

Project Report on

RemindMe

An android application for Reminder Services and Task Manager

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Course: CS634A - Mobile Computing

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Introduction

Most of the reminder applications available today in mobile phones are generic in style which is time/date based for alerting about the set reminder or task. If the reminder is ON, the Listner service in the device continuously monitor the date/time setting of the phone with the saved time and date, and the user will be alerted if it is a match. In most of the cases, user would want some more additional features than just reminder service. In this project, we intend to design an android application which provides a feature for saving location in the reminder. Location service is not available with any of the reminder service application currently available in the Android Play Store.

In order to accomplish the above tasks, this project aims to use Android Studio engine which is an integrated development environment (IDE) for developing Mobile Applications in Google's Android operating system. Overall architecture, use cases, applications features are discussed in subsequent paragraphs.



List of Features and Limitations

Following are the list of features of the application:

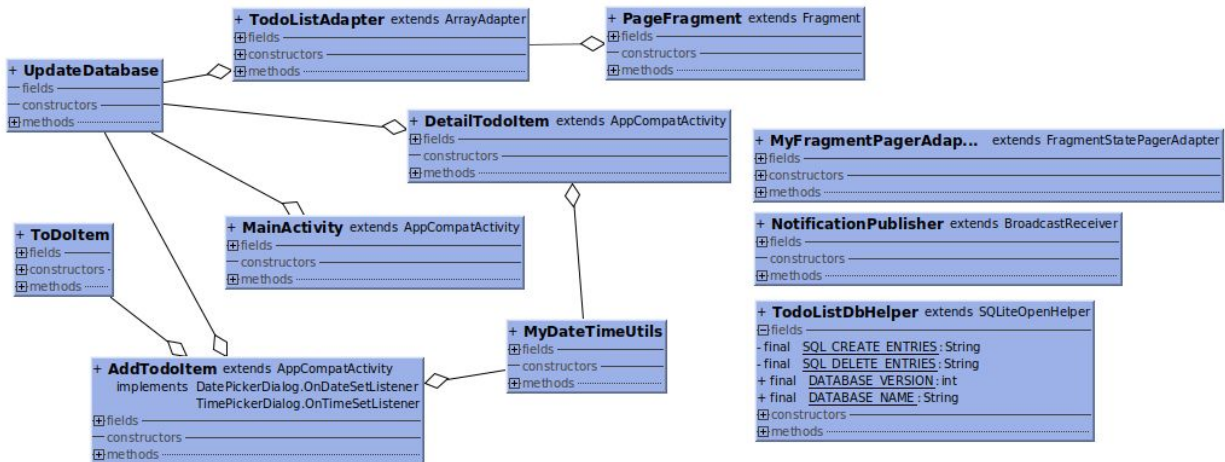
1. Option to set Reminder. Which in turn makes application a Task Manager application.
2. Tabbed view for 'AllTasks', 'Today', 'This Week'
3. Option to add Address mapped with each task.
4. Checkbox option to strike off the completed tasks
5. 'Clear Done Tasks' option to remove all completed tasks in one go
6. Option to edit the saved tasks for any modifications.
7. Option to delete an unwarranted entry
8. Intuitive display of tasks list with reminder 'icon' is set
9. Alert even in locked screen to make application more user friendly

Following limitations are also submitted: -

1. Data is stored in local database, thus on changing the phone, all data need to be ported separately. However, no data is lost when the application is updated with a newer version.

