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# Crab Shack Kitchen Web Application

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## EVALUATION ASSIGNMENT 6

### USABILITY TEST REPORT

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April 22, 2016

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# 1 Introduction

## 1.1 Web System Description

The primary focus of the Crab shack kitchen application is to provide a faster method of cataloging specimens compared to manually typing specimen names into database software. Keeping this in mind the goal of the system design is to be clear, simple and efficient to use. The design's main focus is the cataloging process which includes selecting 1 of 4 buttons for each specimen property.

## 1.2 Test Goals and Description

The tests try to mimic real world cataloging scenarios. Speed tests are conducted to obtain a quantitative measure of average cataloging times of various application layouts. The tests also help get subjective feedback about different layout and design choices made by the team.

# 2 Pretest Questions

List of Pretest questions:

1. How many years have you used a computer?
2. Please indicate your level of agreement to the follow statement:  
I am very interested in the testing of this application.
  1. Strongly agree
  2. Agree
  3. Neutral
  4. Disagree
  5. Strongly disagree

# 3 Test 1

1. **Test scenario name:** Preliminary Impression

2. **Test Goals for the scenario**

The goal of this test scenario is to observe the initial response of the user. This test will reveal first impressions the user has about the application and get overall feedback about the how intuitive and usable the layout is.

3. **Quantitative measurement list**

This test scenario will not have any quantitative measurements.

4. **Scenario description**

This will be read to the user:

*" The Natural History Museum of Los Angeles has a large set of crab specimens. They have used the help of a crowd sourced online transcription tool (Notes for Nature) to digitize a large number of handwritten crab specimen labels. Notes for nature provides the same specimen to 4 different users in order to account for mistakes. The final data set contains 4 catalogs of the same crab specimen. The scientists at the Natural History museum would like to aggregate these 4 transcription entries into one final data set. This is what the Crab Shack Kitchen application will be used for. The application allows the scientists to quickly select the correct version of the transcription from the 4 given choices. The primary focus of the Crab shack kitchen application is to provide*

*a faster method of cataloging specimens compared to manually typing the specimen names into the database software. Keeping this in mind the goal of the system design is to be clear, simple and efficient to use. The main focus is the cataloging process which includes selecting 1 of 4 buttons for each specimen property. For the first test you will perform 6 tasks that runs through the entire application. You will need to say out loud what you are feeling and thinking as you perform these tasks. Be completely honest with your answers and your thoughts. Do you have any questions?"*

5. **Task list** The user will perform the following tasks.

- (a) Login to the application
- (b) Import new CSV catalog (if implemented)
- (c) Catalog a specimen
- (d) Search for recently cataloged item
- (e) Edit recently cataloged item
- (f) Export the results (if implemented)

6. **Qualitative measurement list**

The screen and the user will be recorded (both video and audio) in order to record their thoughts. The screen will also be captured using hotjar analytics.

7. **Potential observations of user**

The user might say something like "I can't find the catalog button" or "I don't understand how to search for a specimen ". Which will reveal weaknesses in the layout of the application.

8. **Post Scenario interview or questionnaire questions**

- (a) What feature of the application frustrated you the most?
- (b) What feature of the application did you like the best?
- (c) Were all the functions/buttons easy to find? Please provide details about the functions/buttons you did AND did not like. At least one of each.
- (d) Did you intuitively understand what each function did? Please provide details about the functions/buttons you did AND did not understand. At least one of each.
- (e) What are your general thoughts about the cataloging process? Is it easy to use? What would you like to change specific to the cataloging process?
- (f) What one thing would you like to change the most in the application?
- (g) What part of the process do you think took the most time?
- (h) What part of the process do you think took the least time?
- (i) Is there a feature you would like to add OR remove from the application? Please provide details about the feature you want to add OR remove. At least one of each.
- (j) Please provide any additional feedback about the application.

9. **Test set up details**

Open the application in browser and navigate to main page. Start the web cam and the audio recording. Say name of the user and test being performed in the web cam.

## 4 Test 2

1. **Test scenario name:** Speed test - Web App

2. **Test Goals for the scenario**

The goal of this test is to get a reference of the user's average cataloging time per specimen.

3. **Quantitative measurement list**

A timer will be used to get the speed of each user's cataloging speed. Hotjar analytics will be used to record the speed and get feedback on the heat maps of the user. A video camera will also be recording the users hands and click interactions.

4. **Scenario description**

This will be read to the user:

*"For this test we want to measure how fast a user can catalog specimens. I will start the timer and say GO, which is when you will start cataloging specimens. You will need to catalog 5 specimens. Once you are done with the fifth specimen I will stop the timer. Answer as accurately and as fast as possible. You will have a maximum time limit of 5 minutes after which I will stop the timer by default. Do you have any questions? "*

5. **Task list** The user will perform the following tasks.

- (a) I will start the timer and say GO.
- (b) Catalog as many specimen logs as possible.
- (c) I will stop the timer after 5th specimen

6. **Qualitative measurement list**

The post test questionnaire will provide insight about what process took the longest during the test.

