

**FamilyProtector Andriod Application
Design Document
CSC 780**

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FamilyProtector

Description

Every parent is always concerned about the safety of their children. They wish they could keep track of their children's whereabouts all the time. Parents want to make sure their children are in school during school hours or they come straight home from school or they are at their friend's house when they say so.

FamilyProtector is an android based mobile application which provides parental control to ensure that the child is at a particular location at a particular time. With the help of this application a parent can set the various locations a child is allowed to be. Along with that the parent can also set a location perimeter for the child. The application will use GPS to track the child's location and based on the location constraints set by the parent, will keep a check on the child. If the child goes beyond the set perimeter a message/alert will be sent to the parent.

FamilyProtector will also provide parents the ability to set paths; the child should take when walking to a particular location as well returning home from a particular location.

FamilyProtector thus ensures safety of the children and provides relief to the parents.

Use Cases

1. The parent shall be able to log into the application and set the application mode as parent mode or child mode
 - Application in 'Parent mode' will provide parental controls and will help parents track child's location
 - Application in 'Child mode' is on the child's phone
2. On the parent phone, user shall be able to add each child's information and phone details
3. On the child phone, the parent shall be able to set the various location the child can be allowed at and the perimeter for each of the locations
4. On the child phone, the parent shall be able to set a particular path the child should use to walk to a particular location or walk back from a location to home.
5. A message shall be sent to the parent's phone when the child goes outside the designated perimeter or deviates from set path.

Key Flows of the application

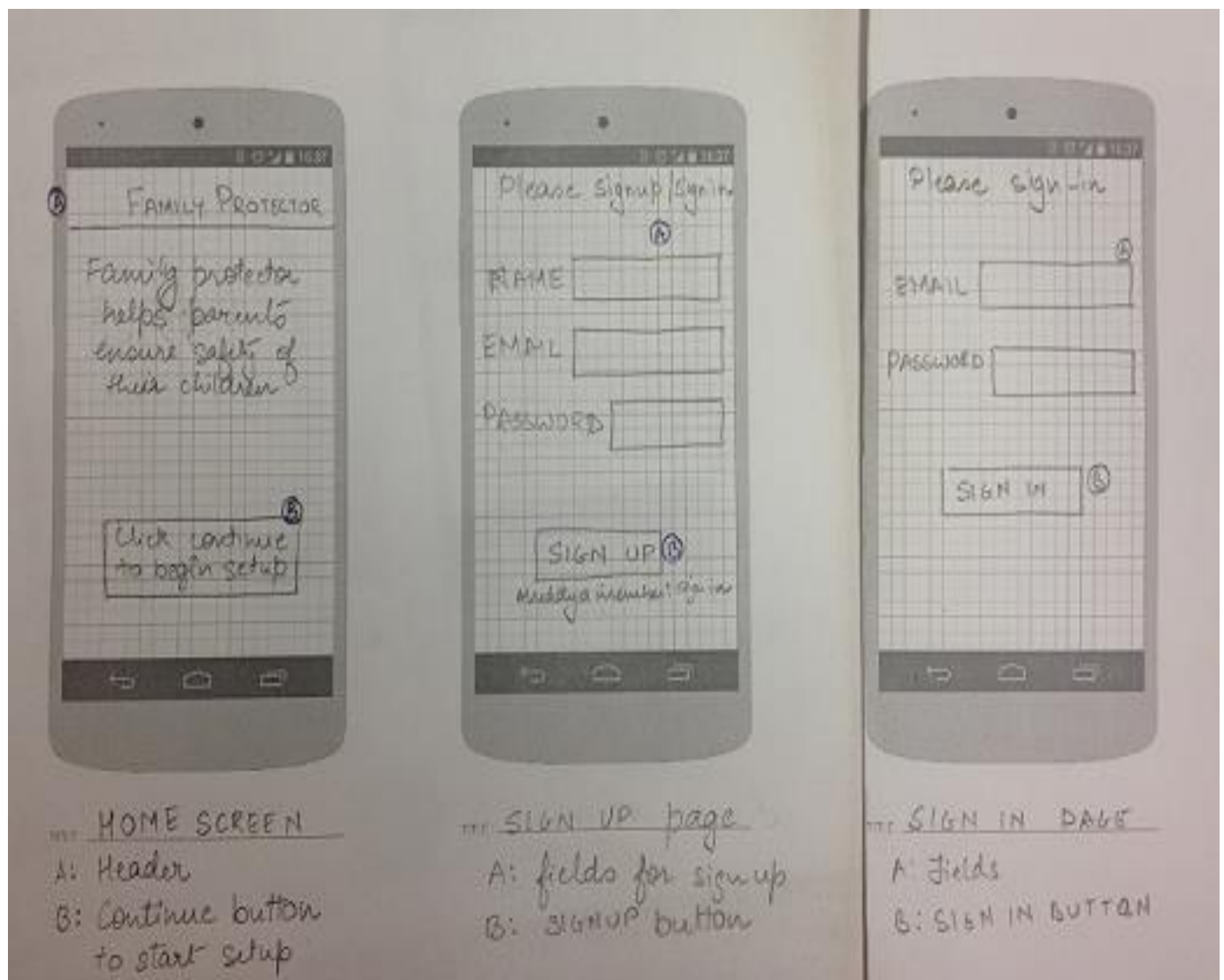
1. Login to the application and set the mode as parent mode or child mode.

