

# ASSIGNMENT 3: EVALUATION

Group 43



Graphical User Interfaces  
ECS522U/ECS744P

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## PART 1: Summary of your evaluation. [10 marks]

The evaluation has shown us that although our design was correct in principle, there definitely are places where the interface could be improved. Using the 10 heuristic principles we each conducted the evaluation individually and made the final assessment by combining our findings. We found out that we violated 6 principles to various degrees.

We then deployed our findings into a table and agreed on the severity of the issues. Although we concluded that none of the problems were severe, our greatest concerns were with error prevention and flexibility, efficiency of use and help & documentation. This led us to proposing several adjustments and improvements that could be made in our application to enhance the interface accessibility and convenience for our end user.

Our proposed improvements are making the user confirm the change when switching temperature units or changing location. This will allow the last change in temperature preferences to be saved and loaded when the user opens the app again.

Another improvement we proposed to help tackle the problem with help and documentation is to allow the user to start a tutorial when opening the weather app to help any confusions they may encounter.

## PART 2: Evaluation Process [15 marks]

First our team had to decide on all the functions it would test. These included all the passive and active elements that could be seen or accessed within our GUI.

As our app was designed for active university students, our job as evaluators of the system was made easier because we already are the app's target user group.

Using the set of 10 heuristics we then split up and looked at all the features independently.

Firstly, visibility of system status: for example, if temperature is not loaded, the user should be informed. Secondly, every element in the weather application should be consistent with what the user knows instinctively and sees in real life. Next, all elements should also be consistent within the platform. This is so that users would not become confused by elements in the system which would cause them to make mistakes. In addition, recognition rather than recall is very important in a weather application in order for users to maximise efficiency while using the app. It should also not require effort from the user while performing actions inside the app, thus reinforcing the previous requirement. Furthermore, more focus on the important parts of the app should be given. Finally, help and documentation must be provided to the user if they do not know certain features within the app, such as the GPS button. Severity rating of problems with each feature was firstly done in general and afterwards in relation to primary user.

After finishing the individual heuristic data collection, we then compared the results in a group to find out where we agreed. Individual ratings of common issues were discussed and a rough average was formed for the final evaluation. The issues which were most common within the group were placed in a table found in part 3.

### PART 3: Findings [25 marks]

Heuristic Principle	Brief description of problem	How is the heuristic violated?	Severity rating (0- 4)
1.Visibility of system status.	N/a	N/a	0
2.Match between system and real world.	Difficult to navigate the settings button.	The app doesn't use a familiar concept for the user for the settings icon.	1
2.Match between system and real world.	Simple words. Do not use jargon. Use "temperature type".	Forces the user to learn a new word that relates back to the same concept.	1
3.User control and freedom.	N/a	N/a	0
4. Consistency and standards.	The main temperature icon is not consistent with the rest of the cartoon like icons of the app.	The icon styles are not consistent within the platform.	1
4. Consistency and standards.	Sunrise and sunset times have seconds in them while rest of the timings don't have any seconds.	The timings don't all follow the same format.	1
4. Consistency and standards	Symbols for precipitation and exercise are next to the values while the symbols for sunset and sunrise are next to the headings.	The symbol placements are not consistent within the platform.	1
4. Consistency and standards.	Search drop down box does not match with the colour scheme.	The colour theme is not consistent with the rest of the platform.	1
5. Error prevention.	If a user selects a location by mistake, time will be wasted loading for wrong information.	The application does not clearly mark a confirmation for the user to leave/exit when selecting a location.	2
5. Error prevention.	If a user changes units from celsius to fahrenheit by accident, the app will take time loading wrong information.	The application does not give an error message to confirm whether the user wants to change units or not.	2
6. Recognition rather than recall.	N/a	N/a	0

7. Flexibility and efficiency of use.	Users are not able to save preferred locations in the app.	A user cannot save a location resulting in inefficiency for every time they use the app. This slows down interaction for the experienced users.	2
7. Flexibility and efficiency of use.	Users cannot have Fahrenheit as their main temperature measurement.	When the app loads the default temperature reading is Celsius, users have to change to Fahrenheit manually.	2
8. Aesthetic and minimalist design.	Unnecessary "main temperature unit" in the settings tab.	Extra information distracting the user from his desired goal.	1
8. Aesthetic and minimalist design.	Unnecessary 'Today' tab on the main page of the app.	It's extra information that will distract users from relevant one.	1
9. Help users recognise, diagnose, and recover from errors.	N/a	N/a	0
10. Help and documentation.	A new user would probably not know what the GPS button does.	Documentation for the GPS button is not clear. This will help the user know what the button is GPS used for.	2

