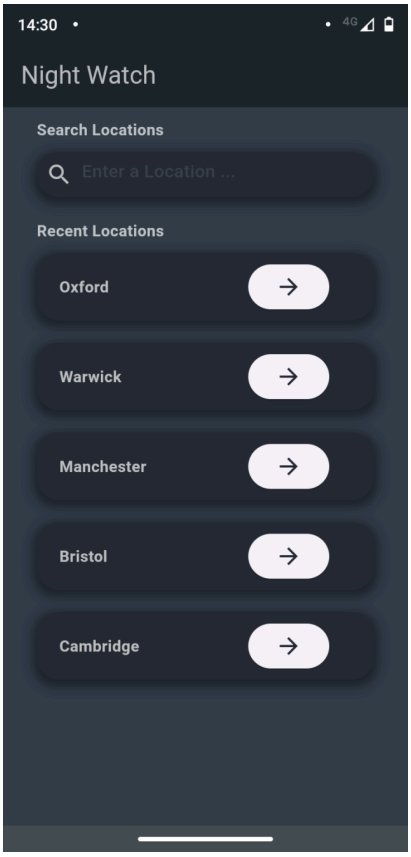
1. Usability Evaluation

We decided to use cognitive walkthrough to determine if first-time users of the app and amateur astronomers will be able to navigate the app easily and to make sure all the features of the app are intuitive and easy to grasp.

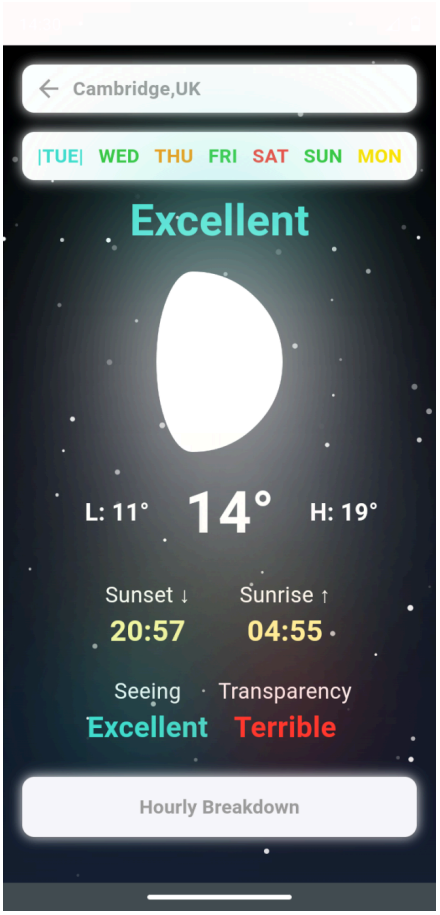
Inputs:
Users: Amateur astronomers who may not have a lot of technical knowledge about weather conditions for astronomy. They are members among the general public who are generally comfortable with using technology such as phones and phone apps.
Sample tasks for evaluation: Selecting a particular location to check the weather of that location, checking the weather for that day and checking its suitability for stargazing, getting a more in-depth view of the weather conditions for a particular day

Action sequences for completing tasks:

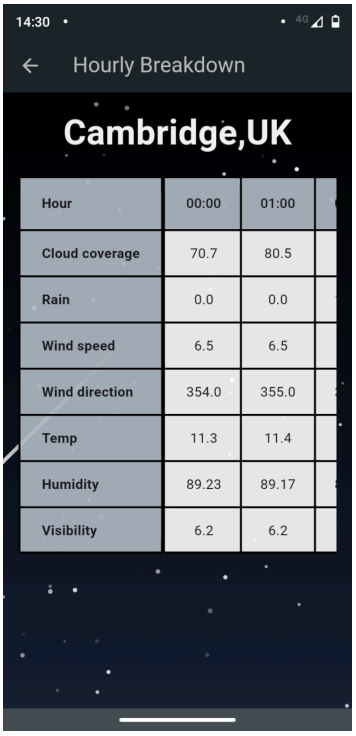


Selecting a particular location- When the user first opens the app, there is a loading screen as the necessary information from the API is collected. This screen keeps the user informed and reduces frustration from the user at the wait. Afterwards, the user will see a search page with a search bar prominently displayed at the top with the hint “Enter a location…”, such that the user will know to type in the location they are looking for into the search bar and select the desired location. In addition, recent locations are also displayed below the search bar with a forward button to make it more convenient so the user can click it directly instead of having to search for the location. After the user has selected the location, they will be directed to the home page. Since the search bar is still prominently displayed at the top with

the currently selected location, the user will know to click it to be redirected back to the search page if they want to switch the location.



Checking the weather and its suitability for stargazing- The suitability of the weather for stargazing is very clearly displayed at the top and is colour coded so the user can easily tell at a glance that the weather is good. The moon phase is also clearly shown, as well as some key information that is important for stargazing. At the top bar, there is also a list of days that the user can select from, and the user can tell how the suitability of the weather will change with the week by seeing the colour of the days. This should be easy to read for the user as it uses standard colour conventions such as red meaning bad and green meaning good.



Getting a more in-depth view of weather conditions- To know more about the change in weather conditions as the hours pass, the user clicks the large button on the home page that says “Hourly Breakdown” to be directed to a page that clearly shows the location and displays a more detailed view of weather conditions. The user will then scroll the table from left to right to see how certain weather conditions change with time.

2. Deviations from Lo-Fi

One way that we deviated from our Lo-Fi design was that we used a different API to the ones proposed. Due to problems like payment, not enough days forecast and not giving the information we needed to help stargazers (moon phase etc.) we decided to use the Visual Crossing Weather API. We also changed the times on display from dusk and dawn to sunset and sunrise because these were the times given by the API. We got rid of the UV index as a metric on the hourly breakdown, this is because a stargazer is normally out at night, in which UV levels are negligible/not important. We also changed the hours along the bottom of the home page into a button that opens up the hourly breakdown to reduce visual clutter. To improve the experience for new users, seeing and transparency are now words instead of numbers to express optimality.