Screen 1: Once the user downloads the application it greets the user and asks to click 'Continue' to start the set-up of the application

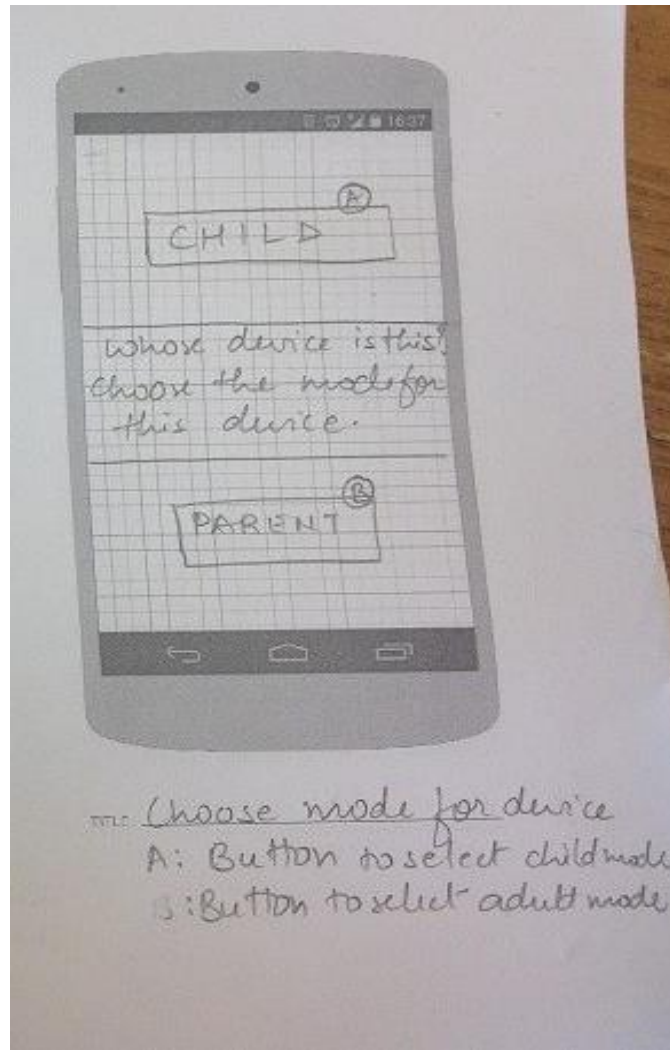
Screen 2: After clicking on 'Continue' the 'Sign up/Sign-in' page opens. The user needs to enter name, email address and password if he is a first time user. This password will be helpful when setting up the child account.

If the user is already a member, he can click on 'Already a member? Sign in' link below the 'Sign-up' button. It will redirect the user to the 'Sign-in' page.

Screen 3: On the 'Sign-in' page the user needs to enter the username and password.



Screen 4: Once the user performs 'Sign-in/Sign-up' he is redirected to the next screen which asks him to choose if the device is a parent device or child device.



