

# **Evaluation Assignment 2**

## **Heuristic Evaluation**

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## SYSTEM OVERVIEW

The team is required to develop a mobile application (app) to monitor and record mass spawning events on Australia's coral reefs. Using the app, citizen scientists (like tourists, divers, scientists, nature enthusiasts, students) will upload their observations and photos (of the coral reefs) to a database, allowing scientists to track the timing of mass coral spawning over a long period of time (about a decade) and potentially identify long-term changes in the patterns of mass coral spawning. Most reef locations are remote and cellular signal may be limited, so ideally the app would be able to store the collected information until the collector is within signal range to send the data to the database. It is expected that the app would be used by tourists, divers, students and scientists who are nature enthusiasts and for whom viewing coral spawning might as well be a hobby. As the app will be used by both novices and experts alike, it needs to be user-friendly and easy to use.

## SIMPLIFIED HTA

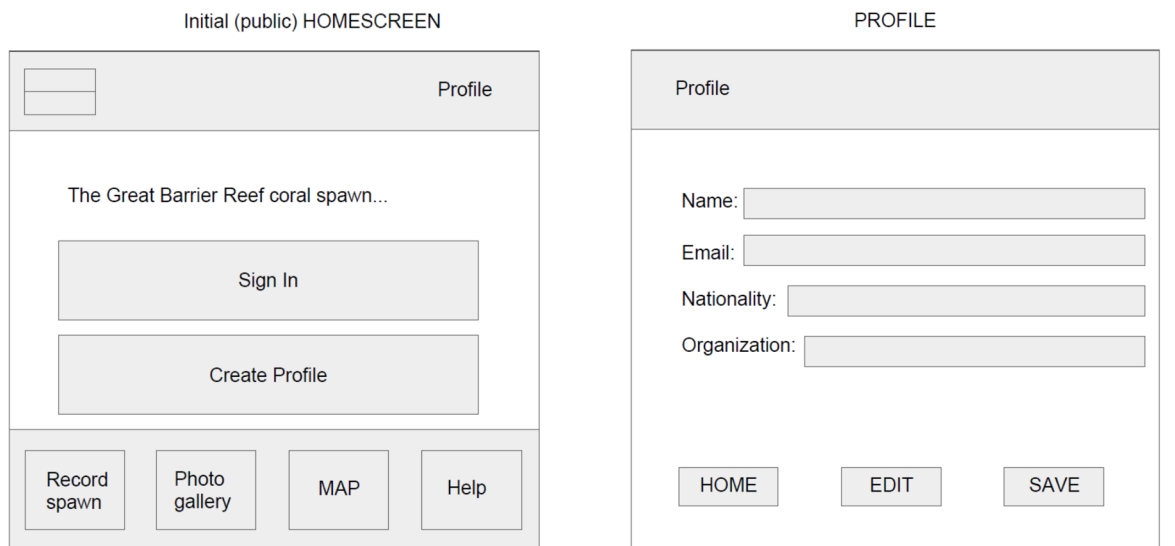
- Upload picture of coral spawning
- Record data
  - Date
  - Time
  - Location
  - Number of colonies
  - Coral Type
  - Water temperature
  - Sea State
- Add additional comments if desired
  
- Information and User Guide
  - Provide guide/tutorial for using the app
  - Info on coral spawning and why this app is used
  - Coral ID (Photos and descriptions of families)
  - Scientist's contact details
  
- My Profile
  - Information about the user of the app
    - Name
    - Email Address
    - Nationality
    - Name of their organization/vessel/tourist resort
  - Information Uploaded to database as metadata
  
- Photo Gallery
  - Page of photos/ photo gallery generated from uploaded photos by citizen scientists
  - Page with a map (like google maps)
    - Shows where spawning has been recorded

- Home Screen
  - Navigates to each of the four other pages

## HTA SUMMARY

The App opens to a home page which gives an overview of the project and prompts the user to create their profile by entering their information (name, Email ID, nationality and the organization through which they visited the reefs). Once they have entered this information, they will be taken to the submission page with instructions to enter the following information: upload pictures, Date, Time, Location, Number of colonies, Coral Type, Water temperature, Sea State. There will also be provision for them to add additional comments if desired. All the information necessary for entering details for Number of colonies, Coral Type, Water temperature, Sea State will be provided in the form of a drop-down menu, from which the user will choose the most appropriate data. They will also see a link to the guide in case they want to read up more information before choosing any option. Once they have entered all the information they will be asked if they wish to visit the gallery and the map showing the places where spawning has occurred. Depending on their selection, they will either if they directed to the gallery or back to the home page. If they choose to visit the gallery and click on the photos there, more information about the photo will be displayed.

## OVERVIEW OF SYSTEM DESIGN



Personal HOMESCREEN

Profile

Unsubmitted Records

<Offline saves> ...

Past Reports  
.  
.  
.

