

Software Design Document

HelpMate Mobile App

Sirisha Veeraganta

Abstract

This product is unique and independent by its features but there are many mobile apps in the market which work on the similar concept of interacting with user and handling the user's task more efficiently. Most of the other products are standalone independent software while HelpMate will try to integrate these applications into one product.

HelpMate needs to communicate with other apps on the phone in order to retrieve information and utilize that to alert or notify the user. HelpMate largely utilizes the GPS on the phone to communicate and keep the track record of its locations.

Helpmate also connects to the call history and updates its internal database with number of times calls made to each number. This information is used to classify the contacts list and favorites by prompting to user to help generate a favorite list.

Purpose

The purpose of this document is to give a detailed description of the various designs for the "HelpMate Mobile software. It will illustrate the use case, activity diagram and class diagrams of the mobile app.

Scope

HelpMate is a virtual assistant for android devices. Your very own personal assistant awaits your commands – performing tasks, notifying you about important events, and making your daily routine easier (and, often, more fun along the way). Our goal is to make working with everyday technology easier, more effective, and more fun so that you are free to enjoy the important things in life.

This product is best suitable to everyone who uses smart phone extensively. Helpmate communicates with the other apps on the mobile and sends the user updates and alerts.

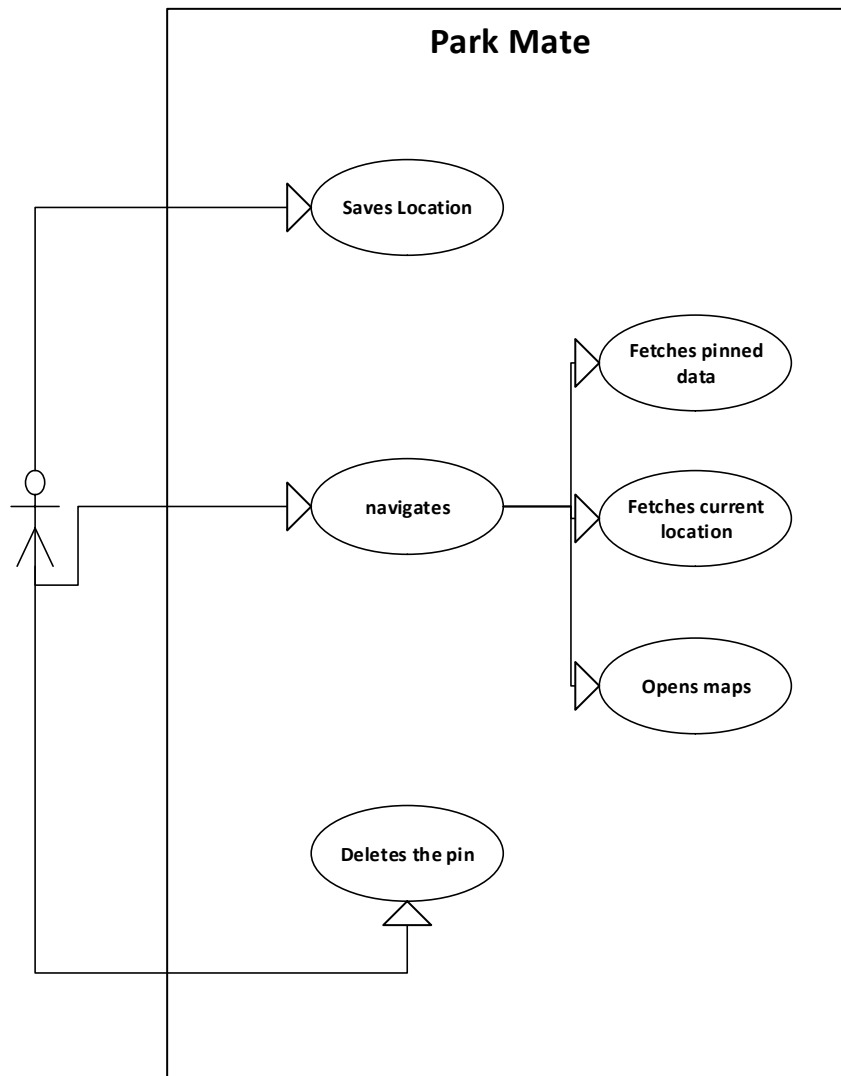
Some of the important features of HelpMate:

- Parking lot assist (Park Mate)
- Stay Connected with contact favorites (Stay Connected Mate)
- GPS Tracker (GPS Mate)

Basically the software needs both Internet and GPS to fetch and display results. All system information is maintained in a database. The software also interacts with the GPS-Navigator software which is required to be an already installed application on the user's mobile phone.

