

QuickRental

# Heuristic Analysis

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## Problem/Prototype

QuickRental aims to ease users stress when finding apartments near the University of the West Indies(U.W.I) through providing an interface through a mobile application where users can easily browse featured, as well as filtered apartments based on one's chosen criteria. Users will be able to see photos, enter a virtual tour, go through a map, and see reviews as well as leave reviews for apartments.

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# Heuristic Evaluation of QuickRental

## *Violations Found (Ranked by Severity)*

### *Severity Ratings*

*0 - don't agree that this is a usability problem*

*1 - cosmetic problem*

*2 - minor usability problem*

*3 - major usability problem; important to fix*

*4 - usability catastrophe; imperative to fix*

## **1. Severe (Rating: 4)**

- 1.1.** Once the user clicks to enter the virtual tour, it becomes difficult to exit the tour and be able to scroll. (especially in iPhones that lack a 'back' button)

**Violated Heuristics:** *User Freedom and Control, Flexibility and Efficiency of Use, Consistency and Standards*

**Problem Location:** Virtual Tour Screen

**Found by:** *Michael Ali , Kady Seecharan and Gabriela Sewdhan*

**Fix:** This problem is due to the virtual tour iframe we embedded. In the development of the app, we will be using the same program to get the virtual tour, but without the limitations of Ionic Creator, a back button will be added easily.

**Severity:** 4

- 1.2.** The 'Home' tab button does not work all the time. When I visited some pages, and clicked the Home tab, it took me to the previous page rather than the actual Home page. This is an Ionic Creator Issue, and would necessitate switching to a different App Framework.

**Violated Heuristics:** *User Freedom and Control, Consistency and Standards*

**Problem Location:** App-wide

**Found by:** Gabriela Sewdhan

**Severity:** 4

**Fix:** Change from Ionic Creator to a different framework that has less limitation.

- 1.3.** When I decided to set my price range using the slide button, there was no message indicating the price that was chosen.

**Violated Heuristics:** *Flexibility and Efficiency of Use, Consistency and Standards*

**Problem Location:** Search (Price Range) - Filter Screen

**Found by:** Kady Seecharan

**Severity:** 4

**Fix:** On the slider, show the amount being chosen. **[Fixed]**

- 1.4.** When I decided to set my walking distance using the slide button, there was no message indicating the distance that was chosen.

**Violated Heuristic:** *Flexibility and Efficiency of Use, Consistency and Standards*

**Problem Location:** Search (Walking Distance Range) - Filter Screen

**Found by:** Kady Seecharan, Ishmael Mohammed

**Severity:** 4

**Fix:** On the slider, show the amount being chosen. **[Fixed]**

- 1.5.** I clicked the heart symbol for several apartment and it did not show up in the Bookmark screen.

**Violated Heuristic:** *Consistency and Standards*

**Problem Location:** Bookmark

**Found by:** Kady Seecharan

**Severity:** 4

**Fix:** Implement backend that allows for apartments “Favorited” to be added to the Bookmarks page.

## 2. **High (Rating: 3)**

### 2.1. I was unable to search apartments by street

**Violated Heuristic:** *User Control and Freedom*

**Problem Location:** Search button and bar on Home Screen

**Found by:** *Ishmael Mohammed*

**Fix:** Modify Search field to allow keyword search by criteria.

**Severity:** 3

### 2.2. Tapping images didn’t open them on a full screen as I expected it would.

**Violated Heuristic:** *Consistency and Standards*

**Problem Location:** Browse

**Found by:** *Ishmael Mohammed*

**Severity:** 3

**Fix:** Increase useability by making images zoom on tap/click. **[Fixed]**

### 2.3. When I clicked “Upload”, the button was unresponsive.

**Violated Heuristic:** *Consistency and Standards, Visibility of System Status*

**Problem Location:** Create an Account Screen

**Found by:** *Kady Seecharan*

**Severity:** 3

**Fix:** Allow user to upload an image as their avatar. **[Fixed]**

- 2.4.** Before the app loads, there should be a loading progress bar to ensure the user knows that the app is loading. This would be helpful for users who have slow internet.

**Violated Heuristic:** *Consistency and Standards, Visibility of System Status*

**Problem Location:** Welcome Screen

**Found by:** Gabriela Sewdhan

**Severity:** 3

**Fix:** Include progress wheel to provide feedback to user that an action has been submitted to our server, and is awaiting processing.

