

Architecture Diagram:

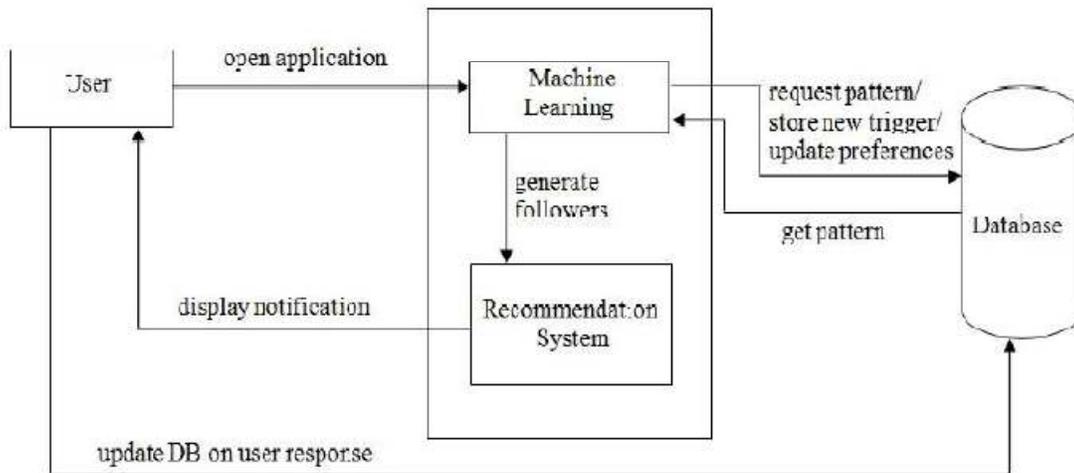
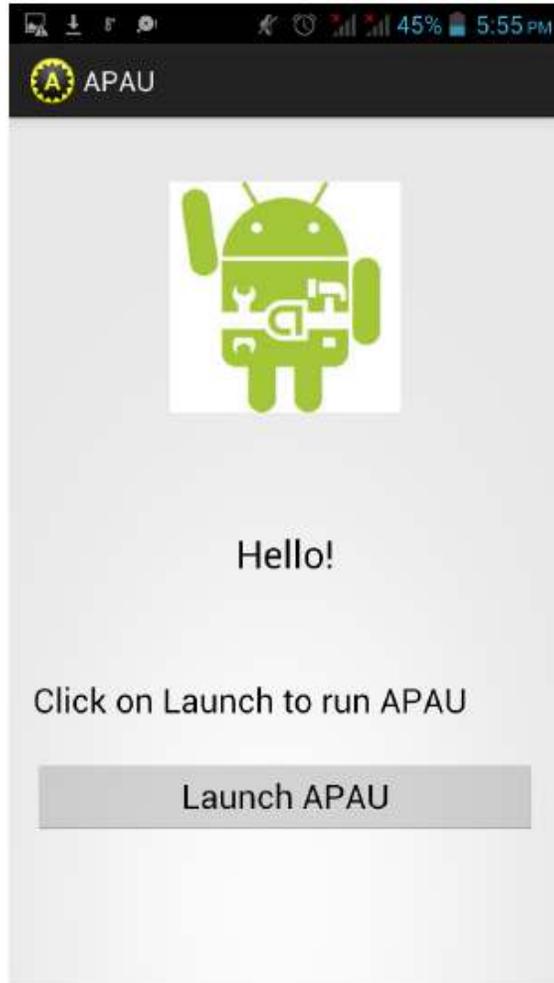


Fig 4.1: Basic architecture diagram: showing the basic working and functionality of APAU (Analysis and Prediction of Application Usage)

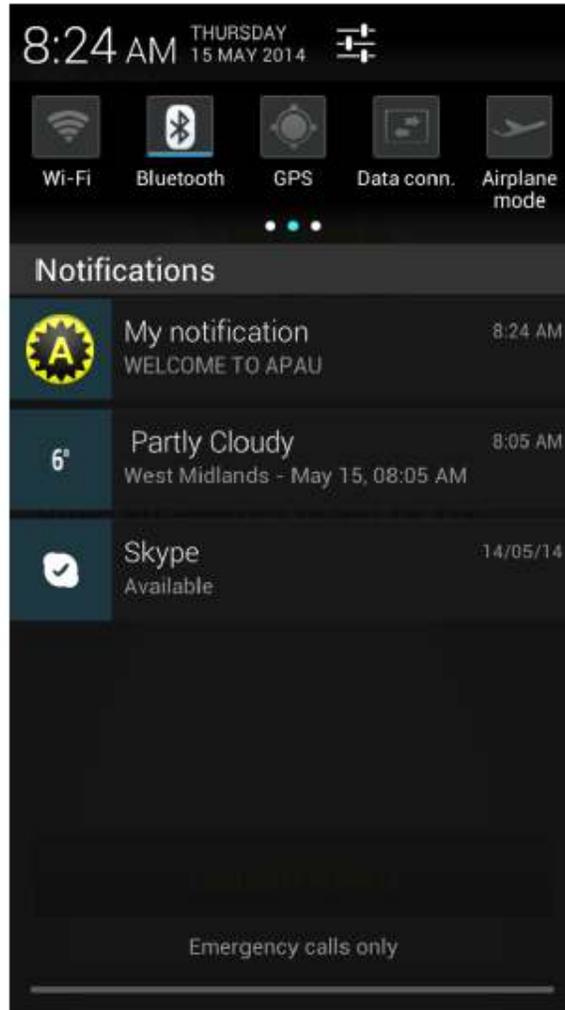
The main objective of APAU is to analyse application usage of the user and use this information to predict the future applications that the user is likely to use. When a user runs an application, the Machine Learning algorithm identifies it as a trigger. A database look up is done to find patterns relevant to this trigger. If a pattern is found, Machine Learning fetches it from the database and generates followers. If a new trigger (new application) is encountered, Machine Learning stores new patterns into the database. The list of followers is given to the Recommendation System which displays it via notifications. On receiving user response, preference updates are made in the database which helps in better identifying future applications of the user.