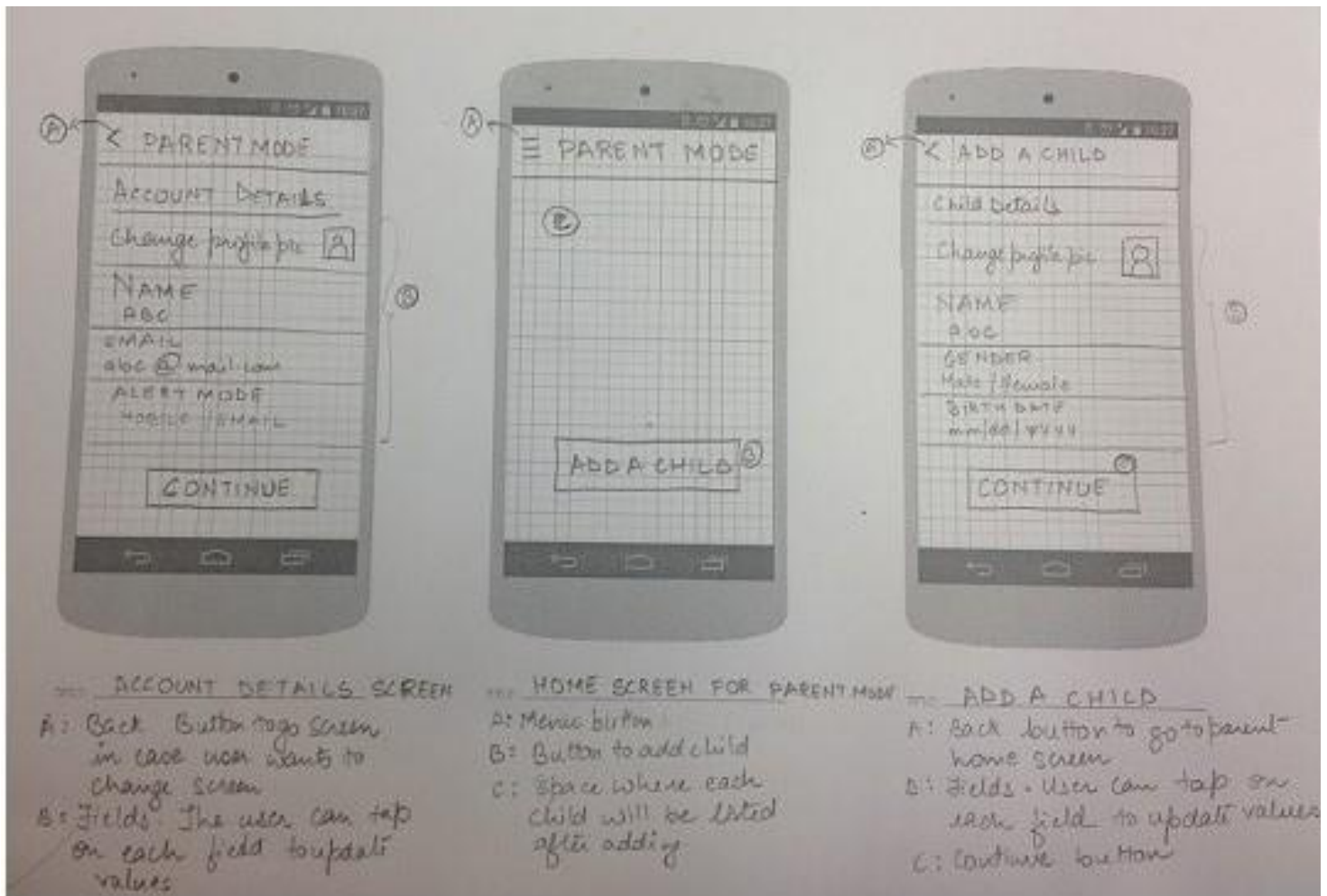
2. On the parent phone, user shall be able to add each child's information and phone details

If the user chooses 'Parent mode':

Screen 1: The user is directed to the 'Account Details Page'. The page has fields such as 'profile picture, name, email, alert mode (email, message)'. To change the values of each field the user can click on the field.

Screen 2: After clicking on 'Continue' the Parent home screen opens. On initial setup the screen will be empty and there will be a link at the bottom to add child details.

Screen 3: When the user clicks on the 'Add a child button'. The 'Add a child' screen is loaded. The page has fields such as 'child pic, name, gender and age'. To change the values of each field the user can click on the field.

