# CSE 535 Project Proposal (Group 10)

*The initial section shows the Project proposal as described in Phase 1. The updates to the project proposal in Phase 2 follow the Phase 1 description.*

**Phase I**

1. **Project Members**
   i. Rohit Iyengar (12078556775)
   ii. Kannan Haridas (1207685475)

2. **Project Idea**
   We are planning to build an all in one Weather Application on Android. This application will parse open Weather APIs available to give the current weather conditions based on location extracted from the GPS or entered by the user. We also plan to provide several other functionalities such as alert notifications for severe weather, 7-day weather forecast, weather on map, a weather widget, sunrise and sunset info, location history and a sharing functionality. We intend to provide some UX related features such as changing the UI to suit the weather conditions.
   **Project Relevance to class:** The project is a mobile application which has multiple features relevant to what we learn in the course. We will make use of Android Services which continuously run to provide weather details whenever there is a change in the weather conditions. We will use the phone's GPS to track the location and feed it to the service for current location based weather information. We will be leveraging Android location based services to provide weather info on a map. We will also be using certain storage mechanisms such as SQLite databases for location history of the user.

3. **Plan to use external sensors**
   For the scope of this project, we do not require any external sensors.

4. **Type of platform being used**
   The app should work on Android phones with Android API Level 19 + (KitKat and above).

5. **Development Setup**
   IDE: Android Studio 1.3
   Testing: Emulator (AVD), Personal Cell Phones.

6. **Specification of context aware behavior**
   i. We plan to use the GPS to get the current location to be fed into the weather service. This service will run in the background and will give weather updates as soon as there is a change in the location/city.
   ii. If the current weather conditions are rough, such as heavy rains or storms, the app will give a notification alerting the user about possible bad weather.
   iii. According to the weather conditions, the app will change UI/Background.

7. **10 tasks for the project (with the category – acquisition, delivery and reception, action)**
   i. Current Weather by Location – **Acquisition**: If the user enters a location in the search bar provided in the home page, the available locations are pulled from the Weather API instantaneously. The user selects a location, and the weather data for that location is retrieved using the Weather API and displayed on the home screen.
   ii. Location using GPS – **Acquisition**: The current location is obtained using GPS and the weather data for the location is displayed.
   iii. Weather Forecast - **Acquisition**: Along with the current weather details, a weather forecast is given for the next 7 days.
   iv. Changing Background According to Weather – **Action**: Based on the current weather conditions (**Context change**), the UI/Background of the application is changed (**Action**).
   v. Weather Notification – **Action**: Using the GPS to track the current location, the current weather details are monitored in the background. If there is change in weather conditions (**Context change**) or if the weather conditions are rough (**Context change**), notifications are given to the user (**Action**).
   vi. Location History – **Delivery and Reception**: The user's recent locations are stored in SQLite database and displayed in a history page. The user can select one of those locations and view current weather data for that location.
   vii. My Locations - **Delivery and Reception**: The user can store frequently visited locations for easier access. The locations are stored in SQLite database. The user can select one of those locations and view current weather data for that location.
   viii. Share on FB, Twitter – **Delivery and Reception**: The user can share the weather data for the selected location on Facebook or Twitter.
   ix. Location on Map – **Acquisition**: A map is provided on which the user can select a location and retrieve the weather data for the same. Google Maps API can be used to display the map.
   x. Sunrise/Sunset – **Acquisition**: Sunrise/sunset information can be retrieved from the API and added along with other weather data (Temperature, humidity).

   Additional Idea: We also intend to implement a home screen widget with current weather details if feasible.

8. **Timeline for each task and member responsible**

| Serial No | Task | Assignee | Deadline |
|---|---|---|---|
| 1 | Current Weather by Location | Rohit | 10/02/2015 |
| 2 | Location using GPS | Kannan | 10/02/2015 |
| 3 | Weather Forecast | Kannan | 10/16/2015 |
| 4 | Changing Background According to Weather | Rohit | 10/16/2015 |
| 5 | Weather Notification | Rohit | 10/23/2015 |
| 6 | Location History | Rohit | 10/30/2015 |
| 7 | My Locations | Kannan | 10/23/2015 |

| | | | |
|---|---|---|---|
| 8 | Share on FB, Twitter | Kannan | 10/30/2015 |
| 9 | Location on Map | Rohit | 11/06/2015 |
| 10 | Sunrise/Sunset | Kannan | 11/06/2015 |

**Phase II**

Based on the points mentioned in the Blackboard announcement:

**1. State your app name and 2 line description of your app.**

**Weather Now :** An all in one weather application for Android using which a user can obtain current and future (next 5 days) weather conditions for various locations , receive notifications based on changes in weather conditions and share the weather info on social media (Facebook and Twitter).

**2. Update your 10 tasks that you have finalized. Include the suggestions provided to you (if any).**

We did not receive any suggestions from the Professor or TA regarding our project.
Due to time constraints, we have decided not to implement the "additional idea" we had presented during our Phase I project document (Implementing a home screen widget).

**3. Mention the progress of the tasks.**

| Task | Percent completed | Description of completed task | Description of future tasks |
|---|---|---|---|
| 1.Current Weather by Location | 100% | For a given location, the current weather conditions (obtained using Weather API) are displayed. Provided a search bar for the user to select a location. | - |
| 2. Location using GPS | 100 % | The current location is obtained using GPS and the weather data for the location is displayed. | - |
| 3. Weather Forecast | 100% | For the given location, the weather conditions for the next 5 days are displayed. | - |
| 4. Changing Background | 100% | Based on the current weather condition, the UI background is changed. For example, if it is | - |

| | | | |
|---|---|---|---|
| According to Weather | | sunny, the UI background will become yellowish in color, if it is raining, the UI background will become dark gray in color, etc. | |
| 5. Weather Notification | 50% | Based on the current location obtained using GPS, if the temperature changes by 5 degrees (Fahrenheit) compared to a previously recorded value, a notification is given to the user. | Working on notifying rough conditions (stormy weather), sunset/sunrise etc. |
| 6. Location History | 75% | Added the current locations (searched by the user and obtained using GPS) to SQLite database. | Need to add the frequently searched locations and the favorites set by the user to the database. |
| 7. My Locations | Yet to start | - | Allow the user to store favorite locations. |
| 8. Share on FB, Twitter | Yet to start | - | Share weather info on FB and Twitter |
| 9. Location on Map | Yet to start | - | Integrate Google Maps API to select locations and obtain weather info. |
| 10.Sunrise/Sunset | Yet to start | - | Show sunrise/sunset data. |