Use Case Diagrams

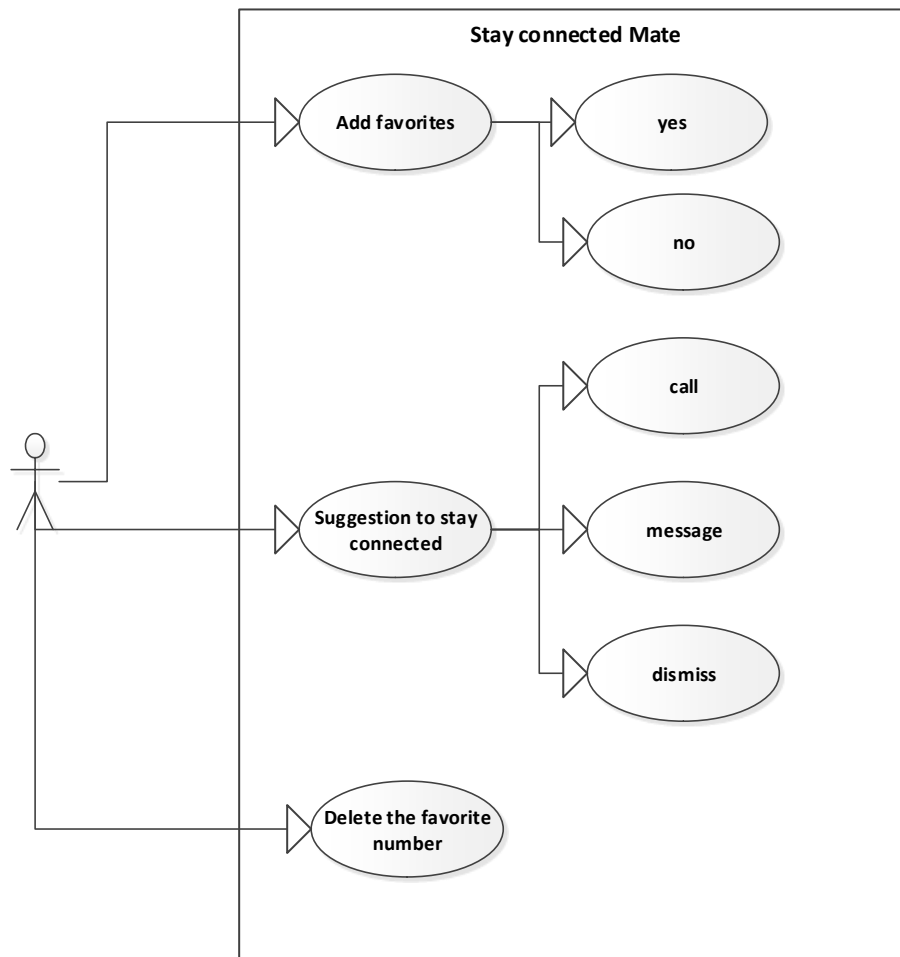
ParkMate Use Case



In the above Use case diagram, the park mate application user uses 3 behaviors.

1. Saves Location – The user uses this case to interact with the feature to save the location of parked car.
2. Navigates – The user uses this case to interact with the feature to navigate to the pinned location. This use case further divides into 3 sub cases a. Fetches pinned data b. Fetches current location c. opens maps. Navigation uses these 3 subcases to show the user the pinned location.
3. Deletes the pin – The user uses this case to interact with the feature to delete the pinned location.