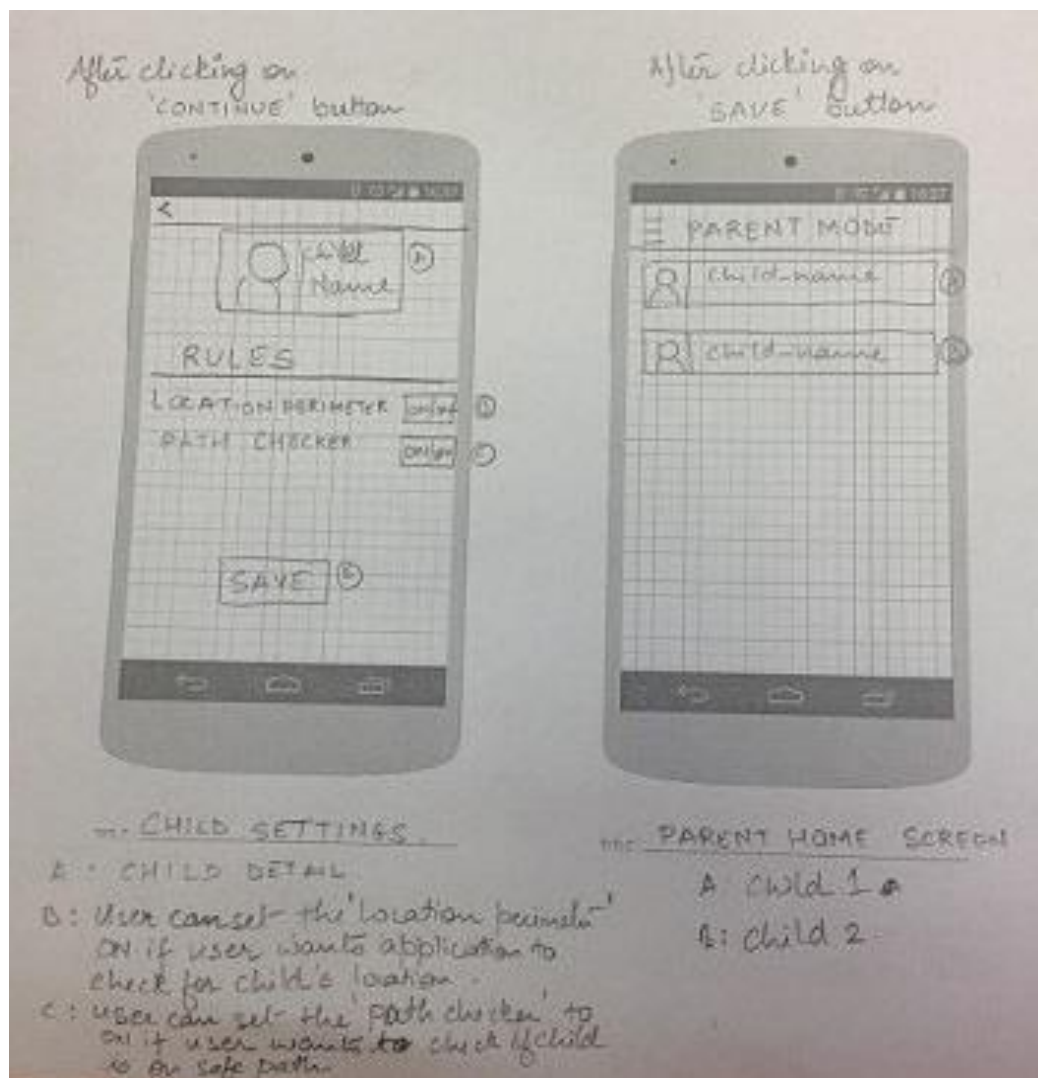


Screen 4: After clicking the 'Continue' button the user is directed to the child page. The page has the child image and name. The rules section will help the parent set-up the two trackers to either 'ON' or 'OFF'.

If the 'Location Perimeter' rule is ON, the application will keep a check on the child's location and if the child is not within the perimeter specified by the parent the application will send a notification to the parent. If the field value is OFF, the application will not check for the child's location.

If the 'path checker' rule is ON, the application will keep a check on the child's location and if the child deviates from the path specified by the parent while going to some place or returning home, the application will send a notification to the parent. If the field value is OFF, the application will not check for the child's location.