7. **Potential observations of user**

The user might say something like "Five specimens was too much to catalog, I kept making mistakes ".

8. **Post Scenario interview or questionnaire questions**

- (a) What feature of the application frustrated you the most in this process?
- (b) What feature of the application did you like the best in this process?
- (c) Were all the functions/buttons easy to find in this process? Please provide details about the functions/buttons you did AND did not like. At least one of each.
- (d) Did you intuitively understand what each function did in this process? Please provide details about the functions/buttons you did AND did not understand. At least one of each.
- (e) What are your general thoughts about the cataloging process after using it now? Is it easy to use? What would you like to change specific to the cataloging process?
- (f) What one thing would you like to change the most in the cataloging process?
- (g) What part of the cataloging process do you think took the most time?
- (h) What part of the cataloging process do you think took the least time?
- (i) What part of the cataloging process do you think you repeated the most? What shortcuts if any would you have liked for these tasks?
- (j) Is there a feature you would like to add OR remove from the cataloging process? Please provide details about the feature you want to add OR remove. At least one of each.
- (k) Did you find the notifications useful or were they annoying?

- (l) Was the image big enough? Did you have to zoom a lot?
- (m) Please provide any additional feedback about the application.

9. Test set up details

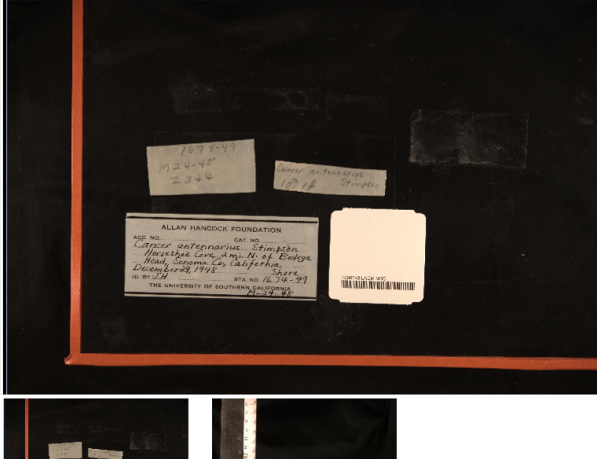
Open the website to the cataloging page. Start the audio/video recording. Say user name and test being performed in web cam.

10. Miscellaneous

Figure 1: Application Cataloging Page Layout

Crab Shack Kitchen
admin [log out](#)

### Process Specimen



**Accession Number**

**Catalog Number**

**Station Number**   
 1674-49

**Center Number**   
 M-24-48

**Event Date**   
 12/29/1948

**Geographic Locality**   
 Horseshoe Cove, 2 mi N of Bodega Head, Sonoma Co., California   
  Horseshoe Cove, 2 mi. N. of Bodega Head, Sonoma Co., California

**Habitat**   
 shore

## 5 Test 3

1. **Test scenario name:** Speed test - Excel Reference layout

2. **Test Goals for the scenario**

The goal of this test is to get a reference of the user's average cataloging time per specimen in the excel layout.

3. **Quantitative measurement list**

A timer will be used to get the speed of each user's cataloging speed.

4. **Scenario description**

This will be read to the user:

*"For this next test we want to measure how fast a user can catalog specimens in an excel layout. You will be given a trial run to catalog one specimen. You will need to highlight the correct specimen field in the excel sheet. Once you are familiar with the layout, I will start the timer and say GO, which is when you will start cataloging specimens. You will need to catalog 5 specimens. Once you are done with the fifth specimen I will stop the timer. Answer as accurately and as fast as possible. You will have a maximum time limit of 5 minutes after which I will stop the timer by default. Do you have any questions? "*

5. **Task list** The user will perform the following tasks.

- (a) Catalog one test specimen to get familiar with new layout
- (b) I will start the timer and say GO.
- (c) Catalog as many specimen logs as possible.
- (d) I will stop the timer after 5th specimen

6. **Qualitative measurement list**

The post test questionnaire will provide insight about what process took the longest during the test.

7. **Potential observations of user**

The user might say something like "This layout is horrible, the other one was easier to use ".

8. **Post Scenario interview or questionnaire questions**

- (a) What features of the new layout frustrated you the most?
- (b) What feature of the new layout did you like the best ?
- (c) Was the new layout better, the same, or worse than the original layout? Why?
- (d) What feature did this layout have that should be included in the original layout?
- (e) What one thing would you like to change the most in the cataloging process in the new layout?
- (f) What part of the cataloging process do you think took the most time in the new layout?
- (g) What part of the cataloging process do you think took the least time in the new layout?
- (h) What part of the cataloging process do you think you repeated the most in the new layout?
- (i) Is there a feature you would like to add OR remove from the cataloging process in the new layout? Please provide details about the feature you want to add OR remove. At least one of each.
- (j) Please provide any additional feedback about the new layout.

9. **Test set up details**

Open the website to the cataloging page. Start the audio/video recording. Say user name and test being performed in web cam.