- 2.5.** The app logs in when an email and password is entered. However, I never created an account with these credentials therefore an error is supposed to pop up.

**Violated Heuristic:** *Error Prevention*

**Problem Location:** Login Screen

**Found by:** All

**Severity:** 3

**Fix:** Implement backend to properly authenticate users, and return appropriate error messages when invalid credentials are entered.

- 2.6.** Since the app will be used by older, possibly less smartphone-familiar, individuals, the app should provide tooltips or a 'Get Started' to better guide new, inexperienced users in how to navigate the app.

**Violated Heuristic:** *Documentation and Help*

**Problem Location:** App-Wide

**Found by:** Michael Ali, Gabriela Sewdhan

**Severity:** 3

**Fix:** Include tutorials page for new users, on Sign Up. **[Fixed]**

- 2.7.** Save, Reset, Sign Up and Login buttons does not show a status or emits a confirmation.

**Violated Heuristic:** *Visibility of System Status*

**Problem Location:** Save, Reset, Sign Up and Login Buttons

**Found by:** Gabriela Sewdhan, Kady Seecharan

**Severity:** 3

**Fix:** Implement backend functionality, that will provide feedback to the user on input entry, if their authentication or search was successful or yielded results, respectively.

### **3. Medium (Rating: 2)**

- 3.1.** There should be a search button at the top of the page as well, so that the user does not have to scroll all the way to the bottom of the screen to search (there is a search tab however) **(Can fix!)**

**Violated Heuristic:** *Flexibility and Efficiency of Use*

**Problem Location:** Home Screen

**Found by:** Gabriela Sewdhan

**Fix:** Include search button at top of page, that may scroll with the user to increase convenience.

**Severity:** 2

- 3.2.** There should be an option to have a list view in case the user prefers to just see the apartment with one photo (sliders were used so that users can see the photos on time). However, if a user wants to browse through many apartments, it would take time.

**Violated Heuristic:** *Flexibility and Efficiency of Use*

**Problem Location:** Results and Home Page

**Found by:** Gabriela Sewdhan

**Severity:** 2

**Fix:** Include button to switch between view types to allow for faster, more streamlined browsing

- 3.3.** Upload Avatar button does not appear as a button. It should stand out more as it looks like an image that is not clickable. **(CAN FIX)**

**Violated Heuristic:** *Consistency and Standards, Visibility of System Status*

**Problem Location:** Sign Up Screen

**Found by:** Gabriela Sewdhan

**Severity:** 2

**Fix:** Turn the 'Upload Avatar' button into an actual button. Right now a photo is being used to mask the html css from 'input = file'. When another framework is used that is not just for prototypes, the buttons will be easily made.

- 3.4.** The Phone number entry box allows the entry of letters

**Violated Heuristic:** *Error Prevention*

**Problem Location:** Sign Up Screen

**Found by:** Ishmael Mohammed

**Severity:** 2

**Fix:** Limit type of data allowed to be entered in forms. **[Fixed]**

- 3.5.** Search should provide suggestions based on what the user is typing.

**Violated Heuristic:** *Recognition vs. Recall, Flexibility and Efficiency of Use*

**Problem Location:** Search Bar

**Found by:** Michael Ali

**Severity:** 2

**Fix:** Leverage search engine indexing for apartment listings to implement this.

#### 4. Low (Rating: 0 - 1)

- 4.1.** When I clicked the heart symbol on the post, it turned black. However, when I started to scroll down on the apartment details, the heart turned back to white.

**Violated Heuristic:** *User Control and Freedom*

**Problem Location:** Home, Results, Details and Review Screens

**Found by:** Kady Seecharan

**Fix:** Properly highlight the interactive buttons and maintain their states.

**[Fixed]**

**Severity:** 1

- 4.2.** Minor consistency problem in the design of buttons on the Post Review page. Previous buttons were round, while these exhibit a slight rounding and rectangular shape.

**Violated Heuristic:** *Consistency and Standards*

**Problem Location:** Post Review Screen

**Found by:** Michael Ali

**Severity:** 1

**Fix:** Use more consistent button styling. **[Fixed]**

- 4.3.** The 'more details' option did not work for one apartment.