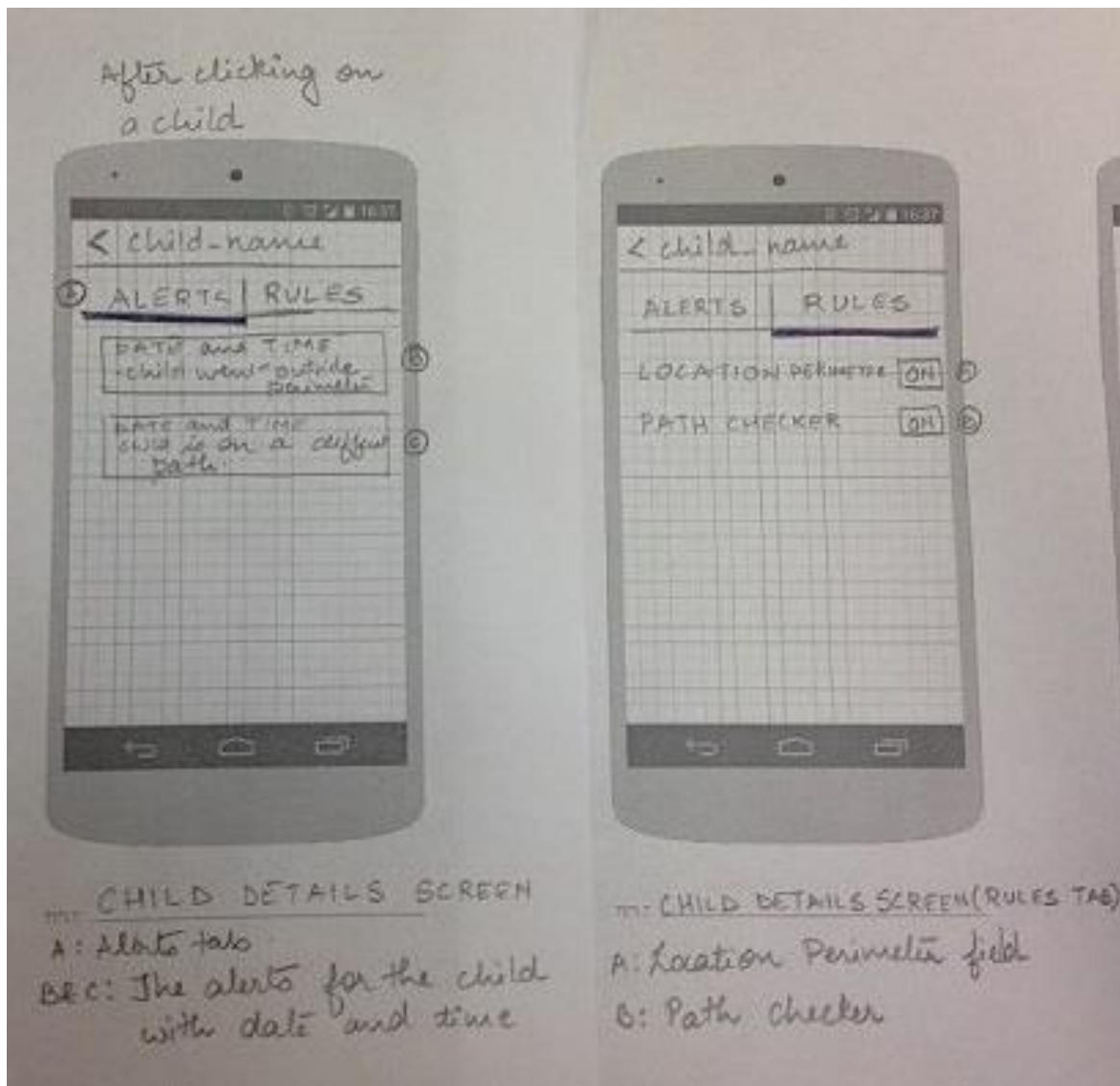
Screen 5: After clicking on 'SAVE' button the screen redirects to the 'Parent Home Screen' and it will list all the children added to the application.



Screen 6: If the user clicks on a child's name, the child screen will open up. It has two tabs 'Alerts' and 'Rules'

If the parent clicks on the 'Alerts' tab it will show all the alerts for the child with the date and the time.

Screen 7: If the user clicks on the 'Rules' tab it will show if the 'Location Perimeter' and the 'Path Checker' rules' values are 'ON' or 'OFF'.