## 10. Miscellaneous

Figure 2: Excel Cataloging Page Layout

Acc NO	Catalog Number	Scientific Name	Scientific Name (2nd)	Locality	Longitude	Habitat	Latitude	Event Date	Other Text	STA. NO	Center Number	ID BY	ID BY (2nd)	Collectors
		Cancer anthonyi Cancer anthonyi		Cabrillo Beach, Los Angeles Co., California Cabrillo Beach, Los Angeles, California				1/18/1950	Rathbun			JH		R.J. Menzies

## 6 Test 4

1. **Test scenario name:** Speed test - Alternate Web Reference layout

2. **Test Goals for the scenario**

The goal of this test is to get a reference of the user's average cataloging time per specimen in the alternative web layout.

3. **Quantitative measurement list**

A timer will be used to get the speed of each user's cataloging speed.

4. **Scenario description**

This will be read to the user:

*"For this test we want to measure how fast a user can catalog specimens in an alternative layout. You will be given a trial run to catalog one specimen. Once you are familiar with the layout, I will start the timer and say GO, which is when you will start cataloging specimens. You will need to catalog 5 specimens. Once you are done with the fifth specimen I will stop the timer. Answer as accurately and as fast as possible. You will have a maximum time limit of 5 minutes after which I will stop the timer by default. Do you have any questions? "*

5. **Task list** The user will perform the following tasks.

- Catalog one test specimen to get familiar with new layout
- I will start the timer and say GO.
- Catalog as many specimen logs as possible.



(d) I will stop the timer after 5th specimen

#### 6. Qualitative measurement list

The post test questionnaire will provide insight about what process took the longest during the test.

#### 7. Potential observations of user

The user might say something like "This was better than the excel but I had to scroll a lot".

#### 8. Post Scenario interview or questionnaire questions

- What features of the new layout frustrated you the most?
- What feature of the new layout did you like the best ?
- Was the new layout better, the same, or worse than the original layout? Why?
- What feature did this layout have that should be included in the original layout?
- What one thing would you like to change the most in the cataloging process in the new layout?
- What part of the cataloging process do you think took the most time in the new layout?
- What part of the cataloging process do you think took the least time in the new layout?
- What part of the cataloging process do you think you repeated the most in the new layout?
- Is there a feature you would like to add OR remove from the cataloging process in the new layout? Please provide details about the feature you want to add OR remove. At least one of each.
- Did you prefer the vertical display (in this layout) OR the horizontal display of fields in the original layout?
- Please provide any additional feedback about the new layout.

#### 9. Test set up details

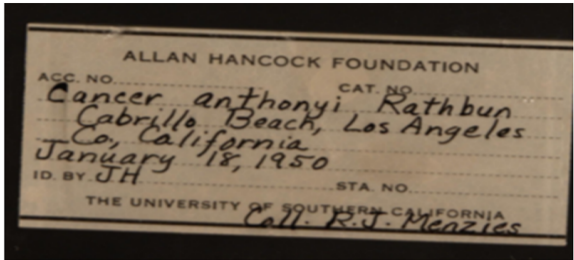
Open the website to alternative cataloging page. Start the audio/video recording. Say user name and test being performed in web cam.

#### 10. Miscellaneous

Figure 3: Alternative Cataloging Page Layout

Crab Shack Kitchen

<b>Scientific Name</b> Cancer anthonyi Rathbun Cancer anthonyi	<b>Acc No</b> 
<b>Locality</b> Cabrillo Beach, Los Angeles Co. California Cabrillo Beach, Los Angeles, California	
<b>Event Date</b> 1/18/1950	<b>Habitat</b> 
<b>ID BY</b> JH	<b>Depth</b> 



## 7 Post-test questions

List of post-test questions:

1. Please indicate your level of agreement to the follow statement:  
Overall, this application was easy to perform the task.

1. Strongly agree
2. Agree
3. Neutral
4. Disagree
5. Strongly disagree

2. Please indicate your level of agreement to the follow statement:  
I enjoy using this application.

1. Very much
2. A little bit
3. Neutral
4. Not very much
5. Not at all

3. Please indicate your level of agreement to the follow statement:  
I would use this application again.

1. Strongly agree
2. Agree
3. Neutral
4. Disagree
5. Strongly disagree

## 8 Results

### 8.1 Common Survey Results

The common survey indicated the general interest of the users and their level of competence using a computer. The following graphs show the answers of the pre and post test questions.

