1. Executive Summary

RMIT Library is a one stop solution for multiple academic problems faced by the students of RMIT on a daily basis. We are conducting a usability test to understand the usability problems of the website www.rmit.edu.au/library and recommend a few solutions that will help the RMIT Library website to communicate better with the users and help the students make the best use of the tools present in the website.

We have conducted a Remote Usability Test on the RMIT Library website. We have created a set of screener questions to collect information of the participants and identify our target users based on their age groups, level of education, field of education, how often the use the website and what kind of device they use to access the website and how much time they usually spend on the website. Three tasks were created for the test and each task was followed by a post task

Questionnaire. Following the test sessions, we analyzed the user feedbacks and came up with the below five recommendation :

- I) Design should be consistent irrespective of the Device(Mobile Phone/ Laptop)
- 2) Layout should be updated, all the important filters should be at the top left corner of the webpage.
- 3) New users should be treated differently. They should either be redirected to the Quick Book page or they should be given a tutorial of the page.
- 4) The cancellation Process should be smoother and more convenient for the user to understand.
- 5) A lot of space is being wasted by listing all the levels vertically, instead a drop down will save space and make it more convenient for the users to select the level while booking a study room.

Implementing these solutions will increase the usability of the website and solve the low traffic problem of RMIT University Library website to a great extent.

2. Introduction

RMIT(Royal Melbourne Institute of Technology) is an educational institute based in Australia. Being one of the leading Educational Institutions of the country wants to make sure that the students are making the best use of the resources provided to them. The RMIT Library provides a wide range of services to students and staff, including the ability to reserve computers, reserve study areas, hold onto books, and refer to or cite them in research.

The website is jam-packed with incredible features, and there are a tonne of books available both physically and online. Recently it is noticed that the traffic on the RMIT Library website has reduces considerably. We are conducting a test to evaluate the website's usability due to the declining traffic.

In order to allow the participants to speak freely while completing the activity, we have requested the user to Think Aloud for administering the test. The participant's screen was shown during the test, which was carried out remotely, and the session was videotaped with their permission. Our group assembled and evaluated the findings and recommendations.

For this study, a team of 4 students from RMIT University have conducted a Remote Usability Test to identify the issues in the RMIT Library Website. Our team compiled and analyzed the results and came up with five recommendations based on our findings. In the following pages we lay out our Methodology for the test, present our key findings and share our recommendation to make RMIT website better and attract more students to use it.

3. Heuristic analysis

Heuristic analysis is a procedure where qualified experts apply a rule of thumb to evaluate the usability of the user interface and produce insights that might aid the design team in improving the usability of the product as it is being developed.

"By their very nature, heuristic shortcuts will produce biases." — Daniel Kahneman, Nobel Prize-winning economist (Interaction Design Foundation).

★ The scores are marked out of 5 based 1 being the leat and 5 being the highest score.

3.1 Task 1: Place a hold on a book using RMIT Library website

H1. Visibility of system status | Score - 4

The website provides the right feedback and informs the user of how many results and the location it is available in, are pertinent to their search. There is no need for excessive feedback because this website is search-based. In case there aren't many books remaining, it will prefer related publications so it keeps the user informed about the books' availability. Users are warned beforehand that they won't be able to access the link for few records and can eventually opt for different records because for a small number of books the export links are causing errors, which are also clearly highlighted.



Figure 3.1.1. Visibility of system status



Figure 3.1.2. Suggestion based on user search

H2. Match between system and the real world | Score - 5

The website uses straightforward language to present users with the results, there are no complex terms that users might find challenging to comprehend. Additionally, it lists the number

of physical copies and preferred online copies that the majority of users could find beneficial in the library. If there is one copy left and somebody books it then the other users can't book it.



Figure 3.1.3. Availability of book in particular location.

H3. User control and freedom | Score - 5

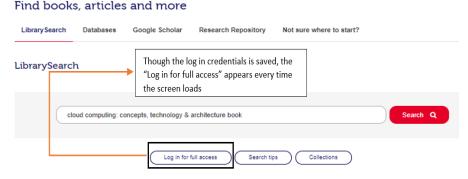
The system's ability to let users withdraw and reschedule requests demonstrates the website's



Figure 3.1.4. Offering user controls

H4. Consistency and standards | Score - 3

The login option misleads the user because it shows each time the website loads even if the search bar makes it obvious that the user should use it to look for books in the library. There is



clear distinction between "Log in for full access" and without login even though the system has automatically saved the login information and is still displaying the "Log in for full access" button.

in

Figure 3.1.5. Indication button, cause

confusion

Whereas the layout of the page is consistent in all the pages related to the Library, which does not confuse the user.

