Travel Safe

Description: Travel Safe allows a user to create an alarm and select a destination. The user can then send an alert to contacts selected by the user by text, email, or both options.

Functionality:

- Customize your travel alerts: Once user provides the required data (destination and alert type) and asks the app to start tracking, the app closes and runs in background. Customization of travel alerts involves selection of:
    - Type of alert (late/lost)
    - Select form of communication, via text, email, or both
    - Contacts to whom the alerts should be sent to
    - Message to be sent
- Track your trip: Once the app is opened the user will have two options to select from:
    - Select from your existing alert. The user will already have the predefined alerts from which can select. Enter destination and time of arrival.
    - Create a new alert only for this trip. User needs to provide, type of alert, message, contacts, and destination and, time of arrival.
    - If a significant deviation or delay from the expected route is detected Travel Safe will send the alerts to contacts which were selected by the user as well as notify the user and close the app.
- App closes and runs in the background. If no problems are detected and user reaches as expected, we show a simple notification to the user and close the app.
- Email Functionality: The message is sent either via email (using Mailgun) or SMS (using Twilio)

Algorithms:

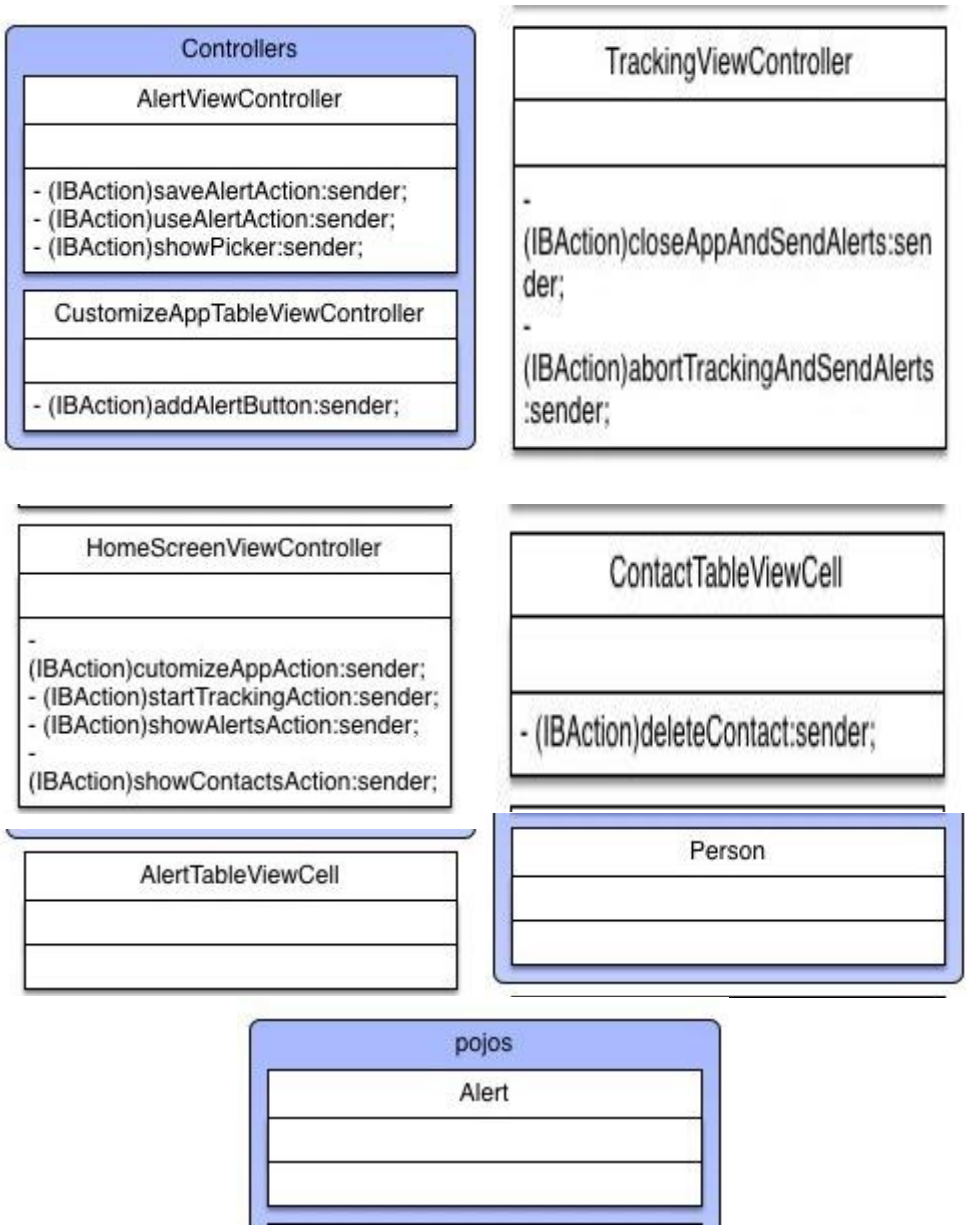
Late Alerts:

1. We track the user using maps feature of apple
2. Time to reach destination is provided by default by the app but can be set by the user as well. If the user is still in traffic and didn't reach the destination then an alert is sent to the contacts

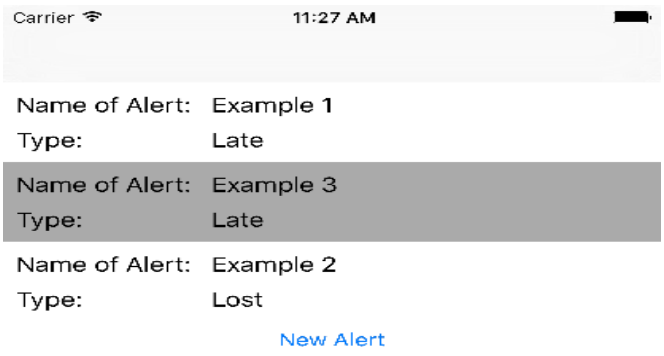
Lost Alerts:

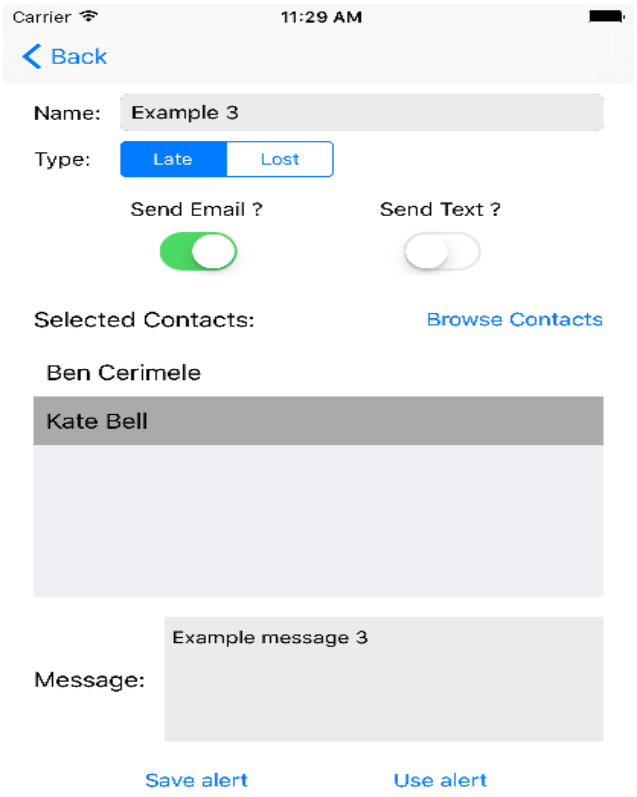
1. The app track the user using maps feature of apple.
2. The app will constantly track the user if they are lost, our algorithm detects if the user is lost considering various scenarios, a few of them
    a. The app will track the user in real time towards their destination. It is possible that the vehicle takes a different route, so the app should not have alert for all small deviations.
    b. If the vehicle changes direction and veers off course from the destination, then an alert would be used.
    c. If a vehicle changes direction and causes a slight deviation which does not detour from heading to the destination, then no alert will be used.
3. Once we decide that they are lost, we send out alerts to the contacts selected previously by the user.

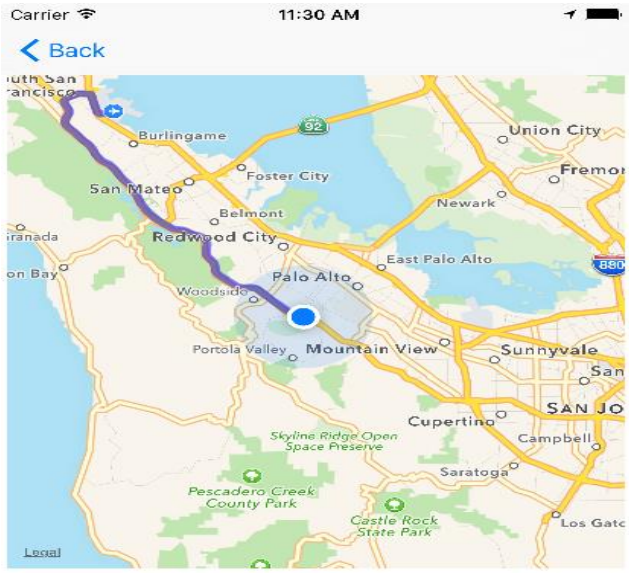
UML Diagrams:



User Interface:







ETT: 0 h 25 m

Destination:

San Fransisco Airport

Time to Reach: 00:34

Close the app and begin tracking

Stop tracking and send alerts