### 8.2 Pretest Questions

Figure 4: Number of years using a computer

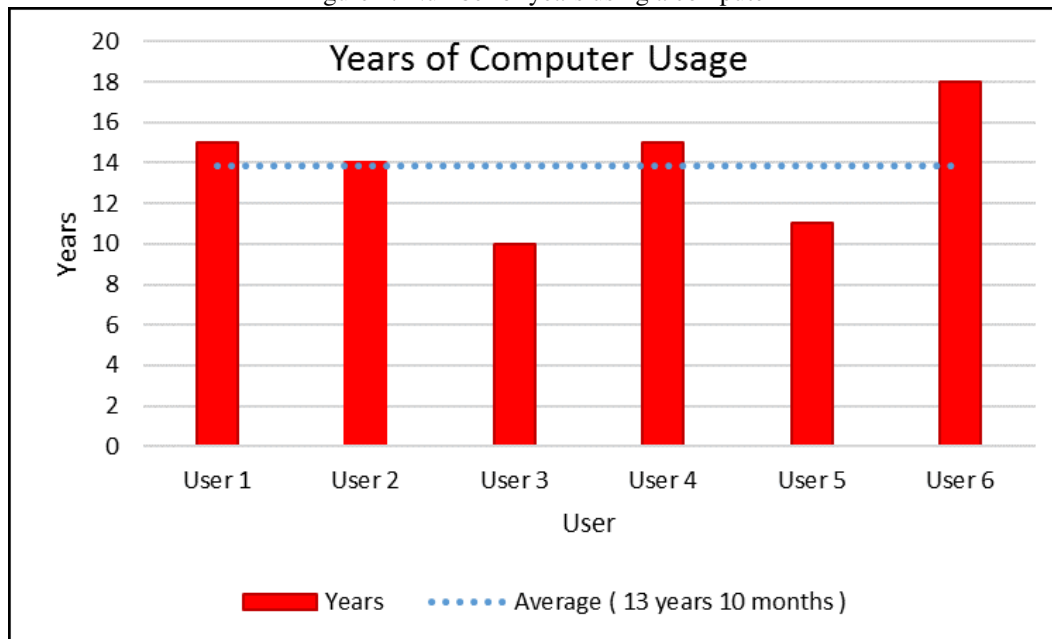
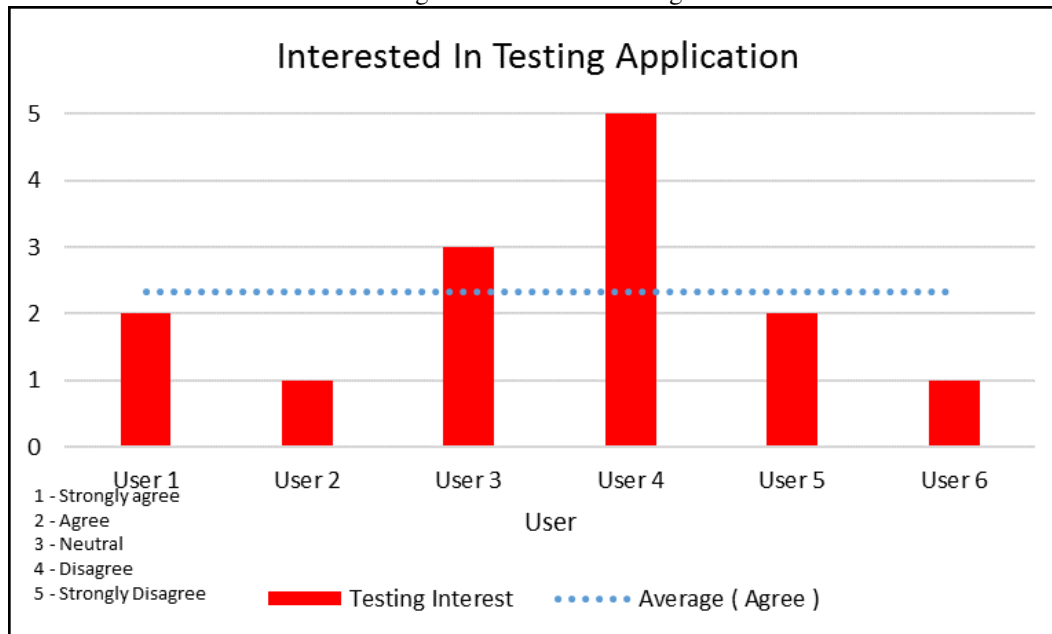


Figure 5: Interest in testing



### 8.3 Post test Questions

The post test provide general overall feedback of the users testing experience. In general, most users gave neutral to positive feedback after using the application.