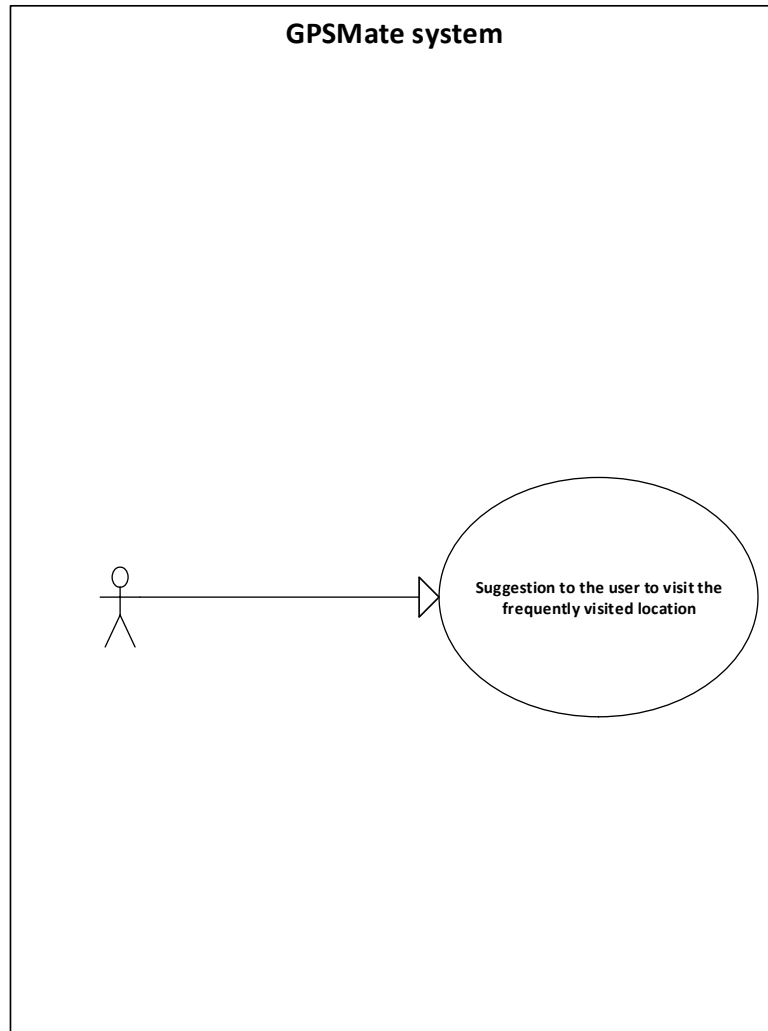
Stay Connected Mate



In the above use case diagram, the user uses three behaviors.

1. Add favorites – The user uses this case to interact with the feature to add favorites of the callers from the call history. This use case further divides into 2 sub cases a. Yes b. No. The user gets to choose either of the options whether to add the suggested caller to the favorites list.
2. Suggestion to stay connected – The user uses this case to interact with the feature. In this case, the app suggest the user to get in touch with that a person the user added to the favorites but haven't contacted or been contacted by the person. This app reminds the user to stay connected with his close connections. This app further uses 3 sub cases which suggests the user to call OR message OR dismiss the suggestion.
3. Delete the favorite number – The user uses this case to delete the favorite number which once the user approved to be added to favorites. The user can go the app page and click on the delete button across the number.