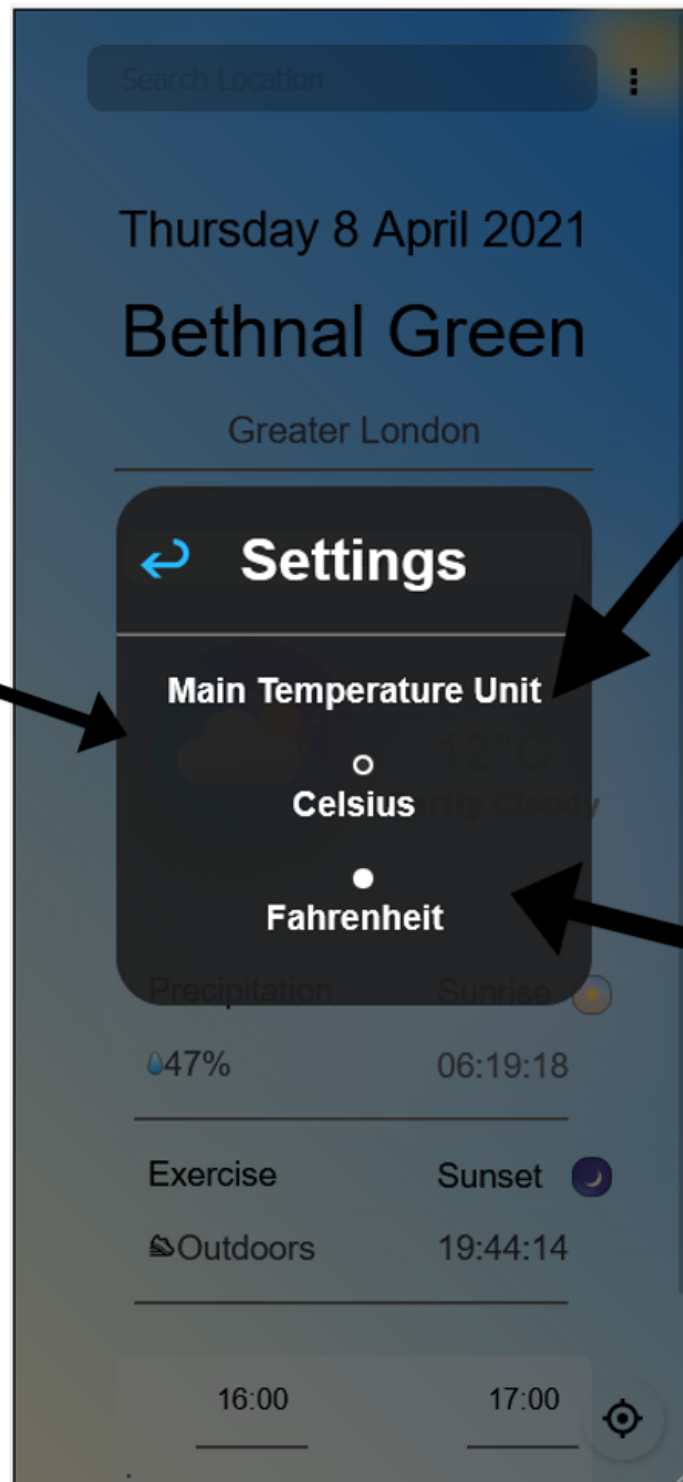


The problem violates the heuristic for match between system and real world. Here it is difficult to navigate the settings button as the three dots here may seem ambiguous to the user. There is ambiguity within the system as the user may be unfamiliar with this icon resulting in the button being unutilised. Three dots may not necessarily always resemble a setting icon for every user.

The main temperature icon used is inconsistent with the rest of the cartoon like icons used. This violates consistency and standards as the user may need to wonder that this result in different means or mean the same thing. This does not follow a set platform convention, leaving the user confused.