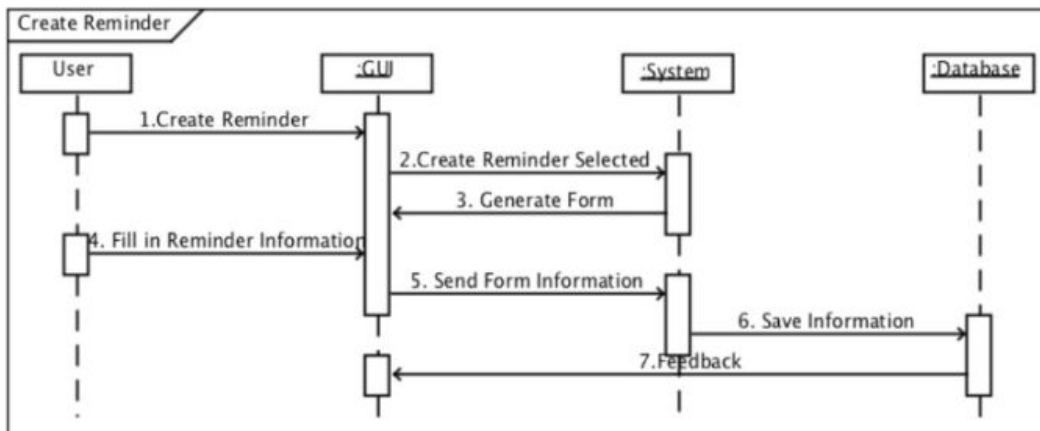
UML Diagram and Use cases

Application uses Android Studio with Java as programming language for development. UML Diagram of various Java classes of the application is as shown in below.

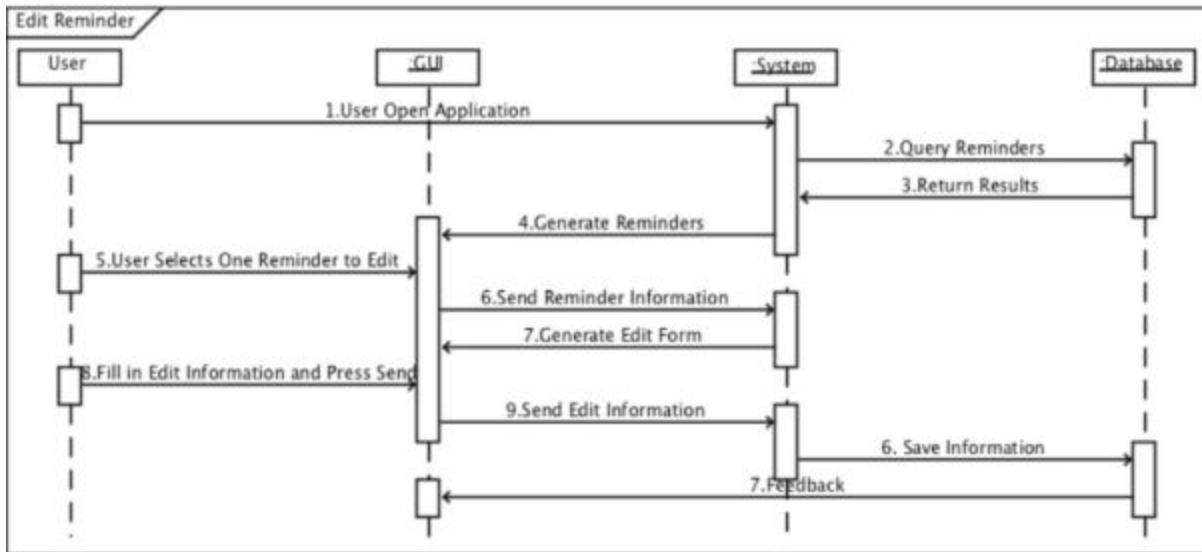


The various use cases are enlisted below that describe the interaction between various components of the application.