GPSMate

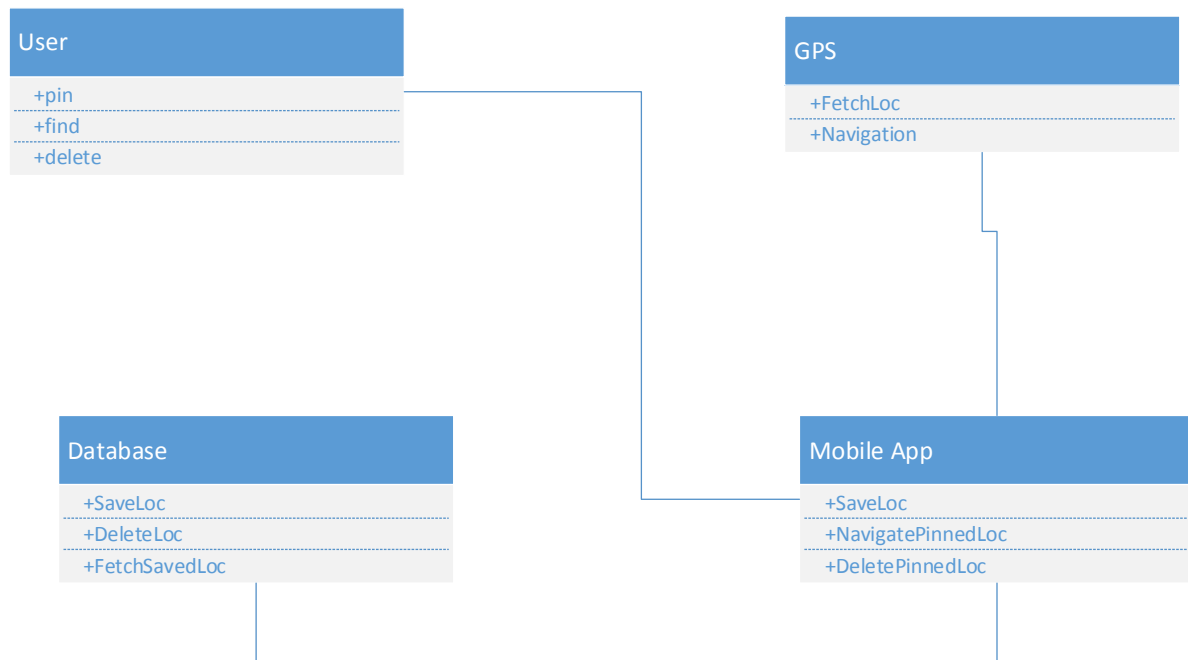


In the above use case, the user uses one behavior

1. Suggestion to the user – The user uses this case to receive a suggestion from the app to visit the place which the user once use to visit frequently. This suggestion pop up comes as a notification to the user.

Class Diagrams

ParkMate Class Diagram



The above class diagram has 4 classes.

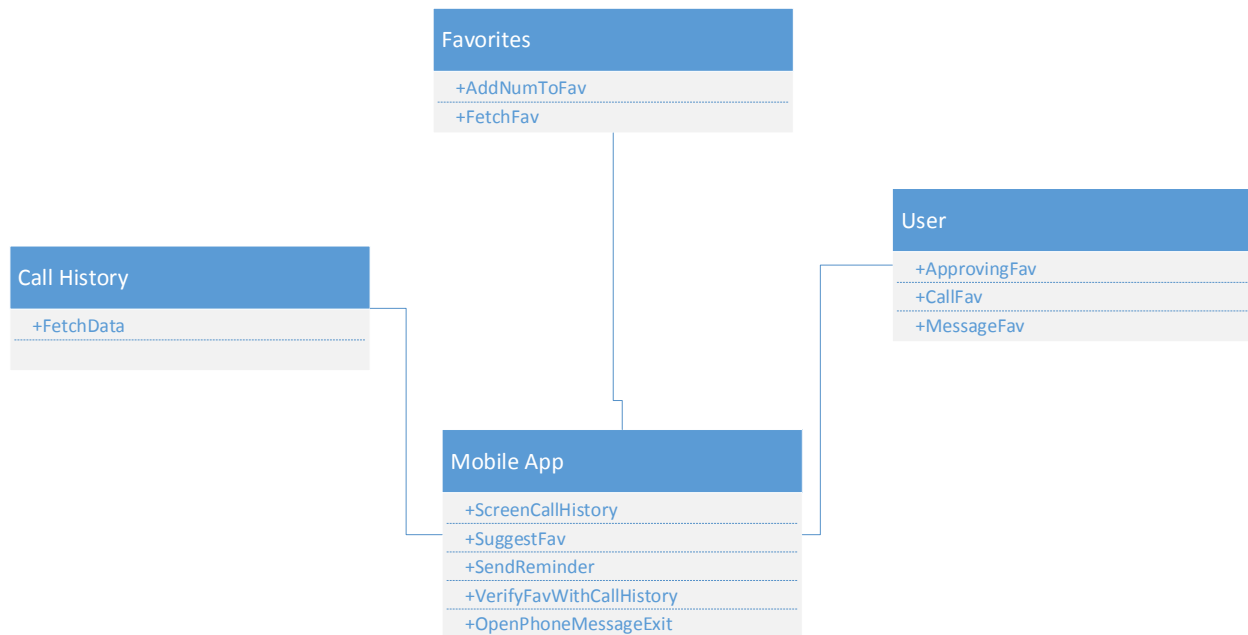
User Class Methods	Description
pin	This method pins and saves the location
find	This method finds the pinned location
delete	This method deletes the saved location

GPS class methods	Description
FetchLoc	This method fetches the saved Location
Navigation	This method opens the navigation to the pinned location

Database Class methods	Description
SaveLoc	This method saves the pinned Loc to database
DeleteLoc	This method deletes the saved location
FetchSavedLoc	This method looks for the saved Loc on Database

