

Heuristic Evaluation

Team 2 : The Berry Bunch

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Undergraduate Design:

The undergraduate students design a web application for use on desktop and mobile devices. Their system will use GIS to display and populate a map of berry harvest. The system will use GPS data from devices for map interactions. Their applications can be used by foragers, scientists, tourists and residents in Great Lakes Region. Users can get some information about berries to pick them up, and scientists will also be able to learn more information about local berry types, common uses, and the invasive fruit fly that is affecting harvests.

Identification of UI Domain:

The Berry Bunch is a web application which can be used on desktop or mobile devices. It can be treated as a web-based user interface. It allows users to register an account and then upload some data to this app. Also, users can choose their data to be public or private. It also allows users to send some survey data to database. Based on those information, tourists can efficiently choose where to pick berries. Scientists can also utilize the data from this app to observe the effects on the diversity of berries due to the presence of spotted wing drosophila.

Heuristic usability principles for the design's UI domain

This evaluation is based on the Jakob Nielsen's previous work (<https://www.nngroup.com/articles/tenusability-heuristics/>)

1. **Visibility of system status:** The system should always let users know what is happening. The information should be updated instantly.
2. **Match between system and real world:** The system should use user's language to communicate. System's language should be easy for users to understand.
3. **User control and freedom:** Users may choose system functions by mistake, therefore, the system should have return functionality such as undo or redo.
4. **Consistency and standards:** Users should not have to wonder whether different words, situations, or actions mean the same thing
5. **Error prevention:** Even better than good error messages is a careful design which prevents a problem from occurring in the first place. Either eliminate error-prone conditions or check for them and present users with a confirmation option before they commit to the action.
6. **Recognition rather than recall:** Try to make objects, options and actions visible. The user should not have to remember information from one part to the other part. Instructions for use of the system should also be visible.
7. **Flexibility and efficiency of use:** The system should be easy to use for experts or new users. It should help the users to finish the task quickly and efficiently.
8. **Aesthetic and minimalist design:** All information provided by system should be useful. Also, design should be as simple as it can be.
9. **Help users recognize, diagnose, and recover from errors:** There should be a message displayed when error occurs. Also, a potential solution should also be provided to users when error occurs.
10. **Help and documentation:** A clear and well organized documentation should be provided to users. Any information about the system should be posted and easy to search.

Usability problems:

1. Frequently Asked Questions part

Usability principle violated: help and documentation

It seems they did not show the FAQ part for now. Help and documentation part is important for users to get familiar with the application. Those documents should be posted on their website and easy to search.

2. The message before sign up

Usability principle violated: Flexibility and efficiency of use

They should give a short description or a link to demonstrate the difference between registered users and unregistered users in their sign up page. For example, they should claim what kind of data can be accessed by an unregistered user. The users should clearly know their privileges before they decide to be a guest or not.

3. Error message when connection is broken

Usability principle violated: Help users recognize, diagnose, and recover from errors

Since the app is targeted on mobile devices. Therefore, when the internet is broken, a message should be provided. Also, during this process, the app should be able to keep data integrity and make sure the data is correct when the network is connected.

4. Cancel button for survey page

Usability principle violated: User control and freedom

In the survey page, there is no cancel or undo button. Users may fill wrong information by mistake, therefore, a cancel button or a undo button can help users to correct the information or data.

5. Need more information in scientist view page

Usability principle violated: Flexibility and efficiency of use

In the scientist view page, there are only two graphs for now. I think it is better to provide some data or analysis. A link can be provided to access the original data. Graphs are better for visualization, but scientists may need original accurate data to do analysis.

Critical Usability Concerns:

1. The lack of the information before sign up may confuse some users. The application should tell users the difference between a guest and a registered user. They should specify privileges of a guest and a registered user.

Story: James is a student and he likes eating berries. After he knows this app, he downloads it on his cell phone. He wants to know where berries are located so that he can pick them up. When he first opens the app, he detects there are two kinds of users, guest and registered user. He doesn't find any description about the difference between them. He is afraid that a guest may not have privileges to access the locations of berries. Therefore, he enters his email and becomes a registered user. Actually, James just wants to see the locations of those berries, a guest user can have this privilege. If the application can clarify the difference between sign up, James will not waste the time to create an account.

2. Need more information in the scientist view page. Currently, they only show the graphs about the data. It is good for visualization. However, some scientific research needs accurate data to do mathematical analysis. They should provide a link to download these data.

Story: Eric is an ecology scientist and currently he is working on the diversity of plants. He chooses berry as a case study. After he knows this app, he is excited and he thinks it will be helpful for his research. He downloads the app and enters the scientist view page. There are some graphs but he can not find a way to download these data. He already has built a math model for his theory, now he needs some real world data to verify that. The app provides a platform for him, but it would be better for him if he can download the original data.