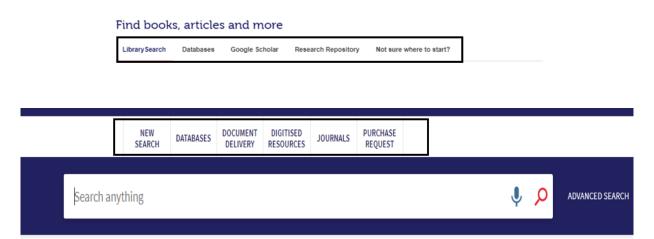


Figure 3.1.6 & 3.1.7. Indication of layout consistency

H5. Error prevention | Score - 5

The fact that the system requests confirmation before cancelling a book and waits a while to do



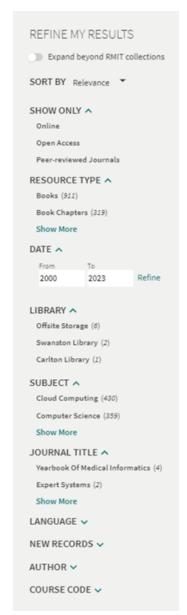
Figure 3.1.8. Allowing user to re-confirm the cancellation.



H6. Recognition rather than recall | Score - 5

The system's recommendations for users suggest that they don't need to particularly remember any functionalities to make a booking; instead, the website prefers them. The graphics and design are simple to understand, and it also keeps track of the history of bookings.

Figure 3.1.9. Suggestions offered by the websites.



H7. Flexibility and efficiency of use | Score - 5

The system's rapid customization of the user's search is an extremely convenient feature. The website provides a variety of shortcuts and filters that can speed up user outcomes, improve search criteria, and cut down on time spent on the site, all of which can lower system traffic. The website also provides the option of extracting citations and personalising them in accordance with user preferences, so the user need not bother about format.

H8. Aesthetic and minimalist design | Score – 4

The system's architecture is simple, and there are no ambiguous phrases. Except for a few recurring buttons and options that could mislead users, the website is rather simple.

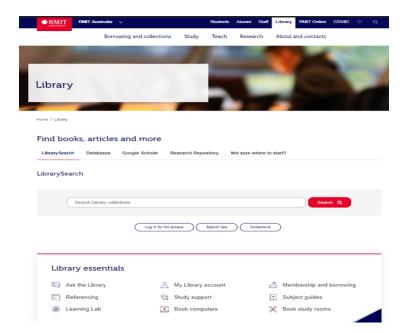


Figure 3.1.10. Flexibility and Efficiency of use

Figure 3.1.11. Design and Layout

H9. Help users recognize, diagnose and recover from errors | Score - 3

When a user attempts to enter incorrect spellings, the system accurately identifies the issue, nevertheless, the website does not detect and repair small errors. The users are not intimidated

by the error messages display as the error messages are simple and straightforward.



Figure 3.1.12. Error recommendation



H10. Help and documentation | Score - 5

The most important aspect of web design is the help section, where you will run into a wide range of new and unfamiliar problems. Enabling users to ask questions or offering information in the help section can assist users in finding solutions to their concerns. The RMIT Library features a chat room and a support area where users can ask questions.



Figure 3.1.13. Help section

3.2 Task 2: Book a Computer using RMIT Library with a provided Location and Time.

H1. Visibility of system status | Score - 4

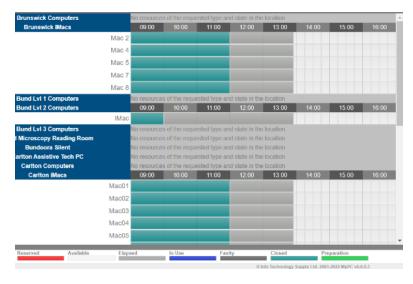
The website displays the hours that are available on a timesheet and dropdown section. This type of visualisation facilitates the user in comprehending the system availability and the ease of scheduling them in accordance with their needs





Figure 3.2.1 - 3.2.3. Dropdown Section

H2. Match between system and the real world | Score – 2



The website uses simple language to convey the system's availability, there are no complicated terminology that visitors could find difficult to understand. The dropdown portion is rather straightforward. The website offers a large variety of computers to choose from, as seen in the picture. The time sheet's representation of the computer's availability will assist the user in determining when that system will be available.

Figure 3.2.4. Representation of bookings and Layout

H3. User control and freedom | Score - 4

The system's ability to let users withdraw and reschedule booking demonstrates the website's entire independence to let users select and book computers in accordance with their demands.

H4. Consistency and standard | Score – 2

The user could take a long time to comprehend because all the pages have various design and the booking part does not correspond to utilising the time sheet.



H5. Error prevention | Score – 1

The system immediately cancels a booking without notifying the user, therefore confirmation of the cancellation is essential as there may not be enough time for the user to make another reservation.

Figure 3.2.5. Deletion of booking.