The symbols used for whether to exercise indoor or outdoor and precipitation are next to the values whereas for sunrise and sunset they are next to the headings. This is inconsistent and also violates the heuristic of consistency and standards as the placements are not consistent with the rest of the platform which could result in the user wondering if the different symbols and words mean the same thing or not.

Help and documentation heuristic is violated because a new user who is not use to the system may not know what this symbol means. Documentation for the GPS button is doubtful for a new user. A user will need documentation to provide help and guidance to what this icon means. This icon is currently unclear, not very large and there are no steps shown to explain what it does.



Error prevention is breached here as the user may change from Celsius to Fahrenheit or vice versa by accident. There is not a careful design which prevents this problem from occurring. This can create errors when the user is using the app as there is no approval and confirmation before they choose a temperature unit.

There is an unnecessary "main temperate unit" in the settings. This violates the aesthetic and minimalist design heuristic as the dialogue is irrelevant and not needed. This is an extra unit of information which will not benefit the user in any way as changing from Fahrenheit and Celsius is quite explicit.

Flexibility and efficiency of use is violated because users do not have the option to make Fahrenheit their main choice of unit when using the application. This would normally speed up interaction for an expert user as they can use the system and tailor it to their needs however the system does not cater to experienced or inexperienced users.

Users of the application have no choice to save a preferred location within the app. This problem affects flexibility and efficiency of use. This slows down interaction for the user as they cannot save a location that they would normally prefer. If a user is experienced, it will result in setting a location every time the app is opened which is inefficient.

Error prevention is violated. If a user selects a location accidentally, time will be wasted loading up data for an unwanted location. There is no confirmation/ prevention message to the user if they are certain that they would like to pick this location.

There is an unnecessary "today" tab within the main page of the app. This creates a problem with the aesthetic and minimalist design principle. The extra information is unwanted and can distract the user. This dialogue contains information which is not relevant and not needed and is an extra unit of information.

Consistency and standards principle is violated here. The blocked white theme for when searching the location is different to the search bar. This goes against consistency with the rest of the platform.

Consistency and standards principle is violated here. The sunrise and sunset times provide the time including seconds whereas the rest of the timings for the weather in the app do not provide seconds. The users may wonder whether different situations mean something different.





## PART 4: Proposed improvements [50 marks]

### **Improvements:**

Customisation (minimise clutter): Settings menu - gear icon instead of three dots for better real world matching. Inside the settings menu, there should be fewer words to minimise clutter and focus on important parts.

To maximise time efficiency while using the application, what the user instinctively knows in real life should be applied inside the system. For this reason, the settings button would be more suited as a gear icon instead of three dots. This is because the user is accustomed to that visual representation of a settings menu from all the devices that they own and use on a daily basis, such as a smartphone. Additionally, inside the settings menu, there should be fewer words to minimise clutter and focus the user's attention on important elements of the app. This means that the "Main temperature unit" should not be shown to the user as it is intuitive to select either "Celsius" or "Fahrenheit" as the main unit. Finally, on the main weather app page there is a "Today" tab below today's date. This is unnecessary as there is currently only today's temperature forecast available to the user, and that information is already known by the user from looking at the features provided by the app. Thus, "Today" must not be part of this current version of the weather application.

**Error prevention:** When a user selects a location, they should be prompted for confirmation. Reduces error temperature units conversion - Confirmation of change so as to reduce users making a mistake.

When a user currently selects a location, the location changes immediately. This can cause extra unintentional loading times if the user selects it by mistake. Similarly, when the user changes the temperature units, the units change instantaneously. This causes the same problem, unnecessary loading times if the user makes a small mistake. This is inconvenient, especially since the target user would appreciate checking the weather quickly and then continue with their day. Currently, an improvement to this problem is a confirmation of change, linking back to error prevention. When a user selects a location or changes the temperature units, they are prompted with a question asking if they want to continue with the action they performed. This may be slower in some cases, but a lot more efficient in the long term if the user constantly checks the weather in different locations.