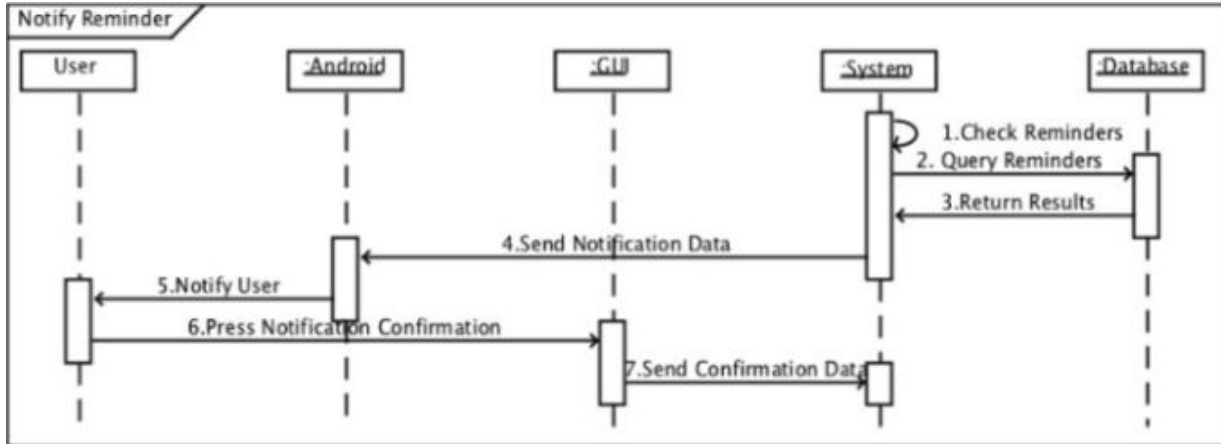
1. Use case for creating reminder



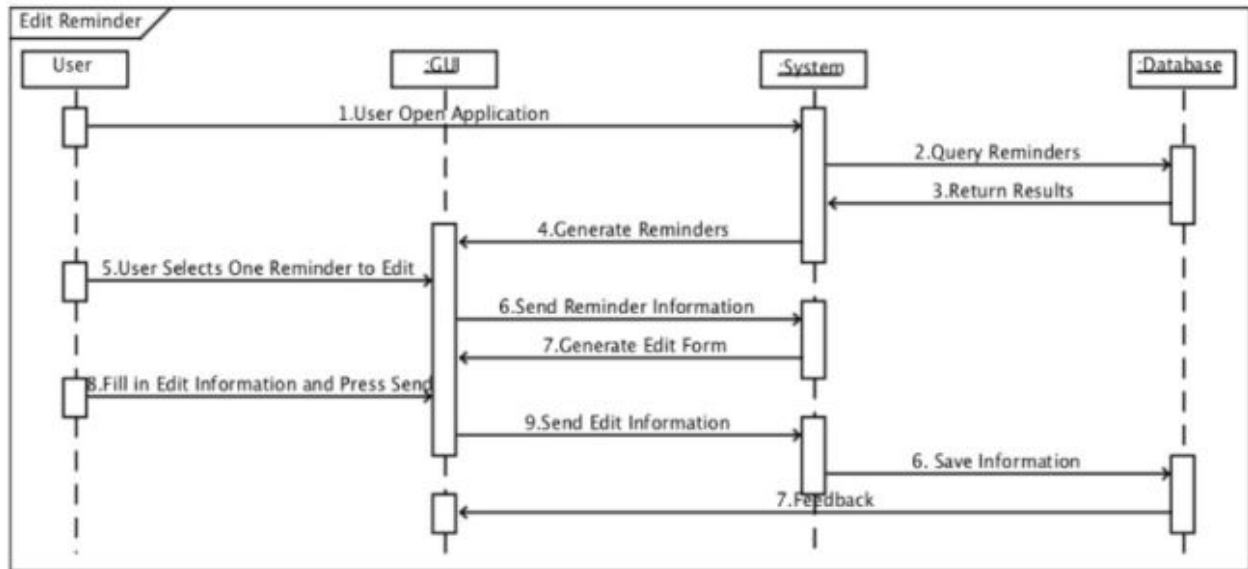
2. Use case for editing reminder



3. Use case for notification



4. Use case for editing the reminder



Development Stages and Source Code

Development is done in three stage process as below:-

1. *Feature finalization and UI design*

Features have been finalised as described before and the UI was designed through Android Studio UI editor which implements the xml code in background.

