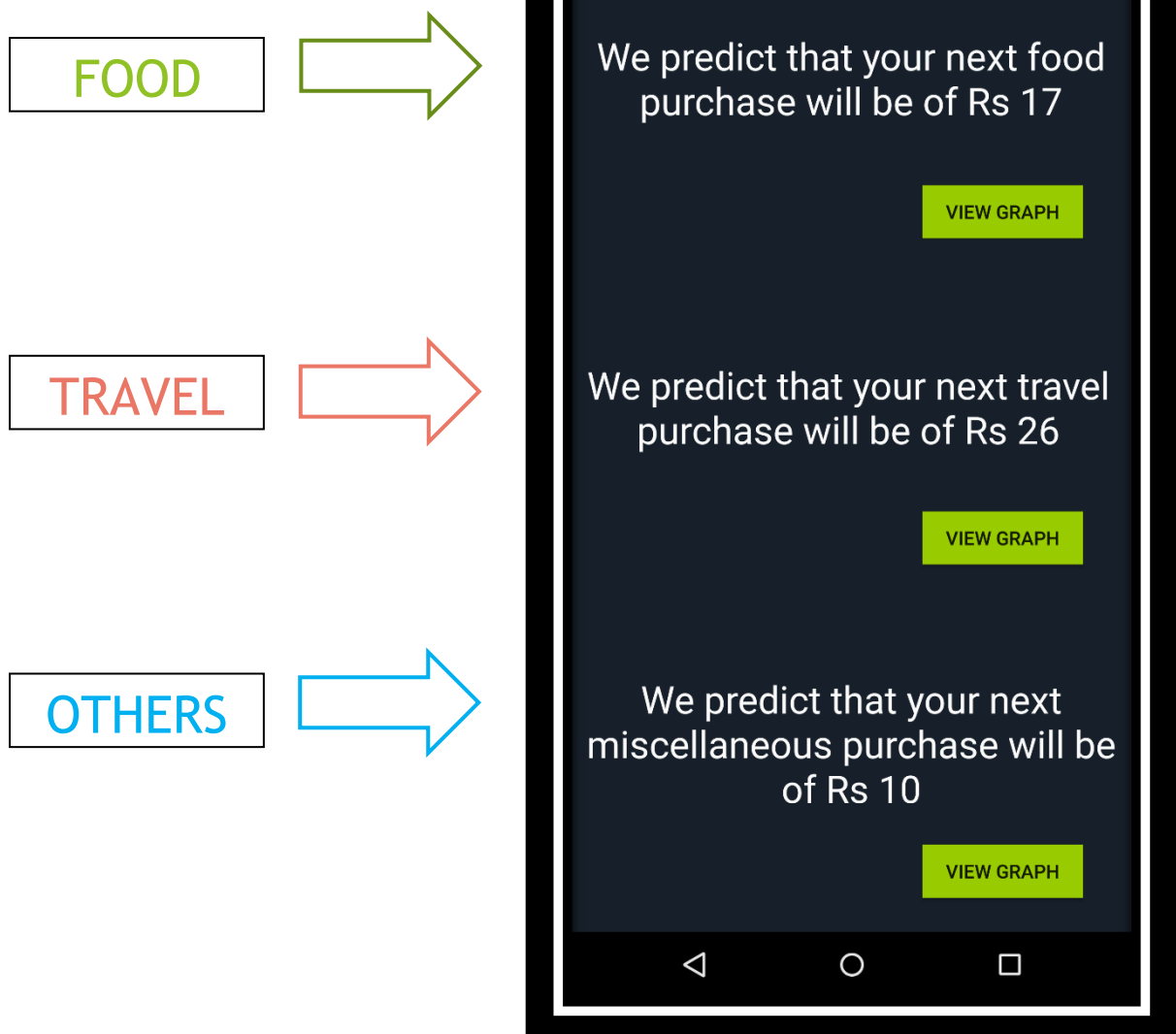Note: These settings can also be changed later in the settings.

