



CASH CONTROL

Control your cash

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Participated in:

Hack-O-Wasp hackathon

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TIET, Patiala.

Introduction

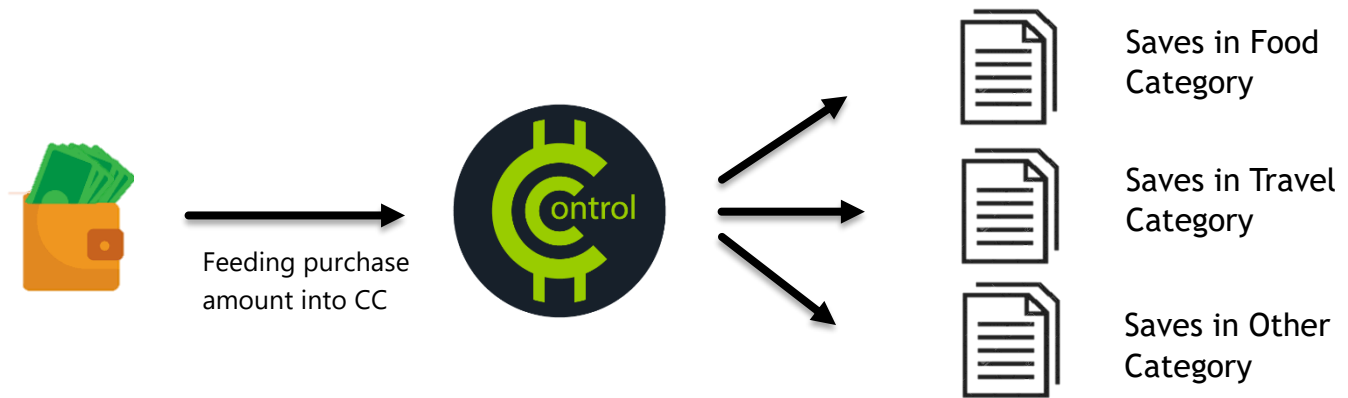
An app that helps you in keeping track of your expenses by storing your transactions with date and time categorically and predicting your next purchase in each category using Machine Learning. It also uses Geofencing to remind you to log any transactions of the cash you might have spent while you were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

Technologies Used:

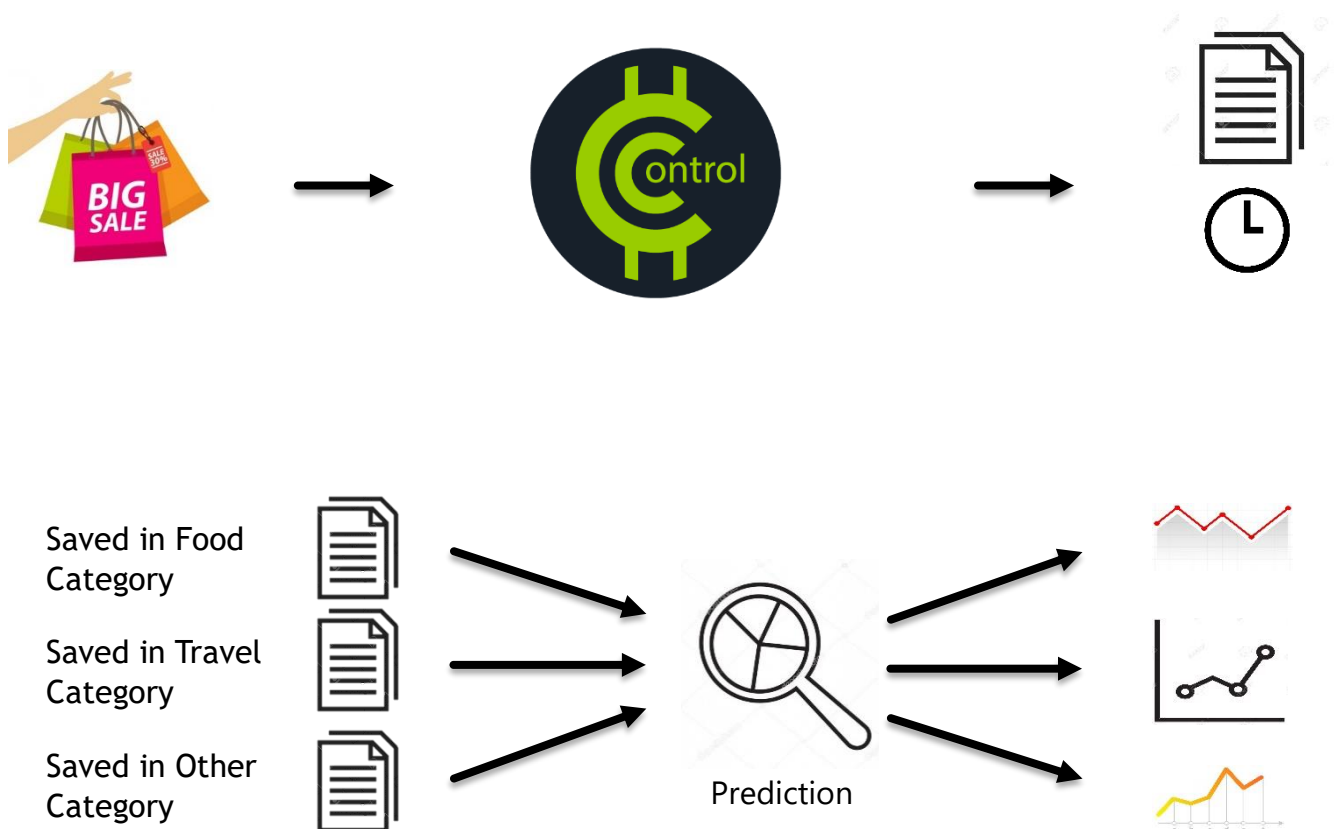
- The project was developed in Android Studio using **Java** and **XML**.
- It utilises **SQLite** database to store user info and transaction history.
- It uses **linear regression analysis** for prediction in the Machine Learning model.
- The project was hosted on **GitHub** and **Git** was used for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