Figure 6: It was easy to perform tasks in this application

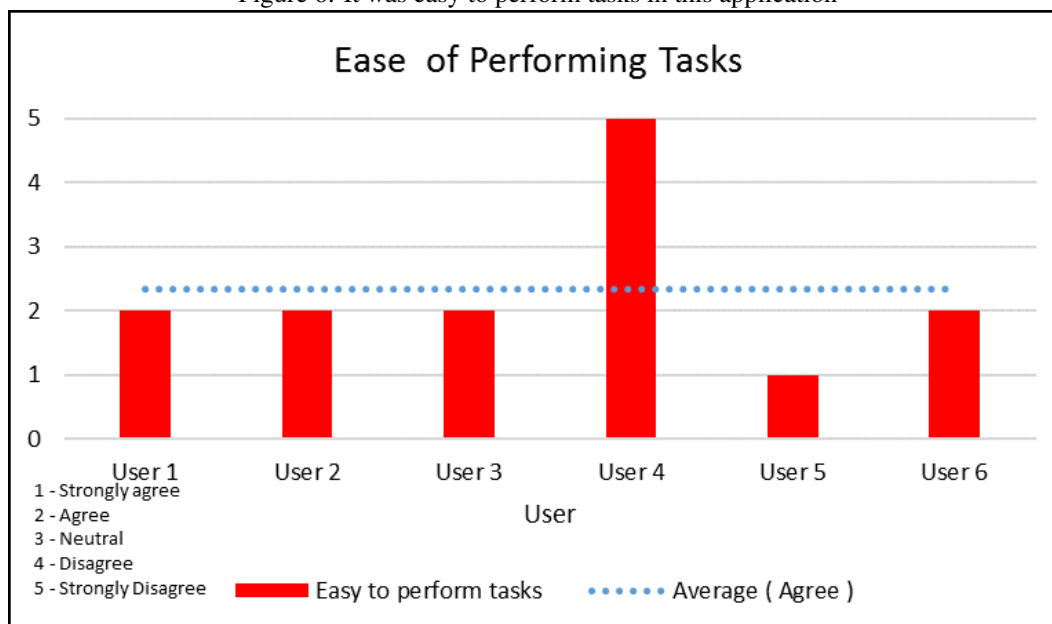


Figure 7: I enjoyed using this application

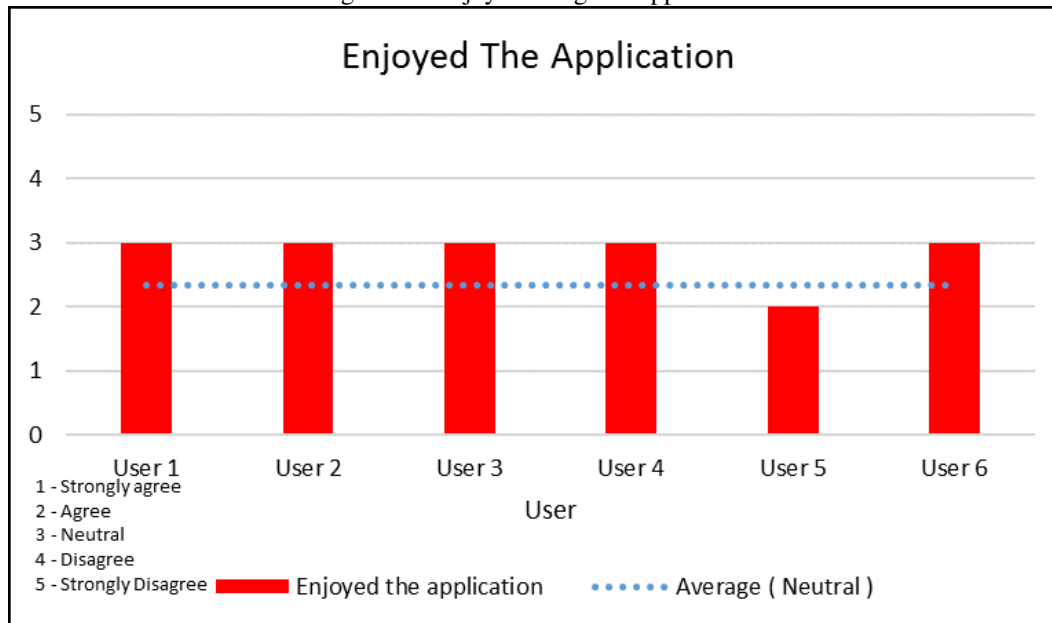
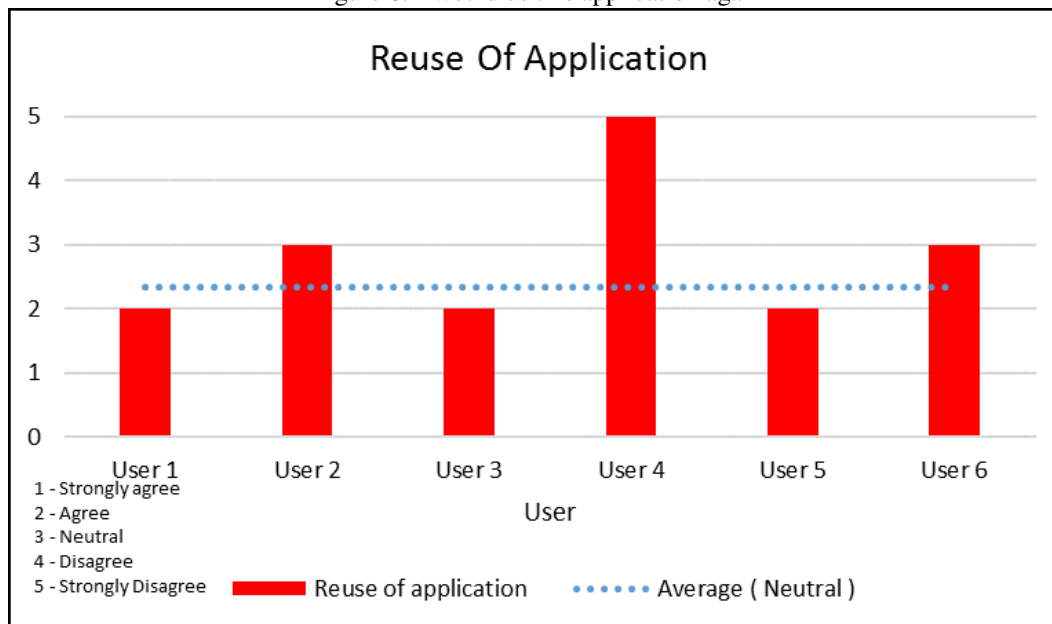