2. Then log into the app how much you spent in FOOD, TRAVEL or OTHERS categories. You can use the seek bar or enter manually the amount you spent.
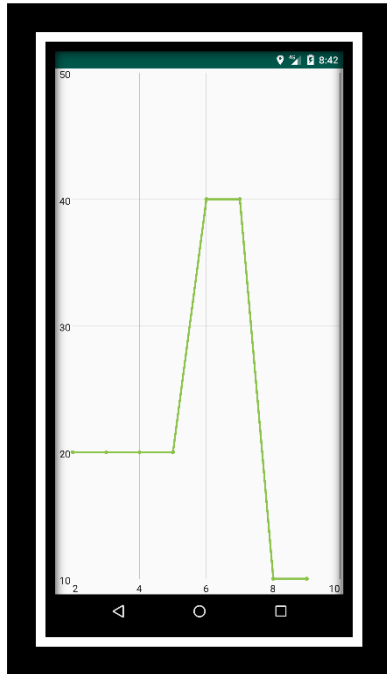
3. Then press the history button to see the history of your cash transactions with date and time stamp. You can delete any entry you want to.
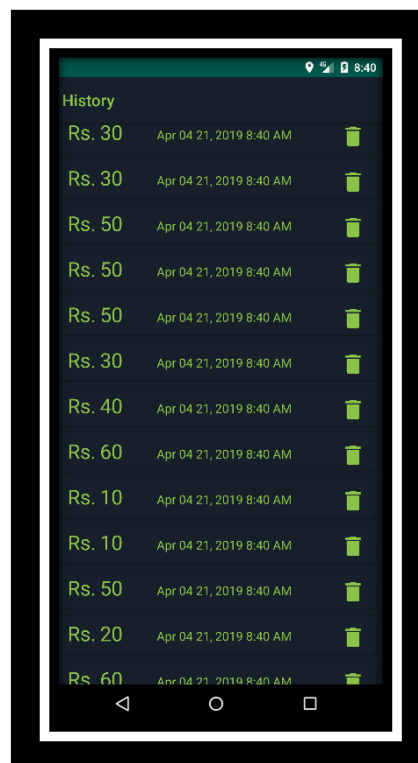
4. Then press the [PREDICT] button to open the prediction section of the app. Here you will get prediction of your next purchase in each category. Our model gets more accurate the more you use our app. If the data is not enough it will simply tell you that "We cannot predict your next purchase".
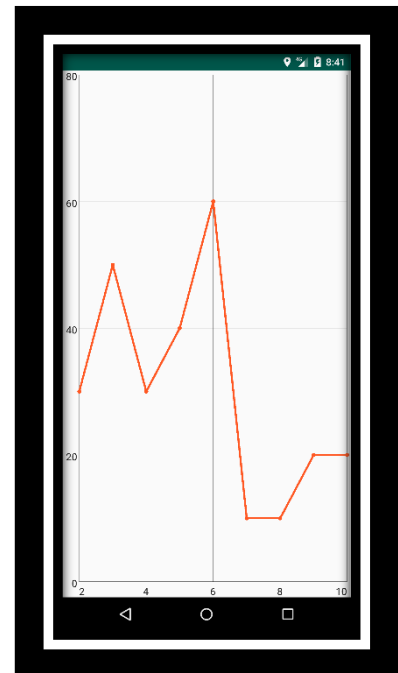
FOOD ⟹

TRAVEL ⟹

OTHERS ⟹

We predict that your next food purchase will be of Rs 17

VIEW GRAPH

We predict that your next travel purchase will be of Rs 26

VIEW GRAPH

We predict that your next miscellaneous purchase will be of Rs 10

VIEW GRAPH

5. Press the VIEW GRAPH button to see the graph of your expenses in any category.
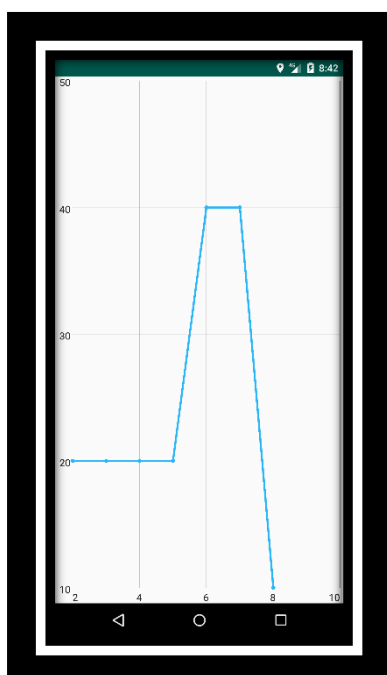