Mobile App class methods	Description
SaveLoc	This method saves the location to the DB
NavigatePinnedLoc	This method opens navigation to the pinned Loc
DeletePinnedLoc	This method deletes the saved location on DB

Stay Connected mate Class Diagram



The above class diagram has 4 classes

User Class Methods	Description
ApprovingFav	This method chooses the number to be added to Favorites
CallFav	This method notifies and suggests the user to call the favorite number
MessageFav	This method notifies and suggests the user to message the favorite number

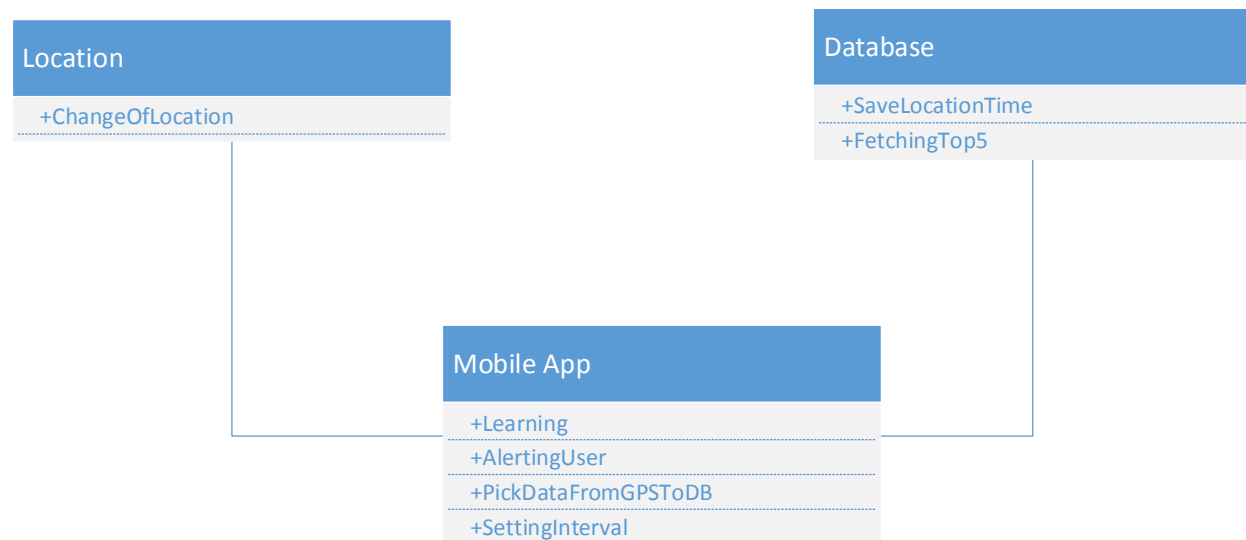
Favorites Class Methods	Description
AddNumToFav	This method adds the number to favorites approved by the user
FetchFav	This method looks up for the saved favorite number

Mobile App Class Methods	Description
ScreenCallHistory	This method looks up the call history
SuggestFav	This method suggests a number to the user whether to added to favorites list
SendReminder	This method sends reminder to the user to get in touch with the favorites number

VerifyFavWithCallHistory	This method verifies the saved favorite number with call history
OpenPhoneMessageExit	This method opens the Dial Pad or opens Create Message, or Exits upon the users selection of options

Call History Class Methods	Description
FetchData	This method fetches the data from the call history