2. *Database design and programming*

Local SQLite database is used to store the user data persistently on the device. Data will be preserved in the local device when the application is updated to a newer version. However, advanced features for storing user data to a cloud has not been implemented.

3. *Implementation and testing*

Application is designed for Android version 7.0.0 or above with following settings on Android Studio: -

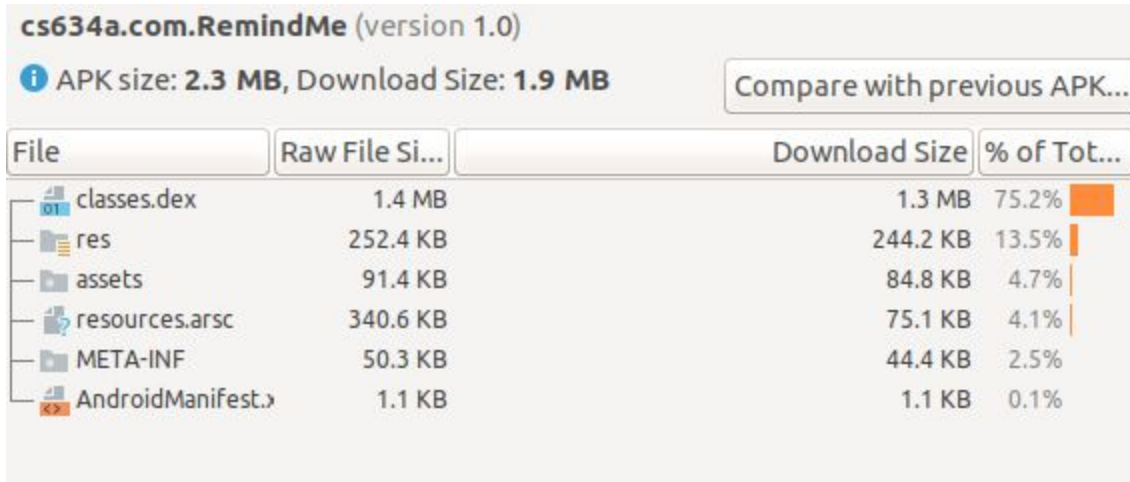
```
compileSdkVersion 25
buildToolsVersion "25.0.2"
targetSdkVersion 25
```

Testing has been carried out on Google Nexus simulator as well as on real device. Extensive testing of newer android version has not been carried out. Gradle build version 2.3.3 is used to package the application into 'apk' file. Source code of the app has been made open source and made available in following github link: -

Download complete source code at <https://github.com/rahulrajpl/ReminderApp>

Analysis of the source code

Application has been designed with minimal source code footprint to have small package size for final apk. We have achieved final file size of apk as 2.3 MB. Analysis report generated from Android Studio is as follows: -



File	Raw File Si...	Download Size	% of Tot...
classes.dex	1.4 MB	1.3 MB	75.2%
res	252.4 KB	244.2 KB	13.5%
assets	91.4 KB	84.8 KB	4.7%
resources.arsc	340.6 KB	75.1 KB	4.1%
META-INF	50.3 KB	44.4 KB	2.5%
AndroidManifest.xml	1.1 KB	1.1 KB	0.1%