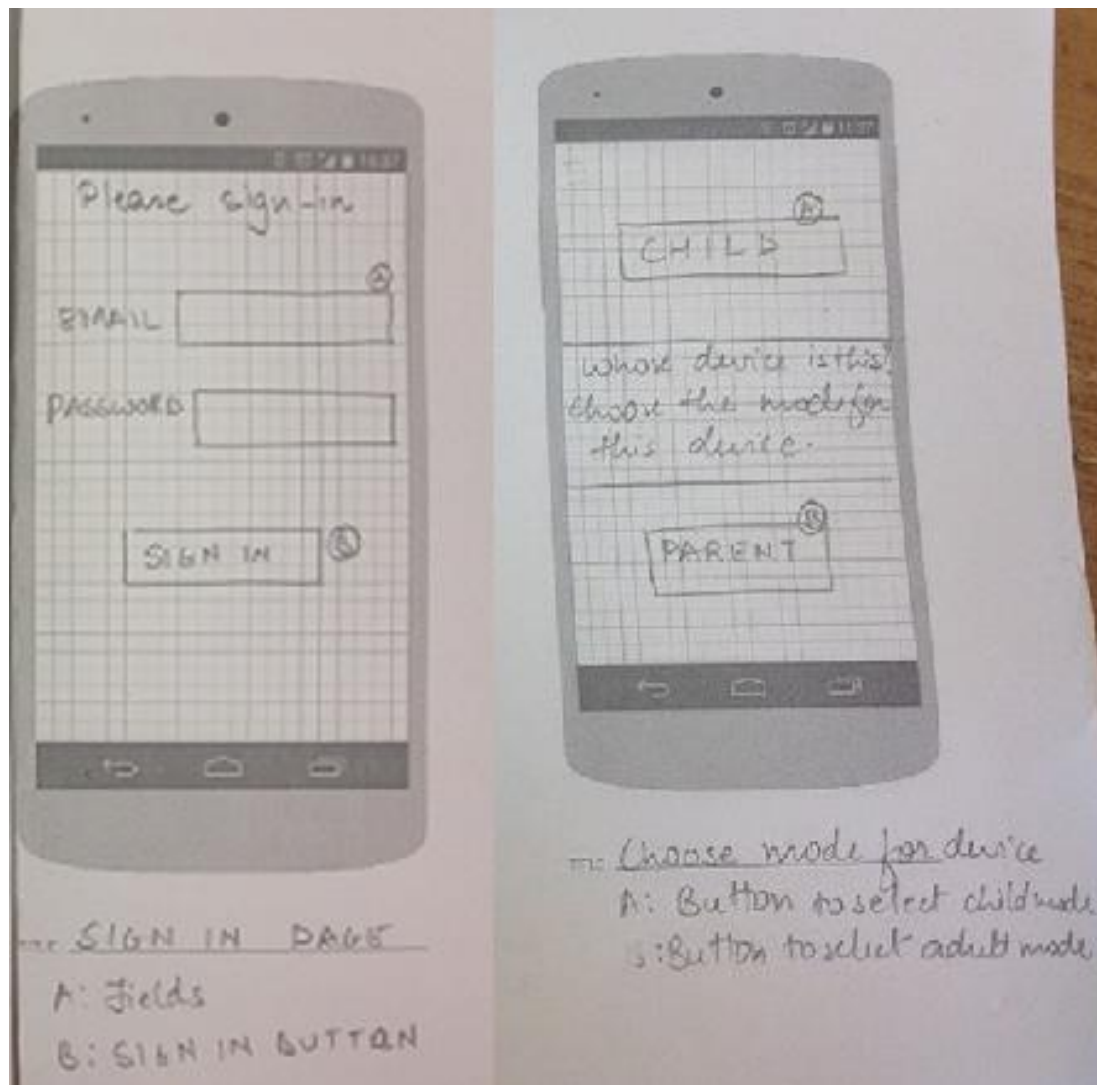


3. On the child phone, the parent shall be able to set the various location the child can be allowed at and the perimeter for each of the locations

The parent should download the application on the child's phone and after sign-in should select the 'child mode'. After selecting the child mode, the application will ask to select the child if there are multiple children on the account.