H6. Recognition rather than recall | Score - 4

The website records all of the bookings a user makes and displays them in a comprehensible calendar manner. User does not have to remember the bookings or the location everything is made available throug the website

Date	Start time	End time	Duration	Site	Location	Resource
02/10/2022	14:30	15:45	01:15:00	Library	Carlton iMacs	Mac08

Figure 3.2.6. Booking history recognition

H7. Flexibility and efficiency of use | Score - 3



Although the dropdown section is reliable but the website does not offer any customizability options, it takes time for the customer to visit it and browse all the options. By providing the filter section, the user will be able to book the machines more quickly.

Figure 3.2.7. Drop down section

H8: Aesthetic and minimalist design | Score - 3

The system's architecture is simple, and there are no ambiguous phrases. Except for a few recurring buttons and options that could mislead users, the website is rather simple.

H9. Help users recognize, diagnose and recover from errors | Score - N/A

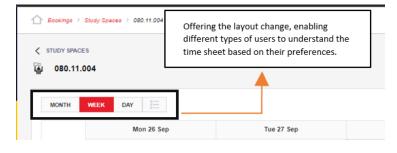
This policy does not apply since user error is extremely unlikely. There is a considerable probability that the user will make critical errors if they cannot understand the representation.

H10. Help and documentation | Score – 0

The primary objective of the website is to help users, although the booking area lacks a help section. Although there is a little chance of error, users might encounter a few unreported problems that they can report.

3.3 Task 3: Book a Study Room using RMIT Library with a provided Location and Time.

H1. Visibility of system status | Score – 5



The website displays the hours that are available on a timesheet based on the days, weeks and month. This type of visualisation facilitates the user in comprehending the room's availability and the ease of scheduling the study rooms in accordance with their needs.

Figure 3.3.1. Information Categorization based on week, month and days.

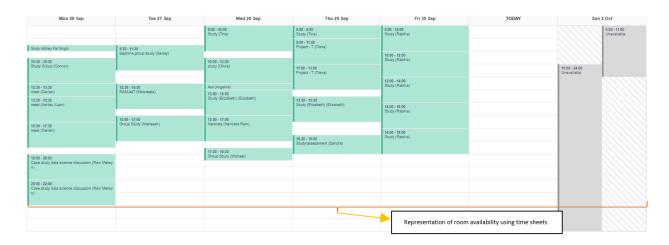
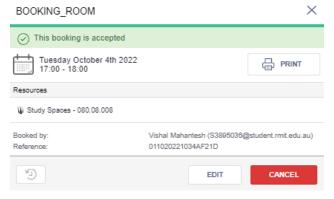


Figure 3.3.2. Allocation information indicated using time sheets

H2. Match between system and the real world | Score – 5

The website uses straightforward language to present users with the results, there are no complex terms that users might find challenging to comprehend. Additionally, it illustrates the system's accessibility using time sheets that are expressed according to week, month, and days, which may be useful to various user groups as indicated in Figure 3.3.2.



H3. User control and freedom | Score - 5

The system's ability to let users withdraw and reschedule study room booking demonstrates the website's entire independence to let users select and request study space.

Figure 3.3.3. User Control

H5. Error prevention | Score - 5

The fact that the system requests confirmation before cancelling and waits a while to do so demonstrates that it recognises that users may misstep, and it allows them opportunity to correct themselves.

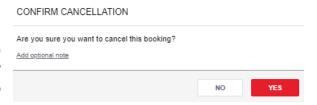
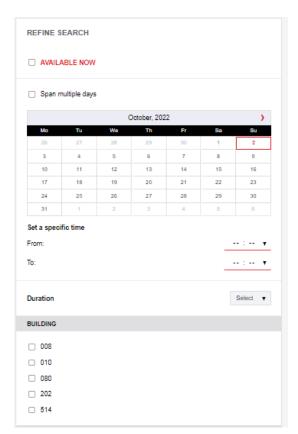


Figure 3.3.4. Canel confirmation

H4. Consistency and standards | Score – 5

All of the pages follow the same layout style. The availability of the study rooms as well as the bookings are displayed on the time sheet.



H6. Recognition rather than recall | Score - 5

The website records all of the bookings a user makes and displays them in a comprehensible calendar manner. User does not have to remember anything. Refer figure 3.3.2 for timesheets.

H7. Flexibility and efficiency of use | Score - 5

The system's rapid customization of the user's search is an extremely convenient feature. The website provides a variety of shortcuts and filters that can speed up user outcomes, improve search criteria, and cut down on time spent on the site. Refer Figure 3.3.5.

H8: Aesthetic and minimalist design | Score - 4

The system's architecture is simple, and there are no ambiguous phrases. The time sheets are better way of representing the availability.

Figure 3.3.5. Customization and Filtering.