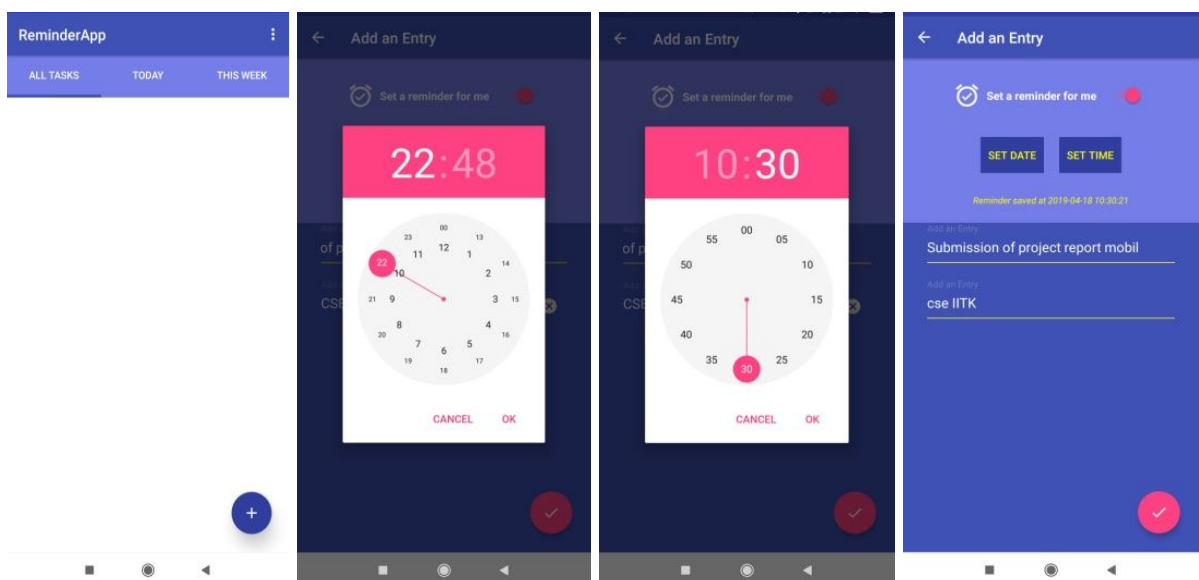
Application Manual

Installation

App is installed by a signed **.apk** file on android platform or using USB debugging option in Android phone by connecting to Android studio.

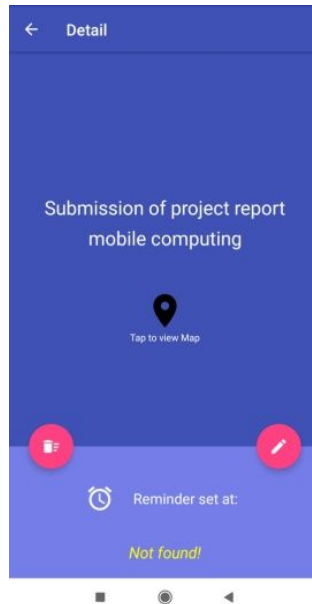
Add Reminder:

- Once the application is installed the Homepage displays three tabs namely, **All Task**(complete list of reminders and to do lists), **Today**(reminders set for current date),**This Week**(reminders set for current week).
- On the bottom right corner is a floating **action button** for adding a 'reminder or note'.
- **Add an Entry** page appears by on click operation on the action button. The page gives option to set reminder or add a note.
- To add a reminder select the **Set a reminder for me** slider button. Option to SET DATE and SET TIME appears. User can choose time and date of preference for reminder from calendar and clock functionality. Reminder will be displayed as (e.g.) 'Reminder saved at 2019-04-17 21:00:00'.
- Enter the task that you want to be displayed upon the time of reminder in the text box with shadow text 'Insert your task here'.
- If the user intend to specify the location of the reminder, he may do so by entering the same in 'Enter Address' field.
- Save the reminder by clicking on Floating action button. Empty task will not be saved and error will be displayed 'Empty task detected! No task added'.



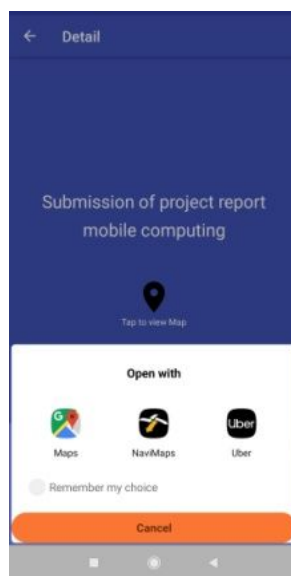
Edit Reminder

On saving the reminder the Homepage displays the tasks saved by user with an alarm icon on the right. User can edit the task anytime by clicking on the task. Once the task is completed user can strike off by checking the box in front of reminder.