**Violated Heuristic:** *Consistency and Standards*

**Problem Location:** Search - Home and Results Screen

**Found by:** Ishmael Mohammed

**Severity:** 1

**Fix:** Properly link all Details pages to relevant apartments. **[Fixed]**



- 4.4.** When I clicked “Forgot login details? Get Help”, the button did not load another screen. I clicked it several times after and it was still unresponsive.

**Violated Heuristic:** *Consistency and Standards, Visibility of System Status*

**Problem Location:** Login Screen

**Found by:** All

**Severity:** 1

**Fix:** Link ‘Forgot Login Details’ button to page that instructs user on how to reset password.

### Summary of Violations

Category	# Viol. (Sev. 0)	# Viol. (Sev. 1)	# Viol. (Sev. 2)	# Viol. (Sev. 3)	# Viol. (Sev. 4)	# Viol. (Total)
User Control and Freedom	0	1	0	1	2	4
Flexibility and Efficiency of Use	0	0	3	1	3	7
Consistency and Standards	0	3	1	3	5	12
Visibility of System Status	0	1	1	3	0	5
Error Prevention	0	0	1	1	0	2
Documentation and Help	0	0	0	1	0	1
Recognition not Recall	0	0	1	0	0	1
<b>Total Violations by Severity</b>	<b>0</b>	<b>5</b>	<b>7</b>	<b>11</b>	<b>11</b>	<b>32</b>

### Summary of Violations after initial fixes

Category	# Viol. (Sev. 0)	# Viol. (Sev. 1)	# Viol. (Sev. 2)	# Viol. (Sev. 3)	# Viol. (Sev. 4)	# Viol. (Total)
User Control and Freedom	0	0	0	1	2	3
Flexibility and Efficiency of Use	0	0	3	0	1	4
Consistency and Standards	0	1	1	1	3	6
Visibility of System Status	0	1	1	2	0	4
Error Prevention	0	0	0	1	0	1
Recognition not Recall	0	0	1	0	0	1
<b>Total Violations by Severity</b>	<b>0</b>	<b>2</b>	<b>6</b>	<b>6</b>	<b>7</b>	<b>19</b>

## ***Summary of Recommendations***

The majority of the violations found were with Consistency and Standards and then Flexibility and Efficiency of Use. Many of these were functional are not as relevant due to the prototyping tool we used, which was Ionic Creator. Ionic Creator allowed us to add no functionality.

The problems with consistency of the buttons, the heart icon not saving its status, no documentation for users to know how to use the app, the phone number section on the Sign Up screen allowing letters, the 'Upload Avatar' Button not being functional, the images not being enlarged when clicked on, and the status and amount not being shown on the slider for walking distance and the price range, were all fixed. The functionality to allow an avatar to be uploaded was fixed with a work around in Ionic Creator using HTML. After fixing these problems, the violation 'Consistency and Standards' decreased from '12' to '6'! The overall violations broken decreased from '32' to '19'.

The other problems were mainly functional. To fix them, we recommended building the mobile app on React Native instead to obtain a fully functional, user-friendly, gorgeous application. This would fix all of the functional violations found, as well as aid in consistency, efficiency of use, user control and freedom, and especially error prevention.

The search button is extremely important for our app, as it gives the user freedom and full control to search when ever they want, with no extra clicking. Thus, making the search button functional where a user can search by a street name, or get suggestions based on what they are searching, would make our app better.

Another important aspect for our app is connecting to a database, where we can save all apartment information, and have the filter and results pages functional and display accurate results pertaining to the users' choices on the filter page. We would also save information about the user, their settings, and have the bookmarks page functional.

We are very excited to carry over this app to React Native and make our system fully functional.

# **Appendix**

## **Heuristics (Nielsen 1995)**

### **Visibility of system status**

The system should always keep users informed about what is going on, through appropriate feedback within reasonable time.

### **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.

### **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.

### **Consistency and standards**

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

### **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.

### **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.

### **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.

### **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.

### **Severity Ratings**

***0 - don't agree that this is a usability problem***

***1 - cosmetic problem***

***2 - minor usability problem***

***3 - major usability problem; important to fix***

***4 - usability catastrophe; imperative to fix***

## ***References***

Nielsen, Jakob. "10 Heuristics for User Interface Design: Article by Jakob Nielsen." Nielsen Norman Group. January 01, 1995. Accessed December 05, 2018. <https://www.nngroup.com/articles/ten-usability-heuristics/>.