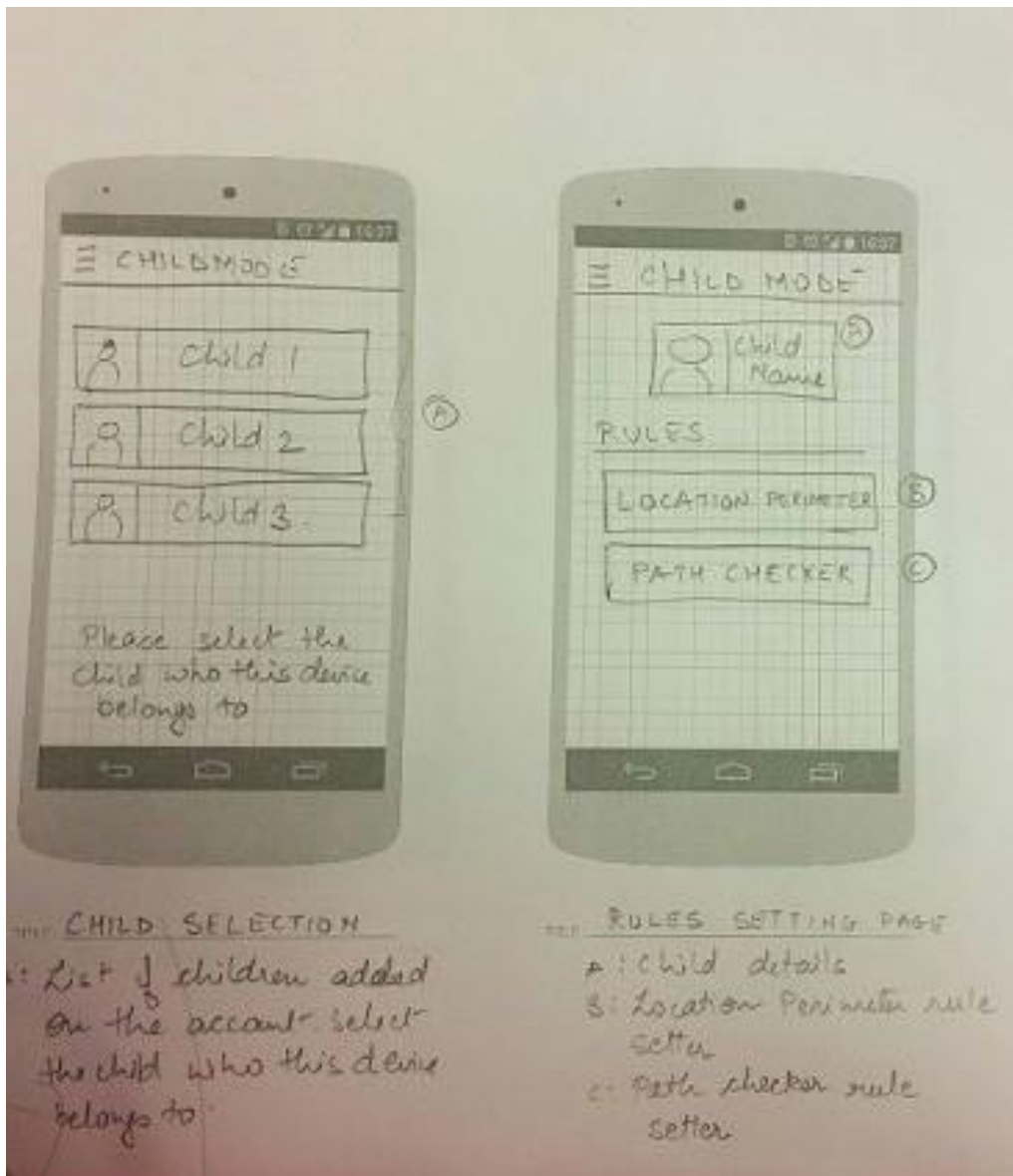
Screen 1: The sign-in screen. Since the parent account is already created they will choose the sign-in option and enter the credentials

Screen 2: After signing-in the parent should select the child mode.



Screen 3: After selecting the child mode, if there are multiple children added to the account, the list of children will be displayed. The parent can select the child who the device belongs to.