Planning and Design

Flowchart of the working of Cash Control

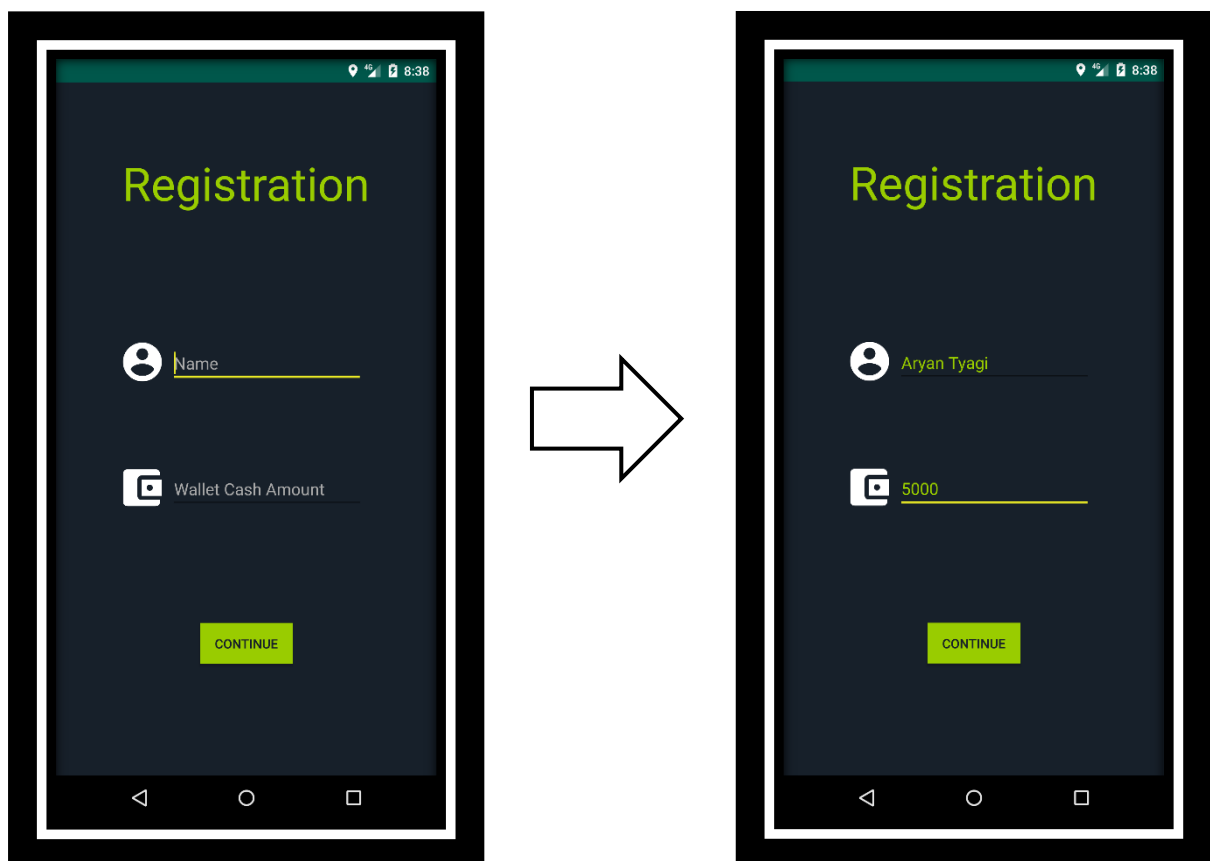


Expenditure history is stored with a timestamp automatically.