Screenshots of APAU:



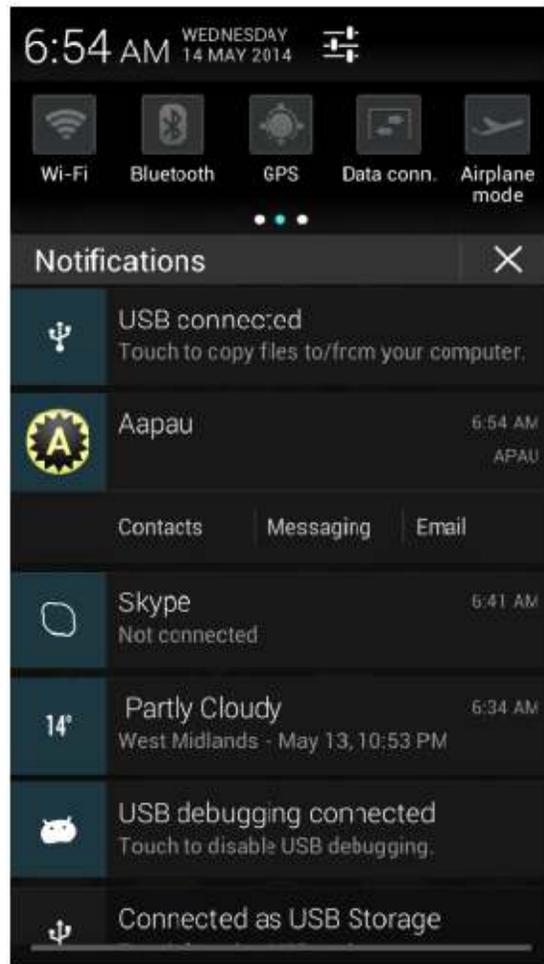
Form 1: Home screen of APAU

This screen is displayed when the user opens the application APAU. Clicking on the Launch button prompts APAU to launch a service and display a persistent notification that confirms the successful launch of APAU. The user can now start using applications on the android device while APAU scans his/her application usage by running as a service.



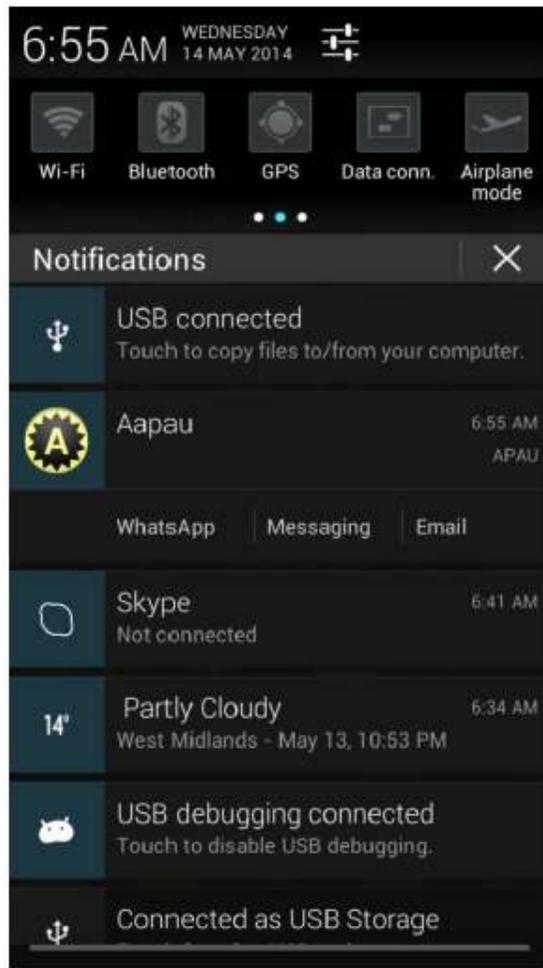
Form 2: Persistent notification

A persistent notification is generated when APAU is launched by the user. This is displayed to notify successful launch of application. The use of a persistent notification is to ensure that the service is not killed by the Android system. Once the user sees this notification, he/she can continue using other applications on which recommendations are prompted by APAU



Form 3: APAU recommendation

APAU displays recommendations via notifications. The above form is one such example where APAU has recommended particular applications for the current running application. On this screen, the user can either select one of the recommended applications or ignore the notification. On selecting one of the recommended applications, an immediate application switch occurs. On the other hand, if the user ignores the notification, he/she can continue working with the current application without any trouble.



Form 4: Updated recommendation

Form 4 displays an updated recommendation. On display of the previous form (Form 3) if the user were to ignore the recommendation and use Whatsapp(a third party application on the Android phone),APAU makes a preference update in its database. The entry for the current foreground application (the application considered as a trigger) is modified to include Whatsapp in its follower list with a high preference. This implies that the user is more probable to choose Whatsapp after his current application than the other applications in the follower list.