Figure 8: I would us this application again



## 8.4 General Feedback Results

The surveys provided a good insight into how the application might be used on a daily basis. It brought to light some pain points that can occur during continuous usage.

1. Most users could not figure out which labels belonged to which text field. Additionally, some field labels wrapped around and overflowed into its closest neighbor (See Figure 13 for details) adding to the confusion.

2. Many of the users mentioned that there were a lot of empty fields to look through while searching for a pre-filled field. The empty fields made it hard for them to concentrate on their current field of interest. Moving their head to look at the image could distract them enough to lose their field among all the other fields.
3. An additional issue with the fields was that the user found it difficult to understand which field they had completed filling out and which fields were pre-filled.
4. A common question most users asked during the tests was "Where is the back button?". This was mainly because the home/back button was simple a logo and did not explicitly state that its a button to the home page.
5. Most users also mentioned that it was easier to compare vertical fields as opposed to horizontal fields.
6. Some users also had issues distinguishing between the label buttons and the Save button because it is the same shape and size.
7. One users mentioned that he would like an option to skip a specimen.
8. A few users also said that some level of pre-zooming on the image would be nice so as to reduce the number of mouse wheel scrolls required. Also some users didn't realize that scrolling activates the image zoom.

## 8.5 Speed Test Results

The speed tests revealed that the users were generally faster using the alternative web application. This assumption is not completely reliable due to the number of variables involved during testing. 3 out of 6 participants cataloged more specimens using the web application. However, the average time difference between each type is negligible. The results vary drastically among users. The tests were only performed on 6 users. A larger subject pool might have revealed more about actual speed differences between layouts.

The tests did reveal that the users preferred a vertical layout. Additionally, they also liked grouping/differentiation of different fields in the excel sheet.

In figure 9 and 10 its easy to see how much of a difference a vertical or horizontal layout makes. The vertical layout makes it easier to compare the two text entries in the field. The only difference between the two entries is that second entry has an extra full stop. This difference is harder to spot in the horizontal layout.

Figure 11 shows the different times between each speed test performed by the user. The idea behind the speed tests was to have alternative layouts to compare against and to pick out the best portions of the other layouts.