H9. Help users recognize, diagnose and recover from errors | Score - N/A

This policy does not apply since user error is extremely unlikely. There is a considerable probability that the user will make critical errors if they cannot understand the format of representation.

H10. Help and documentation | Score – 0

The primary objective of the website is to help users, although the booking area lacks a help section. Although there is a little chance of error, users might encounter a few unreported problems that they can report.

4. Methodology

The analysis presented in this report is with regards to evaluating the usability of the RMIT Library website against known usability principals. In order to understand the issues users might face when using the website, a remote testing strategy was used where relevant users were recorded as they performed various pre-determined tasks while thinking aloud. Such a strategy was chosen as it allowed the participants to be able to perform the test from the comfort of their homes at a time best suited to them. This strategy also presented us with the opportunity to gather data such as mouse clicks and time taken to complete tasks. Using such a method allows understanding the participant's thought process while using the website and gives a general overview of how the participant feels about the website.

4.1 Participant Recruitment

The user group that we decided to test on were students studying in different levels of education at RMIT. The recruitment process for the mentioned users involved asking friends in our respective level of education and, for diversity and any unwanted biases, we approached students in the university asking them if they are willing to participate in the test. Before they began the test, we asked them to complete a screening survey which asked questions that would help us in forming a user profile. The screening survey also contained the facilitator script and consent form so that users were fully briefed before beginning the test.

4.2 Pre-determined Tasks

To make sure that tasks provided is relevant to the test, we conducted a pilot test. This helped us narrow down to relevant tasks and helped alleviate any confusion the users might face and helped mitigate any errors in presentation of the task.

4.2.1 Place a hold on a book using RMIT Library website

Undoubtedly, one of the biggest reasons why students might use RMIT Library is to locate and check for the availability of a specific book. Asking participants to locate and reserve a book of our choosing gives us an insight on the issues that may transpire for majority of the users of the website.

4.2.2. Book a Computer using RMIT Library with a provided Location and Time.

In this task we ask users to book a specific type of computer at a location of our choosing. According to our pilot test, the user faced the most difficulty in completing this task. Hence, we presented this task to the participants to better understand what are the major issues that lead to this task being challenging.

4.2.3. Book a Study Room using RMIT Library with a provided Location and Time.

Another major reason students use RMIT Library is to book a study space. In this task we ask users to book a study space at a location of our choosing. Our pilot test revealed that this was one of the quickest tasks to be completed. Findings form this task could help us understand the major underlying issues that other parts of the website may have and help mitigate them.

4.3 Analysis Approach

The quantitative data such as mouse clicks, time taken to complete tasks and number of completed tests were gathered through the reviewing of the recording of the test by the users. The qualitative data were gathered through a post task survey which involved questions regarding the difficulty and experience in completing the tasks. The consolidated quantitative data were then used to calculate statistics such as confidence intervals and standard deviations.

4.4 Statistical Analysis

According to the data collected, task 3 had the lowest average number of clicks (8), and the user reported being satisfied with the process of scheduling a study space, while task 2 had the highest average number of clicks (10.8) across all the tasks we completed and the user seemed confused and was difficult to understand. Task 1 takes the longest, at 2.73 minutes, compared to the other tasks.

Task	Averag Number of mouse clicks	Average Time Taken
Place a hold on a book using RMIT Library website.	8.8	2.73
Book a Computer using RMIT Library with a provided Location and Time.	10.8	2.55
Book a Study Room using RMIT Library with a provided Location and Time.	8	1.46

Figure 4.4.1. Statistical Analysis

5. Findings & Recommendations

5.1 Task 1: Place a hold on a book using RMIT Library website

5.1.2 Positive Features of RMIT Library

<u>Virtual Browse:</u> The RMIT Library website has a properly related area under the book details, which is a plus. The system recommends some related books to the user in a very convenient manner. It shows photos of books along with the publication date for easier identification.

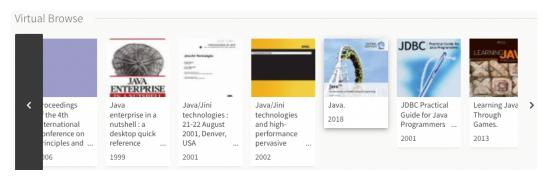


Figure 5.1.0. Suggestion of different publications

<u>Save Citation:</u> This area was quite beneficial to the users. They don't have to scroll to find their digital book version. Multiple options with appropriate icons were shown to export the book in various file formats. The user found it very easy to choose between these options.

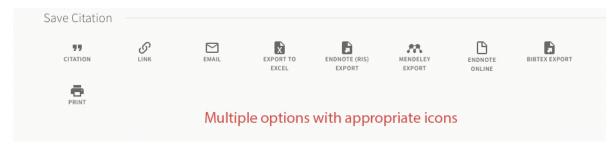


Figure 5.1.2. Wide range of option on publications

5.1.3 Problem 1

The users who try to find a book have a cover image in mind for better identification. The titles of the majority of the books are nearly identical. Many students recognise the book by its cover image. The majority of users cannot recall the author's name. In our survey, we found that users trying to find a book on the RMIT library website were confused between multiple options



displayed by the search result. Because no cover image of the book was displayed on the website for mobile devices. The user has to open the details section of the book to check the image to find the correct book.