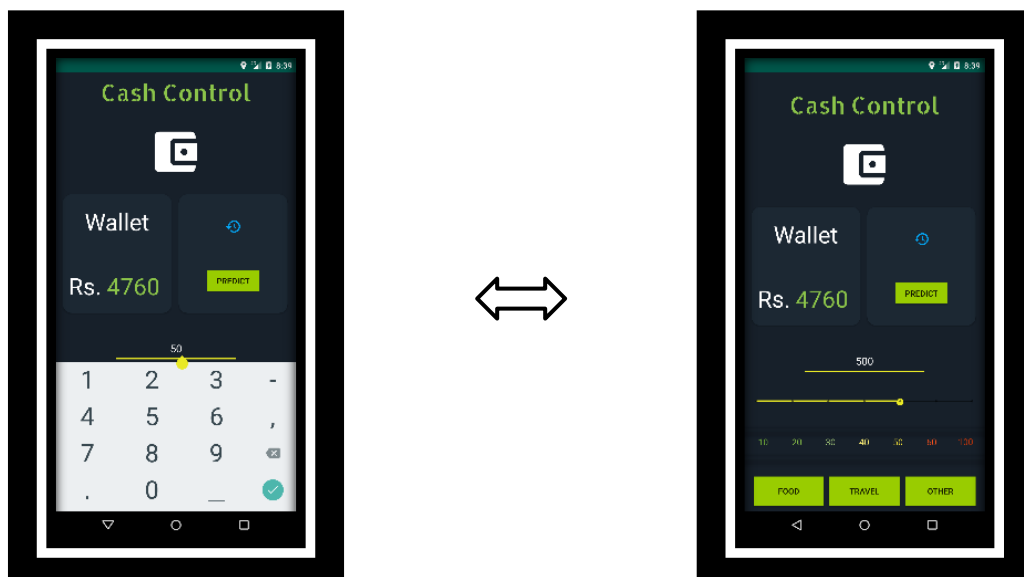
How Cash Control Works


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

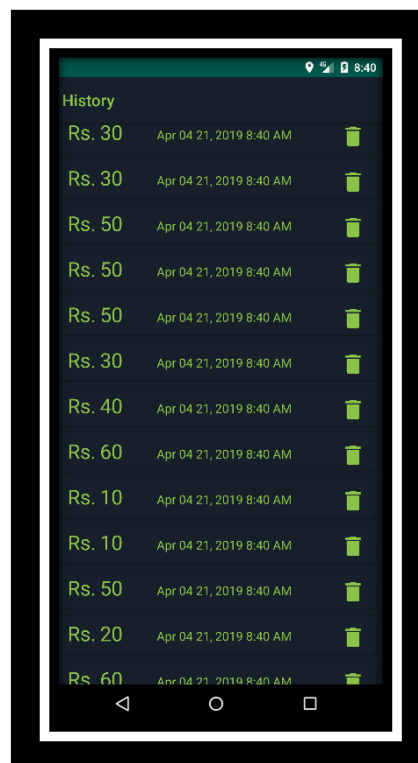
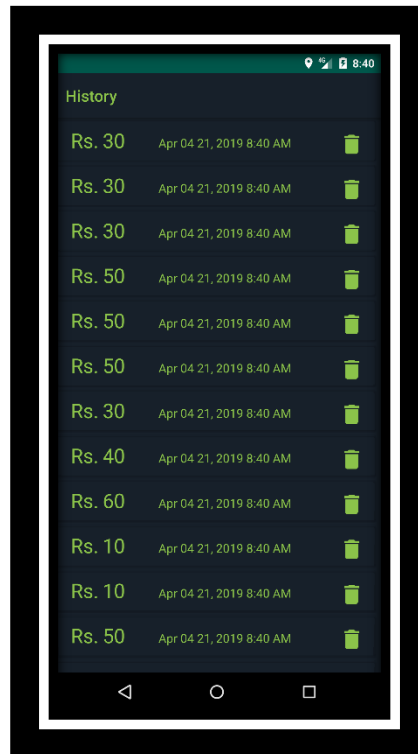


Note: These settings can also be changed later in the settings.