FOOD

TRAVEL

OTHERS

6. Cash Control also has Geolocation fencing which creates a virtual fence around your house so that if you happen to leave your house and come back later, the moment you enter your house, you will be reminded by a notification to log any cash you might have spent while you were out.

So, turn on your GPS and geofencing will become active. Now the next time you leave and return home, you will get a notification like in below screenshot.
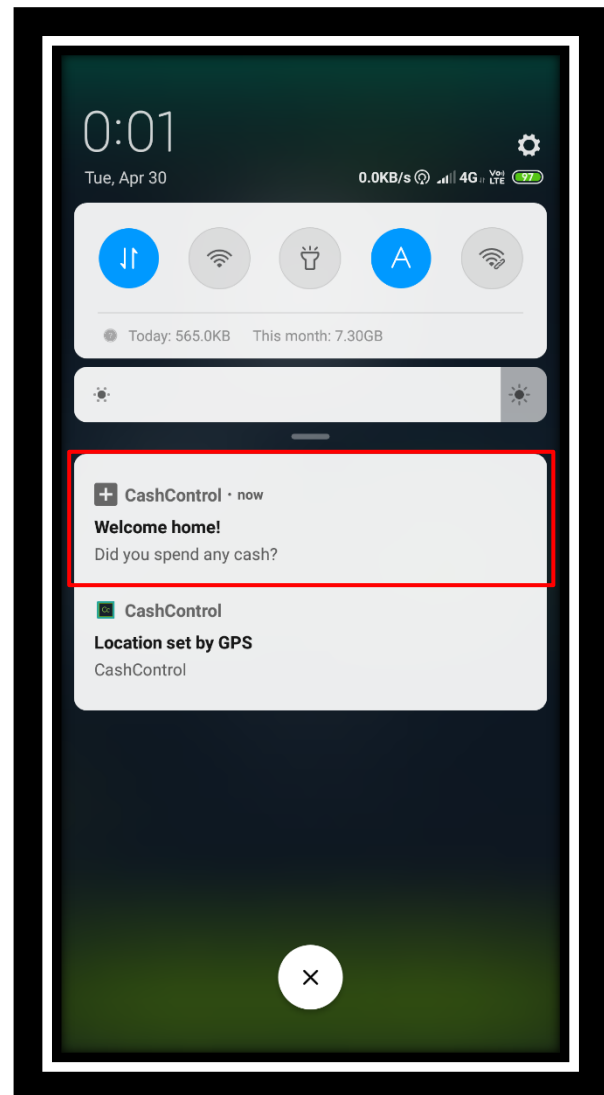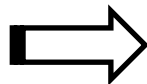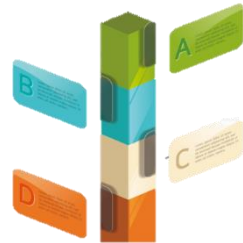
Future Updates

- Improved prediction model

- User defined categories

- Higher than usual expenditure alert

- Cross platform wearOS support

Conclusion

The only way to maintain a record of cash flow is to manually keep the data. But as time is passing, the lethargic nature of human beings is increasing.

Cash Control solves this problem by implementing Geofencing. No longer is there the need to set reminders to write your monthly expenditure. With it, even if you forget that you have installed the app, you will be reminded by the app when you enter your house.

References/Bibliography

[1] Herbert Schildt, "Java A Beginners Guide", 7th ed., Oracle Press
[2] John Horton, "Android Programming for Begineers", 1st ed., PACKT Publishing.
[3] https://developer.android.com/training/location/geofencing
[4] https://en.wikipedia.org/wiki/Linear_regression
[5] https://developer.android.com/guide