Figure 5.1.3. Cover Images

5.1.4 Recommendation

We should maintain a consistent design across multiple devices for the RMIT Library website.



We can also display the cover images of the book for a mobile version of the website. It will reduce the user time in book finding and will also maintain design consistency across various devices.

Figure 5.1.4. Cover Images recommendation

5.1.5 Problem 2

Whenever users wish to browse the books on the library's website, the user wants to get the most search results possible per page. Because the search per page filter is placed at the bottom of the results, it might be particularly challenging to initially find the filter for adjusting the number of search results per page. Therefore, users must fully scroll through all the search results before applying the filter.

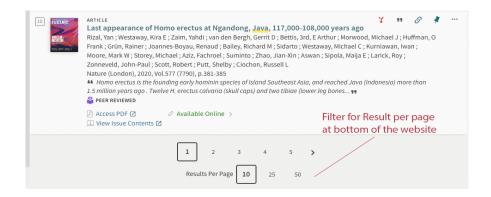


Figure 5.1.5. Filter for Results

5.1.6 Recommendation

To make the search result per page filter more visible we would advise moving it to the top or in

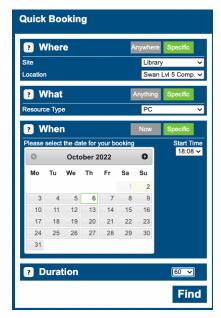


the left filters bar. The user won't have to scroll to the bottom first to apply the filter.

It will save him extra scrolling time and the filter will be more visible.

Figure 5.1.6. Result Filter recommendation

5.2 Task 2: Book a Computer using RMIT Library with a provided Location and Time.



5.2.1 Positive Features of Booking a computer

Quick Booking section: Three distinct parts make up this section. Where Can I Book? What to Reserve? When should I make a reservation? A new user will find it much simpler to reserve or locate computers thanks to these three sections. It is very beneficial for new users who initially struggle to understand timesheets.

Figure 5.2.1. Quick Booking

5.2.2 Problem 1

According to our responses, the timesheet confused users who were making computer reservations for the first time. The users couldn't make sense of some strange numbers on the timesheet's left side. The user was unaware of these figures. The timesheet was super disorganised, with tiny boxes separating the hours. It was extremely challenging for a user to click at a specific time. The elapsed time took up the majority of space on the timesheet.



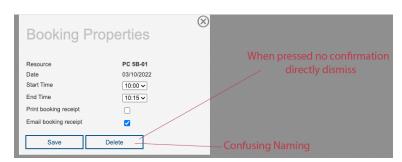
Figure 5.2.2. Grid and Screen Area

5.2.3 Recommendation

- 1. We recommend taking the first-time user to the quick booking section instead of taking them directly to the timesheet. New users will find it easier to book a computer. In the Quick booking section, there is a clearly defined section for location and time.
- 2. The time sheet should make use of the appropriate screen space. The time boxes will be much bigger and easier to click as a result. We should not show the elapsed time section in the time sheet because a user cannot book back in time. As a result, displaying only data after the current time makes more sense to the user.

5.2.4 Problem 2

There were no clear instructions for cancelling the reservation displayed. When a user opened



his reservations, there were only the options Save and Delete. The user found the delete's name to be very unclear. There was no confirmation dialogue for the user to confirm the cancellation after clicking the delete button.

Figure 5.2.3. Booking Properties

5.2.5 Recommendation

We advise changing the delete button to cancel reservations. The user will understand it better. A confirmation dialogue should appear when the user clicks the cancel booking button to confirm the cancellation. It will lower the number of erroneous cancellations.



Figure 5.2.4. Booking Properties Recommendation

5.3 Task 3: Book a Study Room using RMIT Library with a provided Location and Time.

5.3.1 Positive Feature of Booking a computer

<u>Filters:</u> There were several filters available when booking study space. They were well-organized and classified. The user had no trouble locating his prefered booking space.

TimeSheet: The Timesheet displayed in the Booking Section was very well organised. The timesheet was making good use of screen space. The timesheet's details were simple to understand.

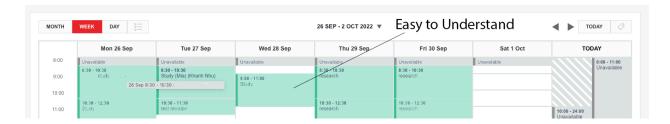


Figure 5.3.1. Time Sheet Representation of Booking a computer

5.3.2 Problem

To get results for his specific location, the user had to apply filters when booking study space. Some of the filters, such as the Level Filter, take up too much vertical space. The user had to scroll through a lot of filters while applying the filter. He had to scroll back to the top to see the outcome. Applying filters for specific study spaces takes a long time in this process.