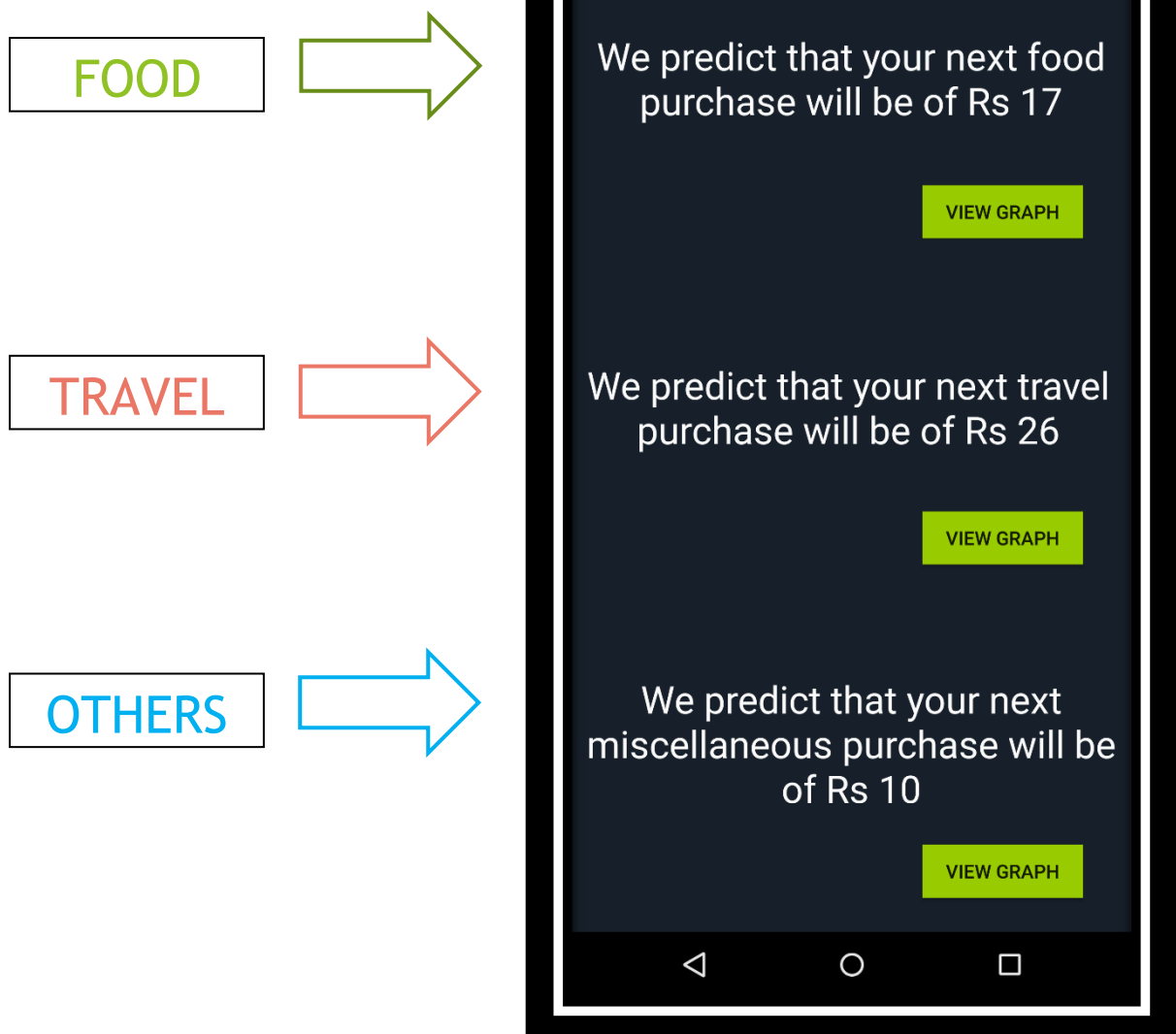
2. Then log into the app how much you spent in FOOD, TRAVEL or OTHERS categories. You can use the seek bar or enter manually the amount you spent.



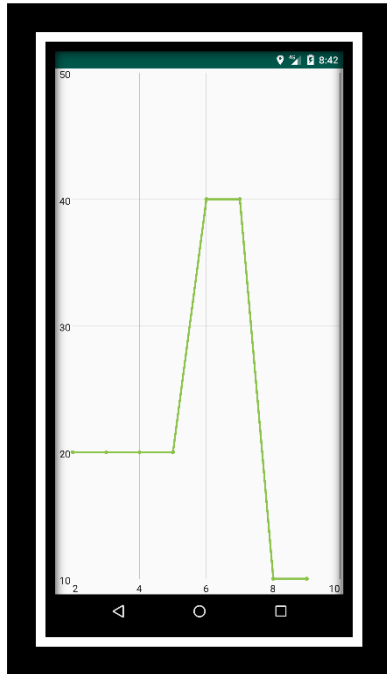
3. Then press the history  button to see the history of your cash transactions with date and time stamp. You can delete any entry you want to.



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".