Figure 9: Horizontal Layout

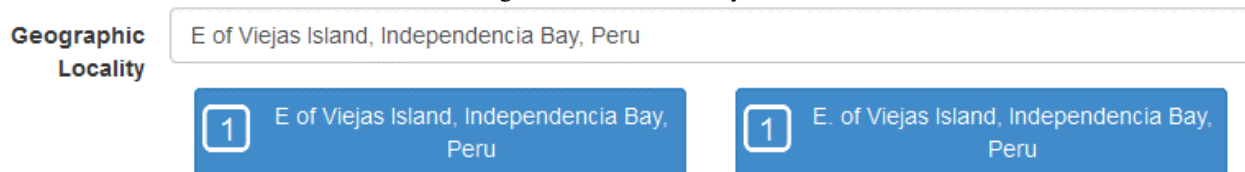


Figure 10: Vertical Layout

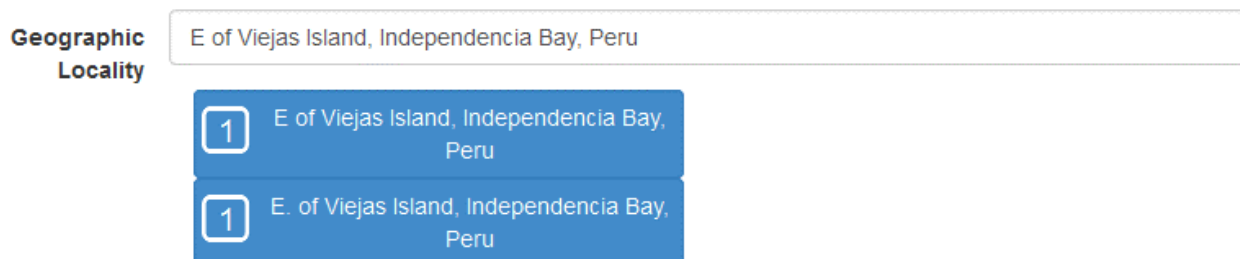


Figure 11: Number Of Specimens Cataloged in 5 Minutes

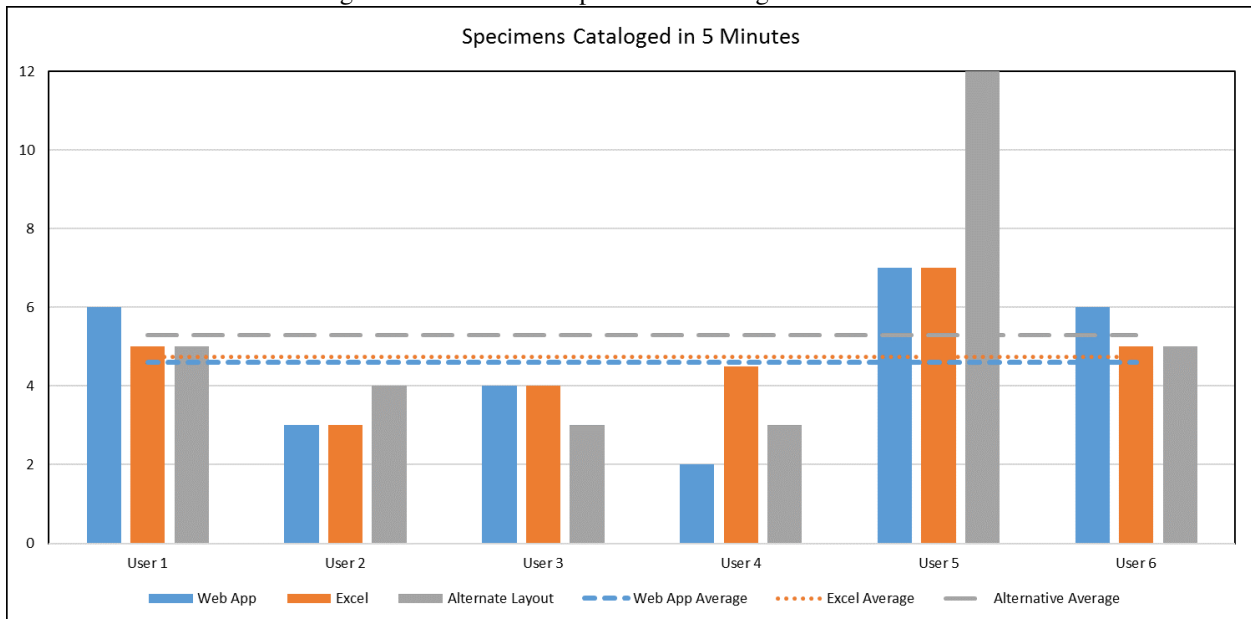
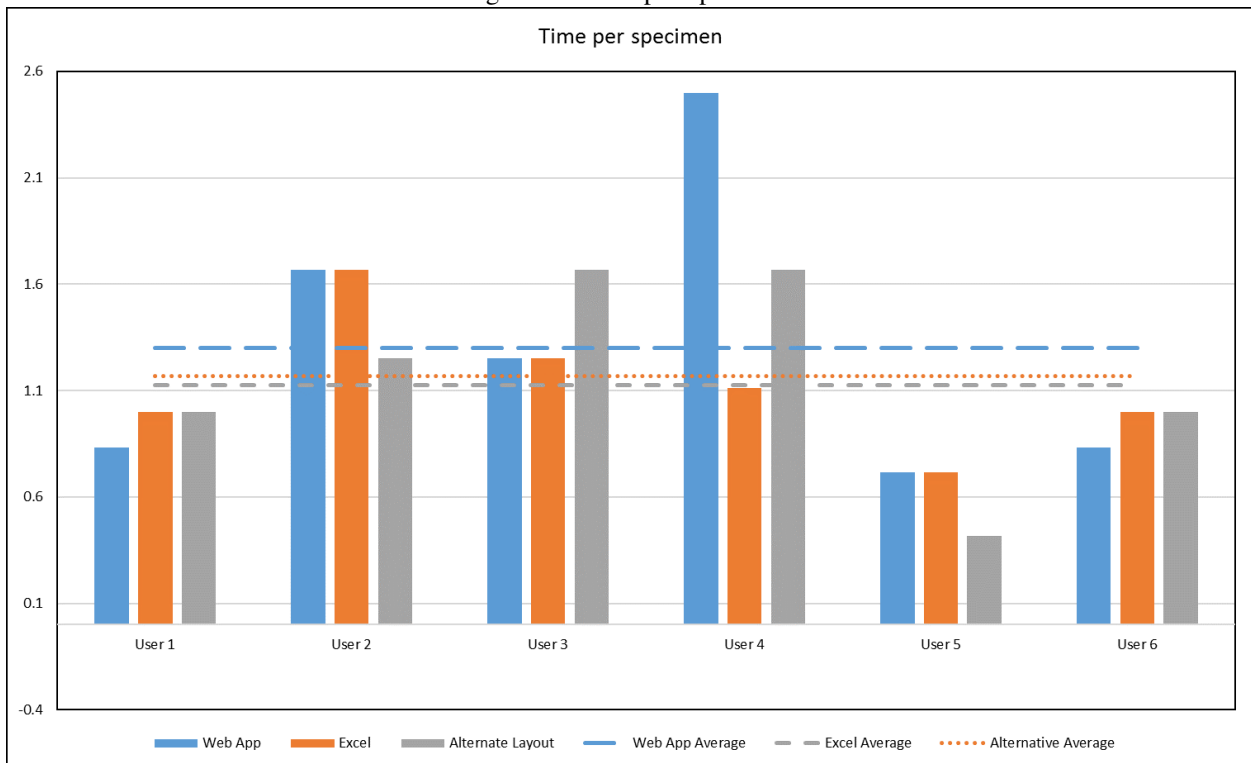