GPSPMate class Diagram



This above class diagram has 3 classes

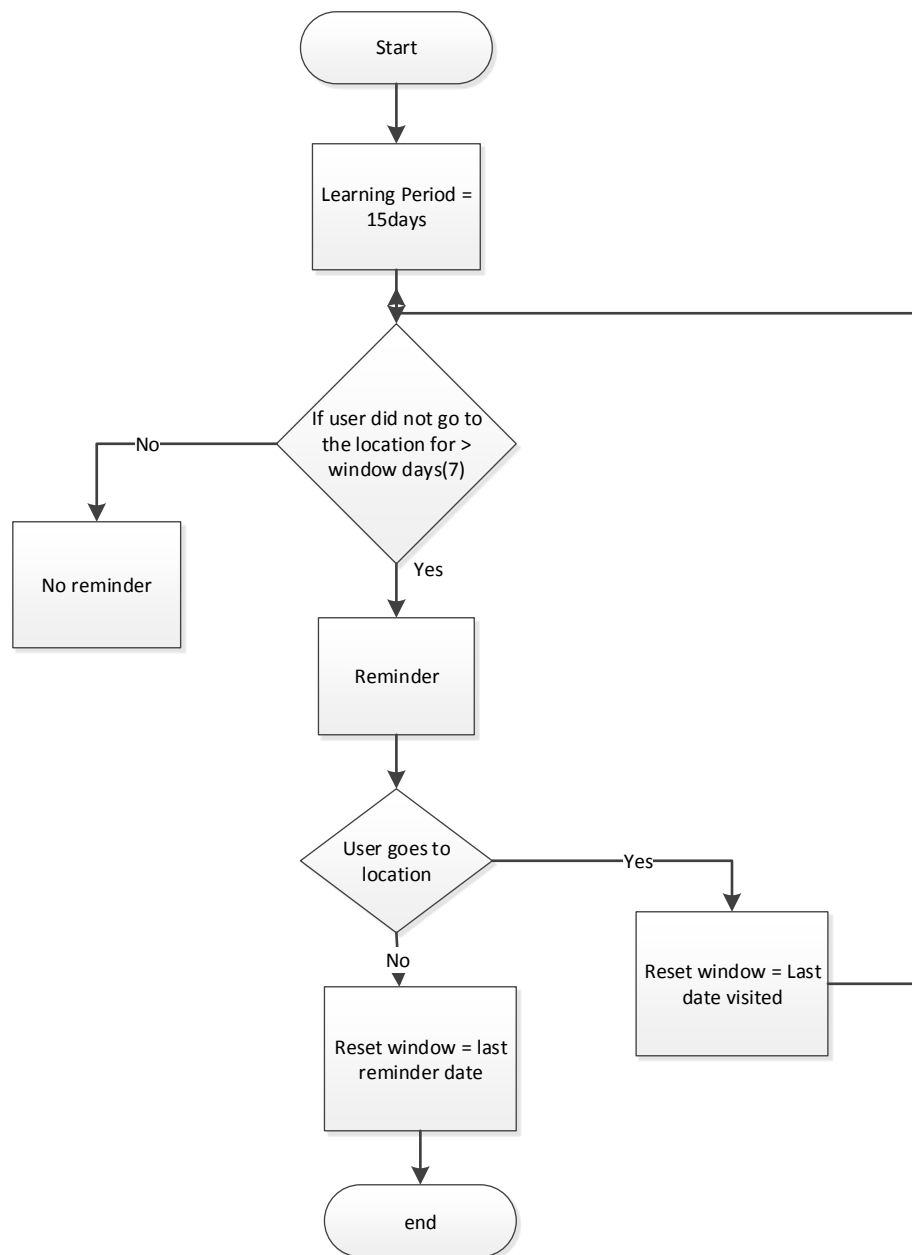
Mobile App Class Methods	Description
Learning	This method learns the users visits and makes a database of frequent visited locations
AlertingUser	This method alerts the user to visit a location which was once frequently visited but stopped
PickDataFromGPSToDB	This method picks data from GPS and saves it to Database
SettingInterval	This method sets interval to the alert the user of regular time intervals.

DataBase Class Methods	Description
SaveLocationTime	This method saves the time at which the user visited the location the last
FetchingTop5	This method picks top 5 locations user frequently visited

Location Class Methods	Description
ChangeOfLocation	This method registers every time there is change of location