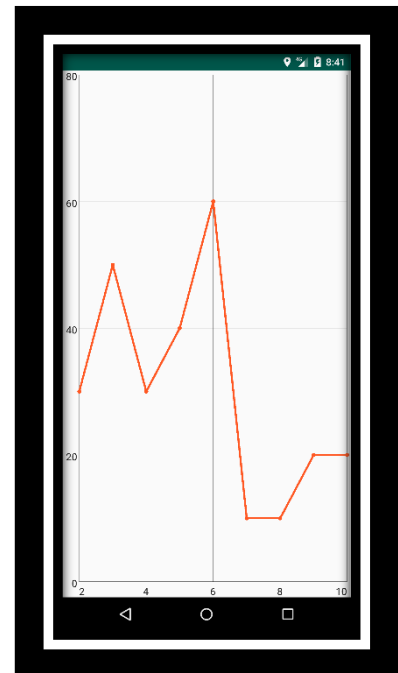


5. Press the **VIEW GRAPH** button to see the graph of your expenses in any category.

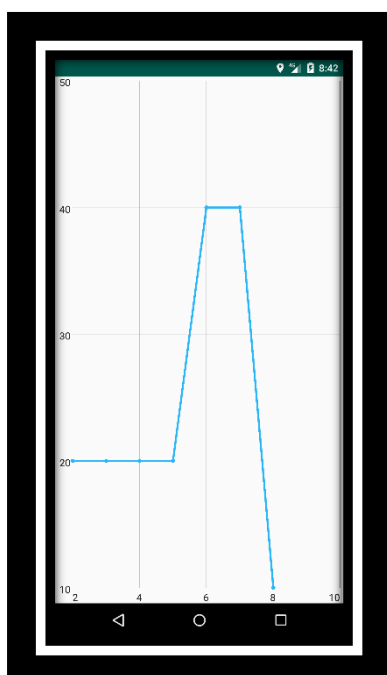


FOOD

TRAVEL

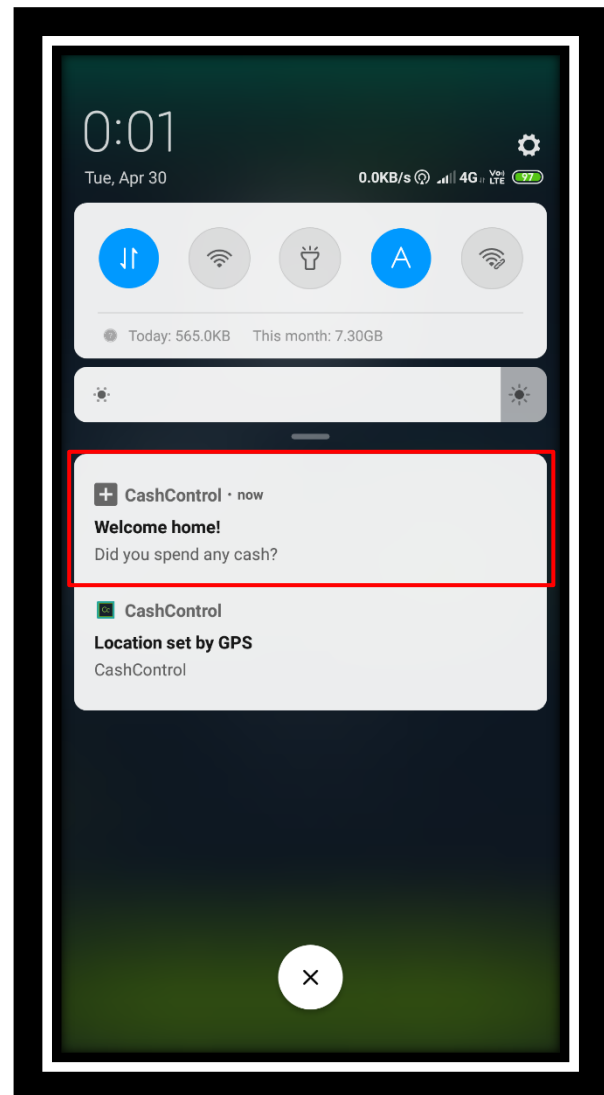
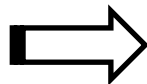


OTHERS



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.

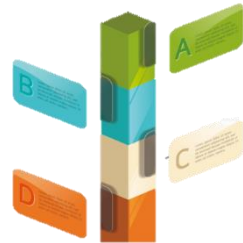


Future Updates

- 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

- [1] Herbert Schildt, "Java A Beginners Guide", 7th ed., Oracle Press
- [2] John Horton, "Android Programming for Beginners", 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>