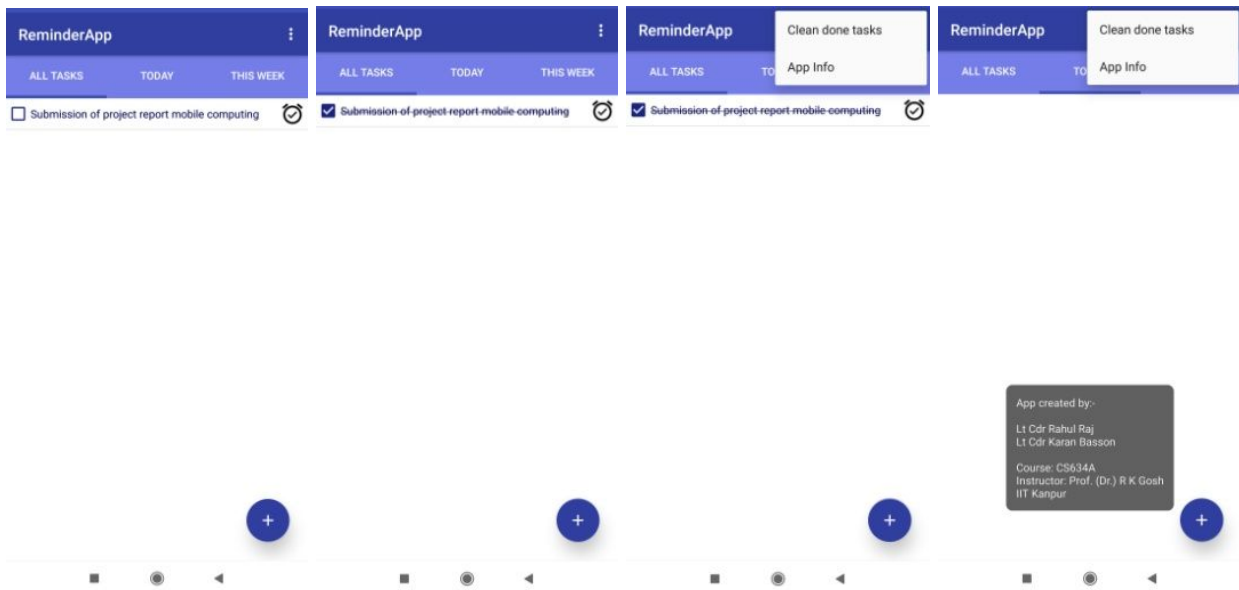
Access Location (Location Service)

To access the location of reminder click on the task and a page **Detail** will appear with information about the reminder. Click on the **Tap to view Map** icon to get directed to Google Maps, the location will be displayed on Map.



Delete reminder or note

In the detail view user can edit or delete the reminder. The clear the completed tasks or reminders, check the box of reminder and go to options in top right of home page and select **Clear done tasks**





Future Scope and Conclusion

Presently, the user data is stored locally in an SQLite database. This can be stored over a cloud so that user data is persistent even when device is changed or phone is formatted for some reason. The application has achieved the objective of efficient reminder service with following highlight features:

- Dual functionality of reminder and Task Manager.
- Light weight with size of 2.3 Mb
- Unique feature of Location Services with each reminder task



References

1. Johan Jurrius - Android Studio Programming Tutorials in youtube
<https://www.youtube.com/channel/UCKjZAnISbJMM-Bmmx1BftKg/playlists>
2. Introduction to Android Studio - Tutorialspoint
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