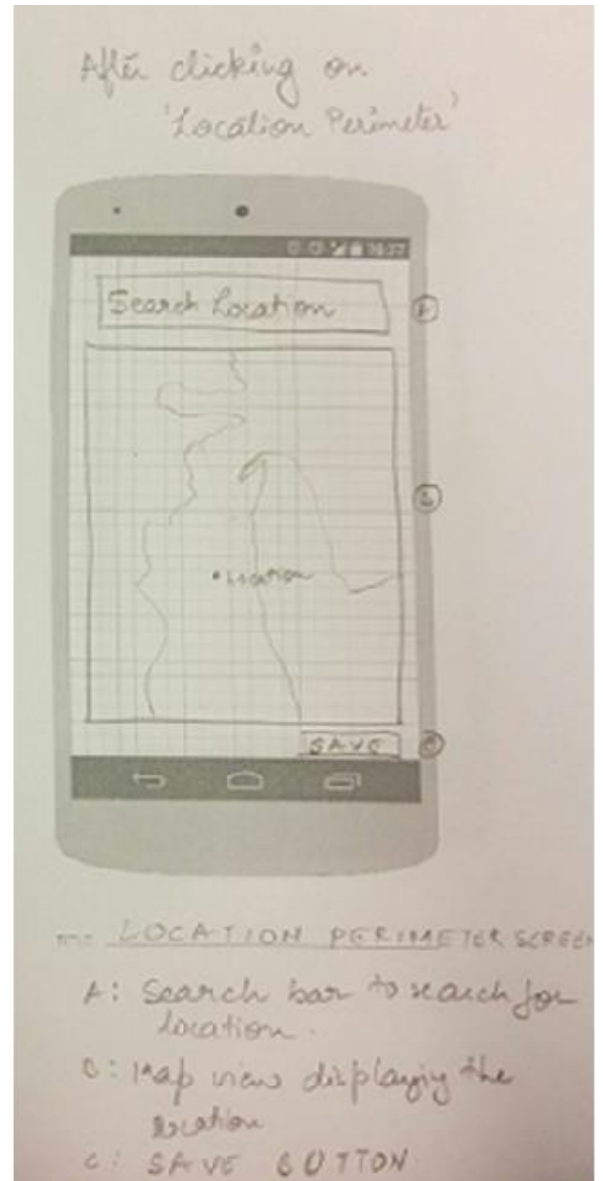
Screen 4: After clicking on the child it will show the child rules screen. There will be two buttons. One will help the parent set the 'Location Perimeter' rule. The other button will help the parent set the 'Path Checker' rule.



Screen 5: After selecting the 'Location Perimeter' button, a credentials check will occur.

The parent will have to enter the credentials used to sign-in. This security measure is used so that the child cannot set the rules on his/her own.

Screen 6: After clicking 'Submit', a map will open. It will have a search bar to search for a particular location. After searching it will show the location on the map. There is a 'Save' Button at the bottom



Screen 7: After clicking on the 'Save' button the parent is directed to the 'Location Perimeter' rule page. It contains the 'Location Name' from the previous screen. A text box 'Perimeter' to set the perimeter radius for that location.



The parent can similarly save multiple location perimeters for the child.

4. On the child phone, the parent shall be able to set a particular path the child should use to walk to a particular location or walk back from a location to home.

A parent can set a path a child should take while returning (walking) home from a particular location. Similarly the parent can set a path for the child to take while going to a particular location.

Screen 1: On the child phone, the parent should select 'Path Checker' option on the 'Rules Setting Page'.

Screen 2: After clicking on 'Path Checker', a credentials check will occur. The parent will have to enter the credentials used to sign-in.



Screen 3: After clicking submit, a map will open on the next screen. It will have two search bars, one to select the 'From' location and the other to select the 'To' location. After searching it will show all possible walking paths from the two locations. There is a 'Save' Button at the bottom. The parent can select the desired path and click on 'Save' Button.

Screen 4: After clicking on the 'Save' button, the parent is directed to the 'Path Checker' rule page. It contains the 'From location', 'To location' and the road name (i.e. the path selected by the parent from the previous screen). There is a 'Save' button at the bottom. After clicking on 'Save' the path is saved on the child's phone.



5. A message/alert shall be sent to the parent's phone when the child goes outside the designated perimeter or deviates from set path

Screen 1: If the child crosses the designated perimeter of a particular location or deviates from the path selected by the parent, an alert will be sent to the parent. Screen 1 shows the alert on the locked screen.

Screen 2: After clicking on the alert, the child screen of that particular child will open. The screen will be active on the 'Alerts' tab. The alert will specify the date and time and the location for which the perimeter was crossed or will notify that child is not on designated path.