NEW SURVEY (TOP)

Date/Time (Auto)

Location <...>

NEW SURVEY (BOTTOM)

Show uploads

# of colonies spawning

Coral Type

Water Temp  
  F  C

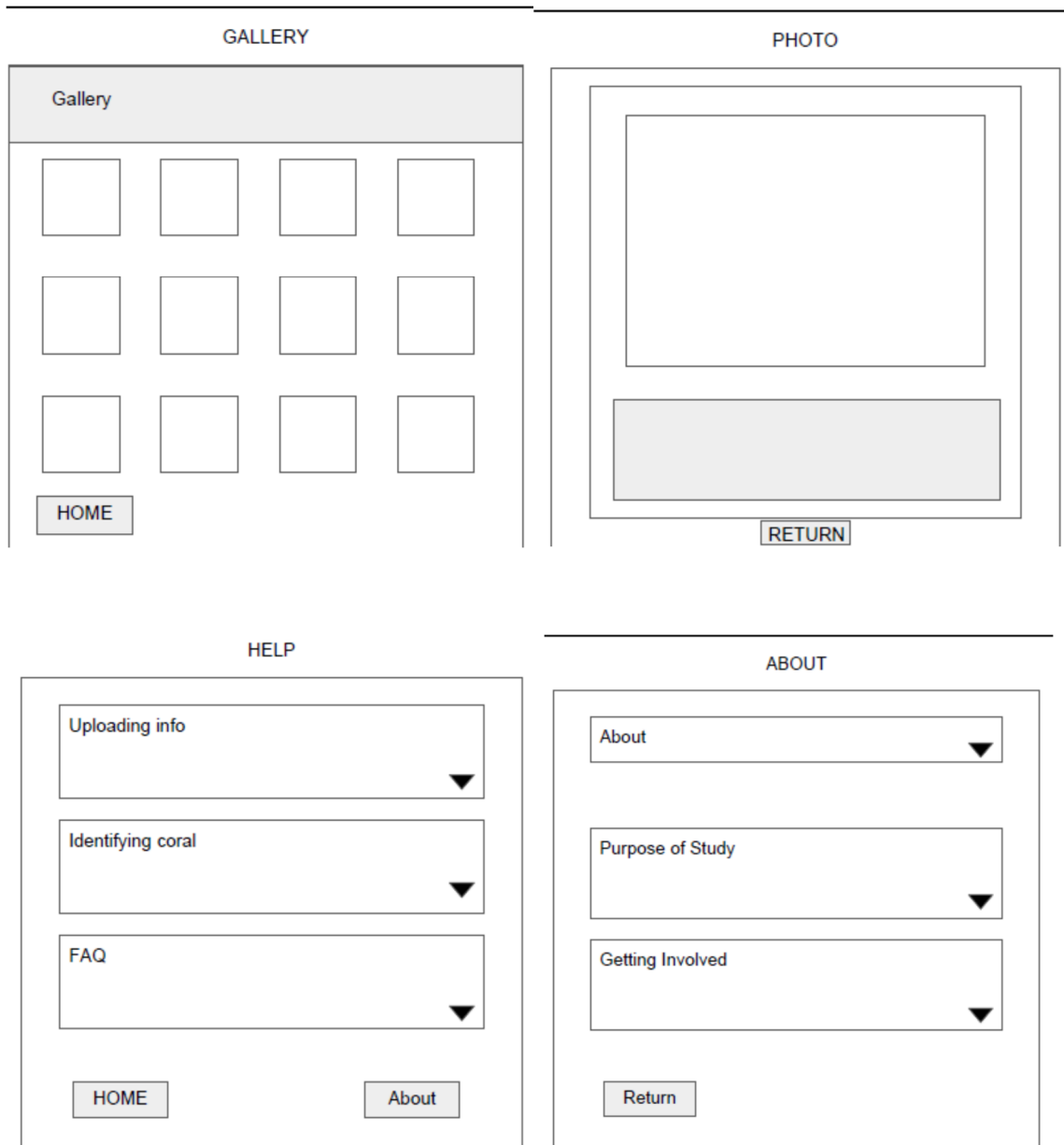
Sea State

Comments

MAP

Profile

Google Map  
c@curlocation



## UI DOMAIN

A **good interface** makes it easy for **users** to understand what is to be done and to tell the application/mobile/ PC what they want to do. It makes it easy for the application/mobile/ PC to request information from the **users**, and for it to present understandable information. Clear communication between the **user** and the application is the working premise of **good** UI design. The UI domain under consideration here is a web and mobile application. We will refer to the 10

# HEURISTIC USABILITY PRINCIPLES

## 10 Usability Heuristics for User Interface Design by Jakob Nielsen:

### Visibility of system status

The system should always keep users informed about what is going on, through **appropriate feedback** within reasonable time. For example, we know that the browser is looking for the website that we typed in the address bar, when we see the circling ring in the browser tab.

Does this system have a feedback system where in a user will know what s/he should do next?