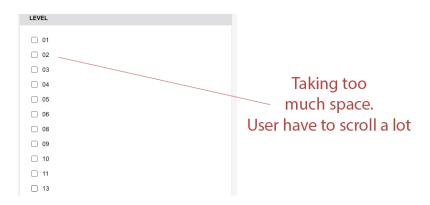


Figure 5.3.2. Filter Space in the Page.

5.3.3 Recommendation

The Level filter covered the majority of the vertical height. Instead of showing all of the levels at once. The level filters can be converted to a dropdown menu. If the user needs to select a location, a drop-down menu will appear. It will save the user a lot of scrolling time if all they want to do is book a study space

6. Conclusion

We improvised the post-task question to better understand the user experience based on the test plan we designed. In order to recruit users, we went to the RMIT Library and asked a couple of our acquaintances who are RMIT students.

The survey results and user testing for Task 1 indicated that the participants felt the task was quite simple. The majority of users were satisfied with the whole experience because they were able to complete the assignment faster than anticipated and understood the UI. The second exercise, where the data show some users had trouble understanding the overall interface and spent longer than necessary to complete the task, this was the difficult part. They were able to do the job, but they didn't think it was satisfactory. The participants considered Task 3 to be fairly enjoyable to perform after moving on. Since all of the features were simple to use, users were able to complete the task quickly, effectively, and satisfactorily.

The website for the RMIT library was quite uneven in its appearance on different platforms. For a better user experience, there should be a consistent design across multiple pages. On the search result page, several of the filters were located at the bottom. The process of applying such filters took a long time. New users have trouble navigating the throuh the page for RMIT's computer reservations. The left side of the timesheet featured some seemingly random numbers that the user could not understand. The names of the buttons in the dialogue box for cancelling a booking were also ambiguous. Information should be shown to the user in a way that makes effective utilization of the timesheet's slot.

There were several filters available on the RMIT Study space booking website to select a specific study space location. Some of the filters took up too much space. After adding filters, users must scroll all the way back to the top to view the outcomes. Some of the filters can be converted into dropdown menus to save the user time by avoiding scrolling.

7. References

Interaction Design Foundation, *Heuristic Evaluation*, Interaction Design Foundation website, accessed 26 September 2022. What is Heuristic Evaluation? | Interaction Design Foundation (IxDF).

- 2. If no, please explain why.
- 3. How clear were the naming and labelling of the links?
- 4. Compared to what you expected, how quickly did the task go?

8.4.2 Task 2

- 1. Were you able to book the computer?
- 2. If no, please explain why.
- 3. How clear were the naming and labelling of the links?
- 4. Compared to what you expected, how quickly did the task go?
- 5. Please rate you overall satisfaction with the task?

8.4.2 Task 3

- 1. Were you able to book the study room?
- 2. If no, please explain why.
- 3. How clear were the naming and labelling of the links?
- 4. Compared to what you expected, how quickly did the task go?
- 5. Please rate you overall satisfaction with the task?

8.5 After the Tests

Once all tests were done, our team went on to have a group meeting where we consolidated all the issues that the participants mentioned while they were completing the tasks through their feedback. After reviewing the data and feedback we conclude that the site has room for improvement in five different areas and identified five usability design recommendations.

8.6 Appendix II – Overall Users Feedback

User 1:

- 1. Likes the User Interface.
- 2. User found it easy to go through the website.

- 3. Could easily complete all the task.
- 4. Did not line that fact that multiple logins were required.
- 5. Login was slow and took more time than it should have.
- 6. Found timesheets very helpful.

User 2:

- 1. Did not like the user interface.
- 2. Found navigating from the homepage confusing.
- 3. Found difficulty in completing the second task.
- 4. Login was slow and took more time than it should have.
- 5. Found the timesheet easy and convenient.

User 3:

- 1. Found logging in multiple times annoying.
- 2. Login was slow and took more time than it should have.
- 3. Found the timesheet when booking a computer to be confusing and aesthetically unpleasing.
- 4. Found the interface for booking a study space to be very clean.
- 5. Felt confused after booking a computer as there was no confirmation email.
- 6. Suggested that the interface for booking a computer could be made to look more like the interface used in booking a study space.

User 4:

- 1. Liked the colours and design of the website.
- 2. Felt that the website is simple and straightforward.
- 3. Not too confusing except for the login button in the main page. User did not really understand why it appears every time though login details are saved.
- 4. Liked the time sheet representation of the labs and computer booking.