Figure 12: Time per Specimen



## 9 Conclusion

Although the current layout performs pretty well. The tests revealed a few drawbacks of the system. Figure 13 shows the proposed design changes based on feedback from the usability tests.


1. Separate the fields into two sections. One with pre-filled fields and one with the remaining empty fields. This will help with the 'too many empty fields in the middle' problem and the issue with not knowing which fields have been pre-filled.
2. Since the Save button can get mixed up with the label buttons, it should be renamed to 'Save & Continue'. The button should also be moved from its current center position to the left of the fields. The reason for this is because the user's mouse is generally to the left of the fields, having the button in the center causes the user to unnecessarily move the mouse to the center position. See figure 13 for reference.
3. The text 'Scroll to Zoom' should be added to clarify how the zoom functionality works.
4. Line separators should be added between each field to clearly show which buttons belong to which field. This also helps speed up the ability to find fields. Additionally, to have a cleaner layout text field labels should be prevented from wrapping around.
5. The layout of the buttons should be changed to a dynamic drop down list that activates when you click the field. The vertical comparison makes it easier to find the differences in data. The field is pre-filled by default if data exists, but has an indicator indicating that it has more pre-filled data.
6. A home button should be added next to the logo which clearly indicates how to go back to the home page.

Figure 13: Proposed Changes

Crab Shack Kitchen [Home](#) admin [log out](#)

### Process Specimen

Scroll to zoom



**Don't let fields wrap**

Collectors	J. Babel
Scientific Name	cancer gracil
Identifier Name	cancer gracilis
	Dana
Event Date	8/22/1956
Geographic Locality	Belmont Shore, California
Habitat	surf seine
Other Text	surf seine
Accession Number	
Catalog Number	
Station Number	
Center Number	
Latitude	
Longitude	
Depth	
Depth Units	
Scientific Name 2nd	
Identifier Name 2nd	

[Save & Continue](#)



## Appendix A Undergraduate Attendance

Figure A14: Undergraduate group member attendance

	Monday 4/11	Sachin		Friday 4/15	Sachin	
	4:00 - 5:00	5:00 - 6:00	6:00 - 7:00	4:00 - 5:00	5:00 - 6:00	6:00 - 7:00
Undergrad 1	Chloe	Chloe	Chloe	Jiaying	Jiaying	Jiaying
Undergrad 2	Massimo	Colton	Colton	Keagan	Keagan	Keagan

## Appendix B Bug Report

### Bug Report Form

Bug number	Bug name	Bug uniqueness	Bug location	Bug description
1	Search results bug	Across all participants	Home page	Searching for a specimen and clicking on the resulting link results in being redirected to the wrong specimen.
2	Submit issue	One participant	Catalog page	Pressing enter button while typing in a text field submits the entire specimen.
3	Concurrency issue	One participant	Catalog Page	Cataloging a specimen while another specimen is being cataloged results in both users getting the same specimen.

## Appendix C Raw Data

Table C1: Number Of Specimens Cataloged in 5 minutes

User	Web App	Excel	Alternative Layout
User 1	6	5	5
User 2	3	3	4
User 3	4	4	3
User 4	2	4.5	3
User 5	7	7	12
User 6	6	5	5
Average	4.6	4.75	5.3

Table C2: Specimens Per Minute

User	Web App	Excel	Alternative Layout
User 1	0.833	1	1
User 2	1.667	1.667	1.25
User 3	1.25	1.25	1.667
User 4	2.5	1.11	1.667
User 5	0.714286	0.714286	0.416667
User 6	0.833	1	1
Average	1.299603	1.123677	1.166667

Table C3: Number of years using a computer

<b>User</b>	<b>Years</b>
User 1	15
User 2	14
User 3	10
User 4	15
User 5	11
User 6	18
Average	13 years 10 months

Table C4: Testing Interest

<b>User</b>	<b>Interest</b>
User 1	2
User 2	1
User 3	3
User 4	5
User 5	2
User 6	1

Table C5: Ease of Tasks

<b>User</b>	<b>Ease</b>
User 1	2
User 2	2
User 3	2
User 4	5
User 5	1
User 6	2

Table C6: Enjoyed Using the App

<b>User</b>	<b>Enjoyment</b>
User 1	3
User 2	3
User 3	3
User 4	3
User 5	2
User 6	3

Table C7: Reuse of App

<b>User</b>	<b>Reuse</b>
User 1	2
User 2	3
User 3	2
User 4	5
User 5	2
User 6	3