### Match between system and the real world

The system should speak the users' language, with words, phrases and concepts familiar to the user, rather than system-oriented terms. Follow real-world conventions, making information appear in a natural and logical order.

The home screen in this system is slightly confusing. There are two buttons: sign in and create profile. It might be a better option to have a sentence instead of buttons saying: 'If this is your first time, **read the instructions** or **create a profile**, if not, continue to **sign in** and upload your pictures. In the Profile page, instead of 'Nationality' 'Your Nationality' is more clearer and instead of 'Organization' it can be 'Organization that brought you to the coral reef'. Or a '?' symbol should be near each terminology, which when clicked will pop up an explanation for that term/word.

### User control and freedom

Users often choose system functions by mistake and will need a clearly marked "emergency exit" to leave the unwanted state without having to go through an extended dialogue. Support undo and redo.

Does this system have the provision to undo any action if the user wanted to? Like a confirmation message when deleting any information/picture?

### Consistency and standards

Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform conventions.

The personal Home screen is different from the other screens and is a bit difficult to make sense of. Why is 'About' in the 'Help' page? Return button on PHOTO page can be renamed as GO BACK to maintain convention.

## **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.

## **Recognition rather than recall**

Minimize the user's memory load by making objects, actions, and options visible. The user should not have to remember information from one part of the dialogue to another. Instructions for use of the system should be visible or easily retrievable whenever appropriate.

In this system, all the information buttons should ideally be drop down menus with the choices given. For an example of a coral type; the diverse types of corals could be mentioned, possibly with a picture of each as a redundancy factor and make it easier for the user to identify it correctly.

## **Flexibility and efficiency of use**

Accelerators — unseen by the novice user — may often speed up the interaction for the expert user such that the system can cater to both inexperienced and experienced users. Allow users to tailor frequent actions.

Maybe an arrow on each page saying: 'start here'? or arranging the tasks in serial order: top to bottom so that the user automatically starts filling information in that order.

## **Aesthetic and minimalist design**

Dialogues should not contain information which is irrelevant or rarely needed. Every extra unit of information in a dialogue competes with the relevant units of information and diminishes their relative visibility.

The system is relatively simple and minimalistic in its design, which is good.

## **Help users recognize, diagnose, and recover from errors**

Error messages should be expressed in plain language (no codes), precisely indicate the problem, and constructively suggest a solution.

## **Help and documentation**

Even though it is better if the system can be used without documentation, it may be necessary to provide help and documentation. Any such information should be easy to search, focused on the user's task, list concrete steps to be carried out, and not be too large.

In this system, HELP documentation can be made available on each page via the HELP button and within the HELP page, instructions are present for each webpage page.

### **Other Concerns:**

- How will this App work offline? How will real time information like location , water temperature, sea state be captured?
- User needs to be motivated to use this app as it will take some effort and time on their part to upload all details. Can we achieve this by making the process simple, visual and pointers on each page to complete that task? Where is the data collected stored?
- Is information is saved as it is being entered? So that in case the user has to stop midway, s/he doesn't lose the entered details.
- Does the bottom menu bar remain constant across screens?
- Explanation for MAP screen and a one-line explanation on each screen so that the user understands what s/he is supposed to do.
- The ABOUT button can be below on the menu bar instead of in the HELP page.
- PERSONAL HOME SCREEN page is unclear in terms of what needs to be done.

### **STORY:**

I'm Lisa, a diving instructor with 'The Mariner Explorers', a company undertaking diving assignments and tourist explorations. I'm also pursuing a graduate degree in marine biology. I had had been informed that there was an App to help study coral spawning and I was excited to try it out and contribute towards this project. I downloaded this app on my android phone. I took pictures of the coral reefs during my dive. It was a beautiful sight with the spawning in full swing. Once I reached back, in my hotel room, I opened the app to upload my pictures. The first screen said sign up and create profile. I was a bit confused as to which one I had to click first. I clicked sign in, but when I got a message that my username/email doesn't exist, realized that I had to have created a profile first. So I clicked create profile and started filling out the fields on the Profile page. By organization, do they mean the one I work in? I saved it and clicked Home again. So, should I go to Record spawn...but I didn't record, I just took pictures (*misunderstanding of the word record*)...anyhow I clicked it and the screen had some info. I clicked the upload button (*which page is the user taken to? Does it gets saved on this page itself or is she taken to the Survey page?*) I am in the new Survey page . I fill the fields. I don't know the location, am unsure of the sea state and not very certain of the water temperature either. I mention these in the comments and save. I wonder what's the save and upload button for? Once I save and upload, I am taken to the home page ? I decide to look at the gallery and other pictures there. By accident when I hovered over a picture, I realized I could click it and on doing so, it brought up some info about it. I wanted to know more about the company and the story behind the app, but couldn't find the info. So I just clicked the help button and when I did, there was a button named About and I clicked it , assuming



it would have the info I wanted. It's a simple app, but needs to be more organized and easier to understand.