Activity Diagrams

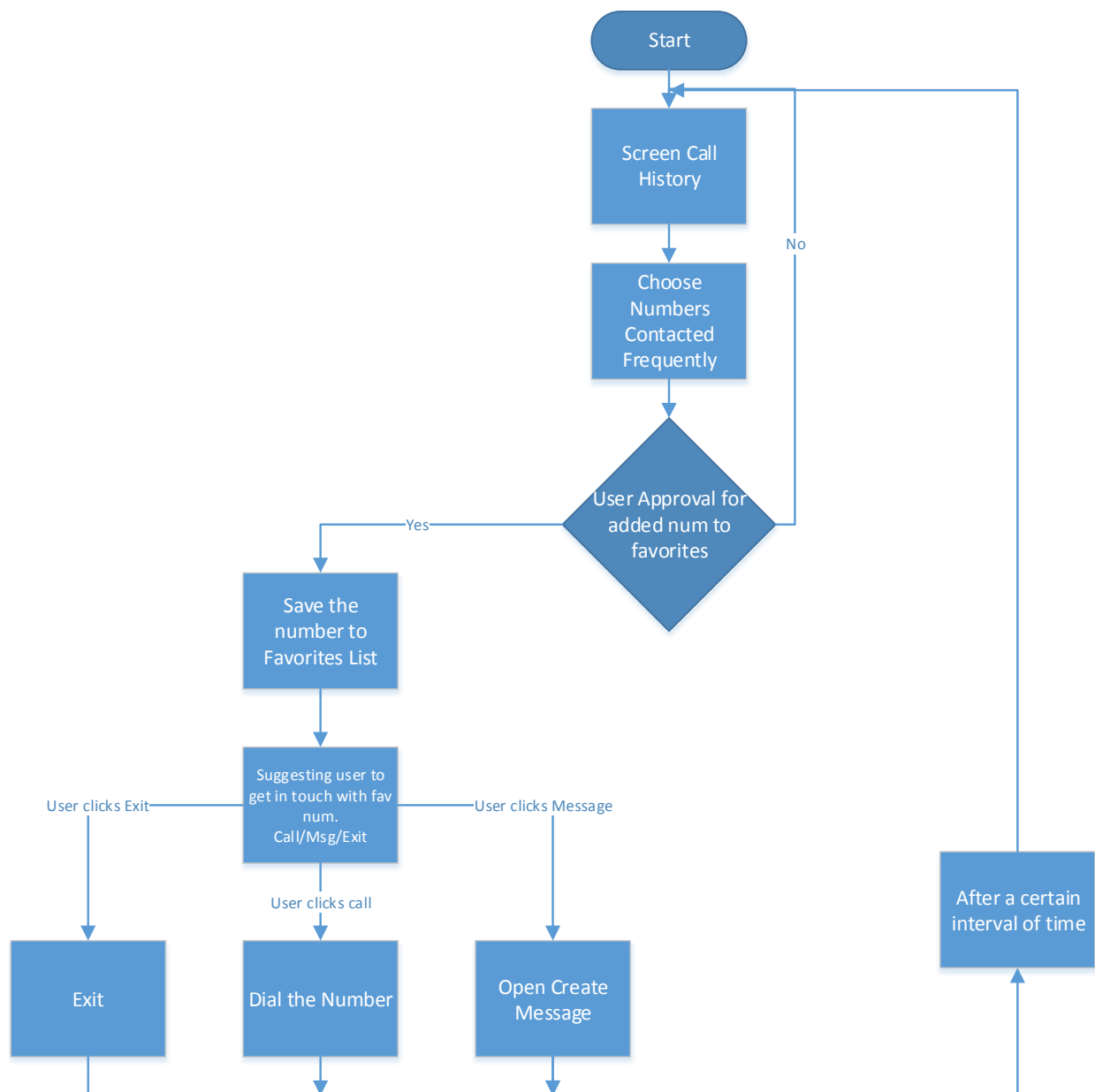
GPSPMate Activity Diagram



In the above GPSmate activity diagram, the process is started with a 15 days of learning period followed by a decision whether the user goes to the location atleast once every 7 days. If not, he receives a reminder to visit that location. If the user visits, he shall receive no reminder.

If the user visit the location after the reminder, the cycle is set back to last date visited to next 7 days. This loops back to step 3. If the user doesn't visit the location inspite of the reminder, the cycle is reset to last reminder date. The process ends.

Stay Connected Mate activity Diagram



The above activity diagram, Stay Connected Mate when installed, screens through the call history of the user and picks the numbers which are called or received a call from for more than thrice and throws at the user as a suggestion if the user likes to add that number to the favorites list. If the user disapproves, it again goes back to the screening the call history to pick the next number.

If the approves the number, it will be added to the favorites list. After a certain interval of time, if the system recognizes that the user has not got in touch with the favorite num, the app suggest the user to contact the number

Conclusion

HelpMate largely utilizes the GPS on the phone to communicate and keep the track record of its locations. This information is fed to the database and is used for parking lot assist and GPS tracker.

Helpmate also connects to the call history and updates its internal database with number of times calls made to each number. This information is used to classify the contacts list and favorites by prompting to user to help generate a favorite list. At regular intervals of time, the user is suggested to get back in touch with that one such person, the user made calls more than a certain number of times. Thus HelpMate takes care of the social aspects of the user when the user is stuck in the daily chores of life.