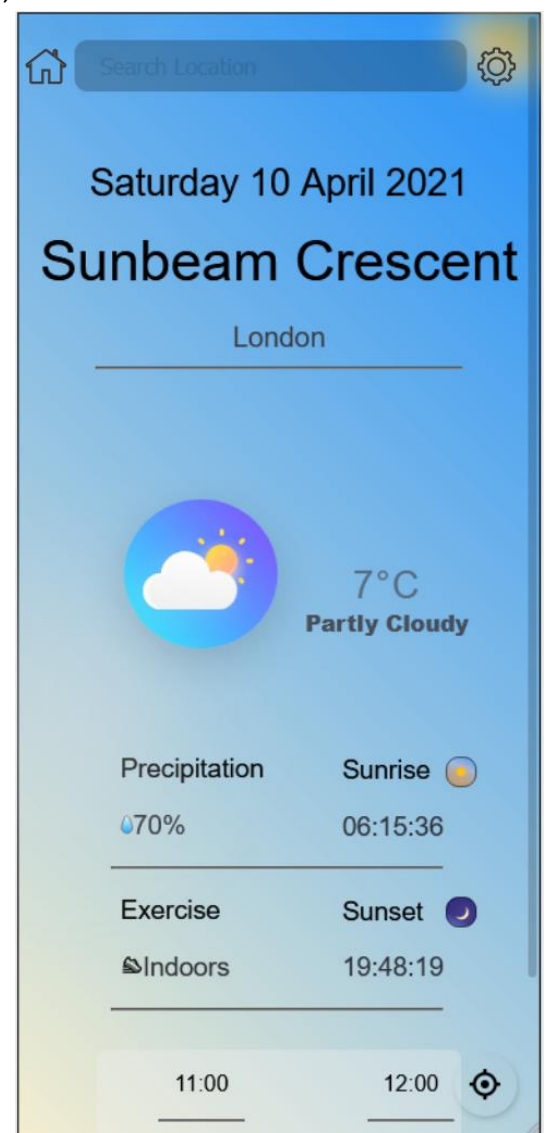
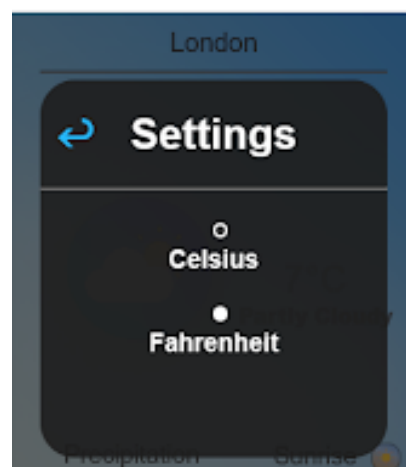
**Help and documentation:** Tutorial when the user first opens the weather app to help with the GPS button and any other confusions or mistakes they may make along the way.

Even though it was our best effort to make the interface of our app as simple and intuitive as possible, there may be some users, who still find it difficult to understand all the functionality when they first open the app, or forget some of it after some time off of the app.

That is why we would like to include a help mode in case anyone is struggling to use the app. This help mode will be turned on by a button above our gps button. After turning the help mode on(signified by help button lighting red) if a user clicks any feature on the display a text box with a short explanation of the feature will pop up on the screen until the user clicks another feature(which opens another textbox) or the same one again(closes current textbox). Users will not be able to use any of the app's normal functionality in this mode. To go back to normal mode the user has to click the help button again, setting it into its original color.

**Efficiency/expertise:** users are able to save different locations to be more efficient temperature units conversion - Celsius is always the main unit, should be allowed to change.

As a returning user it is always nice when you can have your apps customized to your liking and the system should remember your preferences. Having a custom home address which loads up when you access the system could save users significant time when accessing the app frequently. This "home address" feature will be implemented as a house icon to the left of the search bar. When the user first clicks the icon a textbox will pop up on the screen asking the user to input his home address (results will show up the same way as with regular search). After the user types the address a confirmation will prompt the user to accept or search again. When clicking the icon later a box displaying the current home address and a change button will pop up. The last change in temperature preferences should also be saved and loaded properly when the user opens the app again.



**Member Contribution:**

Hamima Zainab, Tomas Hrdlicka, Antonio-Alexandru Caragheorghe, Samuele Joshi & Vakisan Manoharan all contributed to the success of this project.