- 5. Did not really like the computer booking lay out.
- 6. Finished the task lot quicker than the user expected.
- 7. Suggested that the filters for the building when booking a study room could be more concise.

User 5:

- 1. Did not understand where to find the books.
- 2. Struggled to login.
- 3. Layout is too white and glowing.
- 4. Liked the filters in the place a book section.
- 5. User especially liked the citation and link part.
- 6. Was frustrated with the second task, had to retry logging in several times.
- 7. Did not understand the layout and timesheet.
- 8. Did not like the drop-down section, suggested to use filters instead.
- 9. Did not wanted to scroll down to find the location, suggested to search instead but there was not search button.
- 10. Liked the study space website, especially the layout, said that the layout was consistent through every page which is easy to understand.

User 6:

- 1. Like the overall design of the website.
- 2. Complained that no images for the books were being displayed when booking through the mobile phone.
- 3. Did not like that filters were place at the bottom of the screen when searching for a book. .
- 4. Suggested that the website can show more results for a search
- 5. Found timesheet when booking a computer to be confusing.
- 6. Appreciated the cleanliness of the interface when booking a study space.

8.7 Appendix III - Results from Post Task Questions

8.7.1 Task 1: Place a hold on a book using RMIT Library website

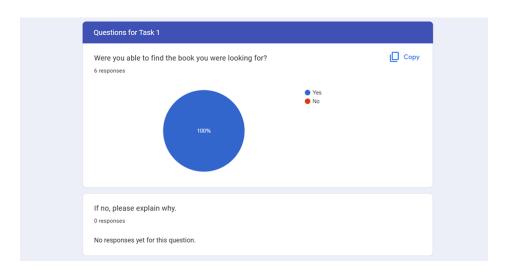


Figure 8.7.1. Question 1 response

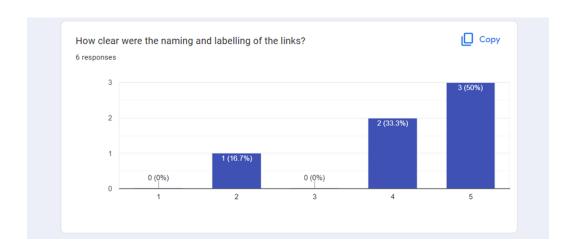


Figure 8.7.2. Question 2 response

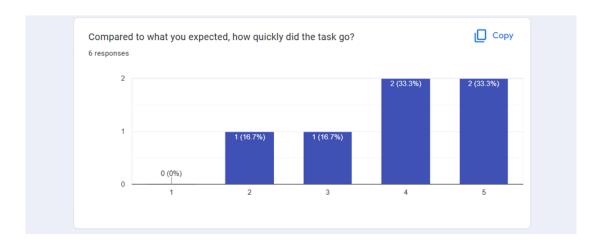


Figure 8.7.3. Question 3 response

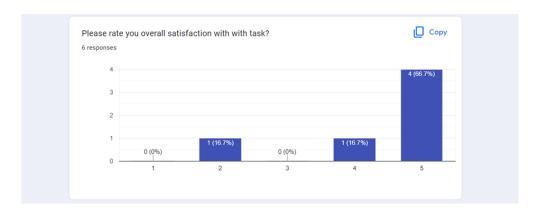


Figure 8.7.4. Question r response

8.8.1 Task 2: Book a Computer using RMIT Library with a provided Location and Time.

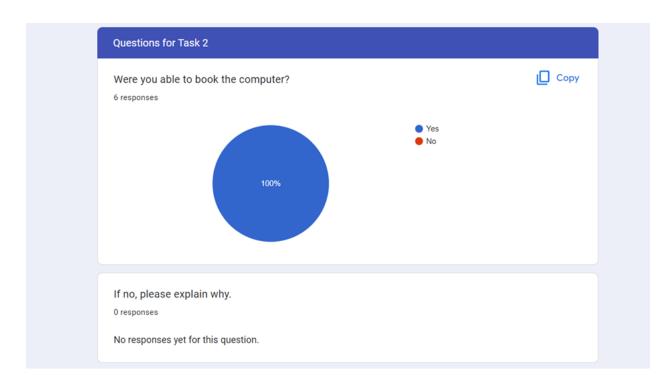


Figure. 8.8.1. Question 1 response

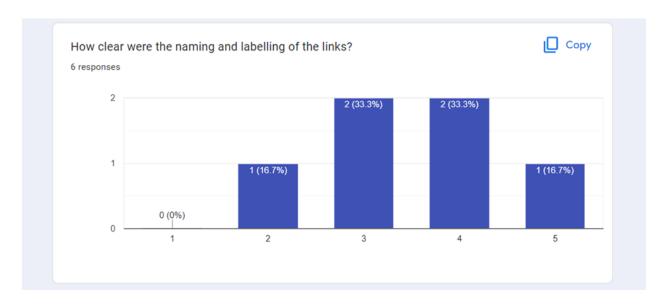


Figure. 8.8.2. Question 2 response

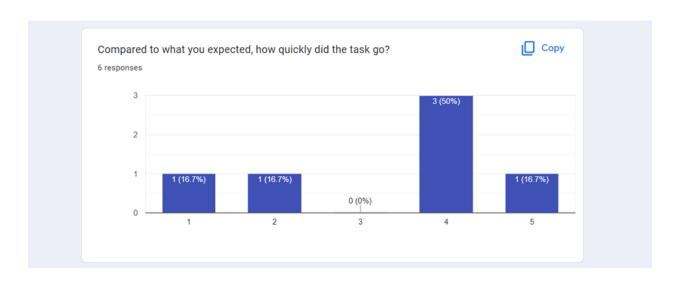


Figure. 8.8.3. Question 3 response

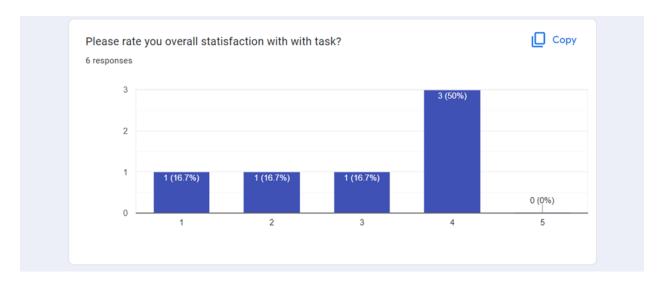


Figure. 8.8.4. Question 4 response

8.9.1 Task 3: Book a Study Room using RMIT Library with a provided Location and Time.

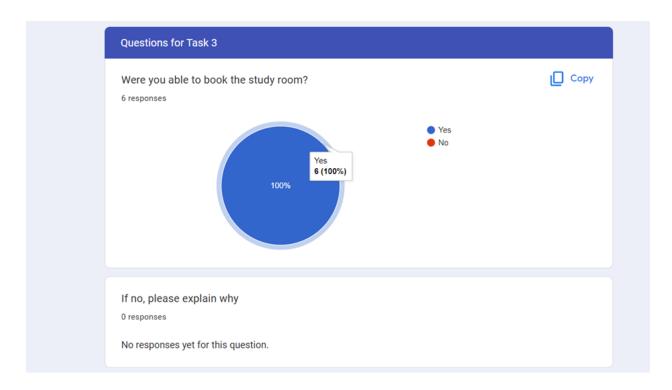


Figure. 8.9.1. Question 1 response

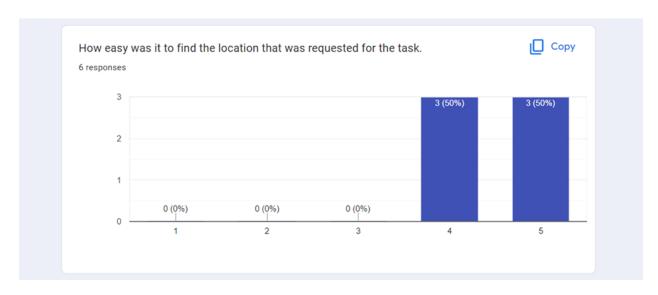


Figure. 8.9.2. Question 2 response

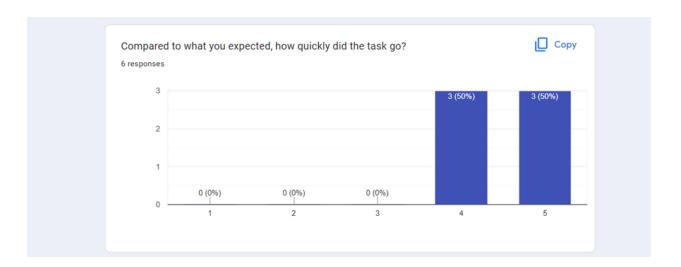


Figure. 8.9.3. Question 3 response

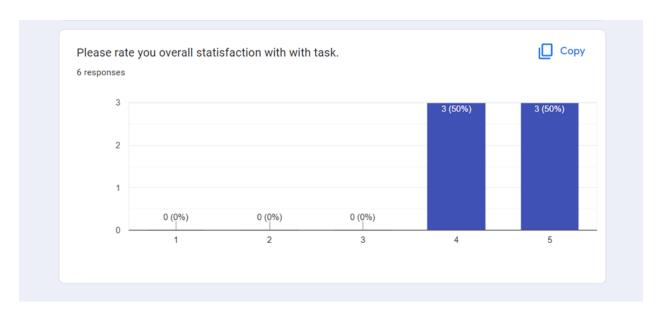


Figure. 8.9.4. Question 4 response