Usability Test Report

Group C12: Sport Lover

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# Contents

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Executive Summary

Executive Summary

Our project aims to improve the efficiency and convenience for badminton fans to search and book badminton courts and provide a platform for badminton players to connect with more people who share the same interest in badminton and to play together. Our phone app will provide information on all badminton clubs in the searching area, and online booking and payment systems, so that users could finish all processes simply on our app. Moreover, we provide an online community for every badminton player to share their experiences relevant to badminton and connect with others.

Our group had ten volunteer participants for usability testing, who provided constructive feedback for our original High-fidelity prototype. There are pre-study and post-study questionnaires for each participant, so that we could know their demographic information and their satisfaction with our app. We also recorded the process of some usability tests and gathered the average time to complete each task. Although there are some limitations in some aspects of our research, we concluded all the changes and recommendations and scored them based on their severity. Based on our research results, we have updated our high-fi prototype to its current version.

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Research Method

Process Timeline

Research

Low-Fidelity
Prototypes

Usability
Testing

High-Fidelity
Prototypes

Usability
Testing

Current
Design
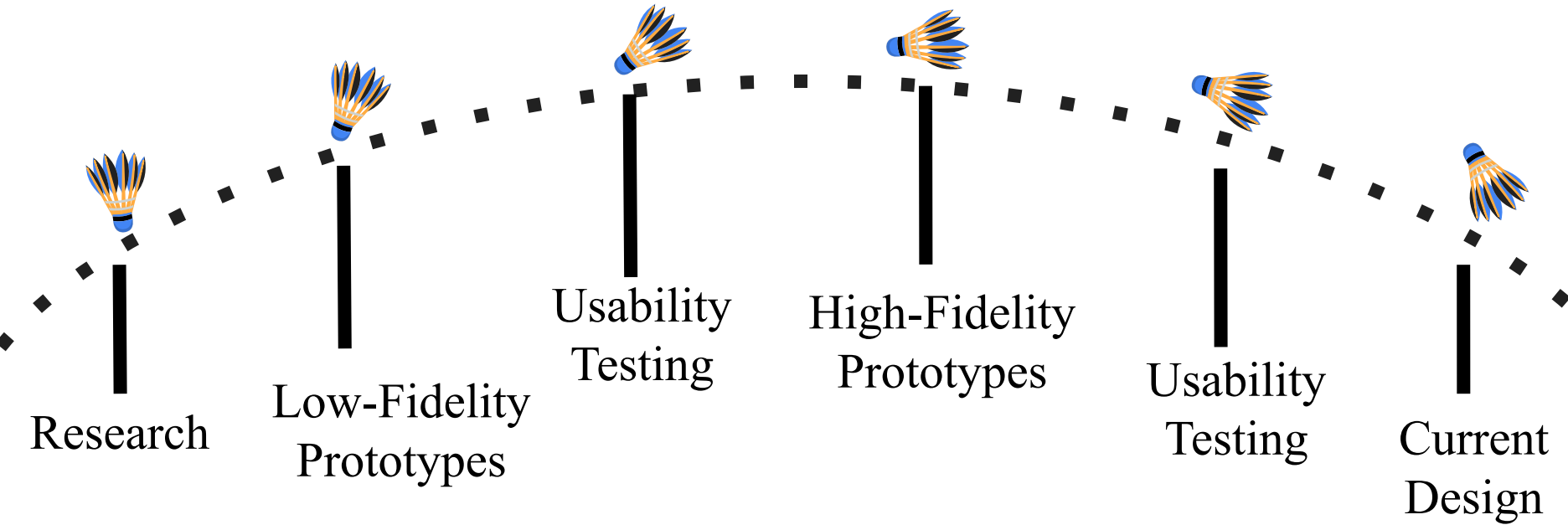
Usability testing

We asked the real participants to do the formal usability testing because we want to know whether the real users can adopt our design.

- Fill up the consent form before testing.
- Recruit users after the test.
- Taking notes and filled in prepared forms while perform testing.
- Ask participants fill up pre and post questionnaires.

Questionnaire

Pre-study questionnaire

Ask for some basic personal information that helps us to speculate whether the participant is our target audience.

Questions ask about participants' age, gender, occupation, ethnicity, education level, and how often, and how well they play badminton.

Post-study questionnaire

This questionnaire is more like an evaluation form. Participants answer questions based on their experience of the test and this help us to calculate the System Usability Scale.

Questions ask to evaluate our design and usability of all the functionalities.

In-depth Interview

Ask three questions to each participant after the usability testing, so that we can have opinions from the user's perspective.

1.What do you like most about our app?

2. What is the inconvenience that you find in our app?

3. Could you give us some advice to help us improve the quality of our app?

Task performance evaluation

- Construct a table to record the problem of each participants of each task.

- Calculate the average task time

- Calculate the System Usability Scale

- Calculate average satisfaction rate

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Participant Demographic Summary
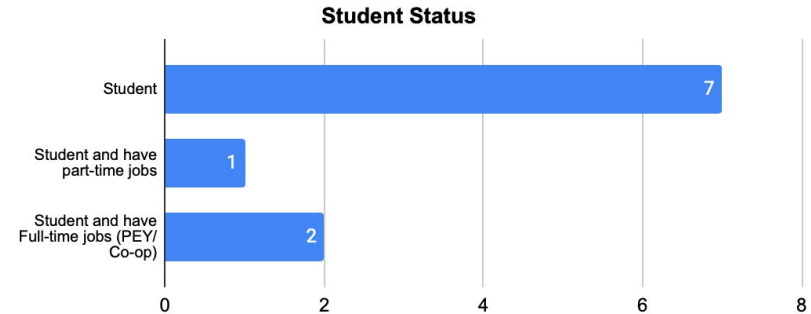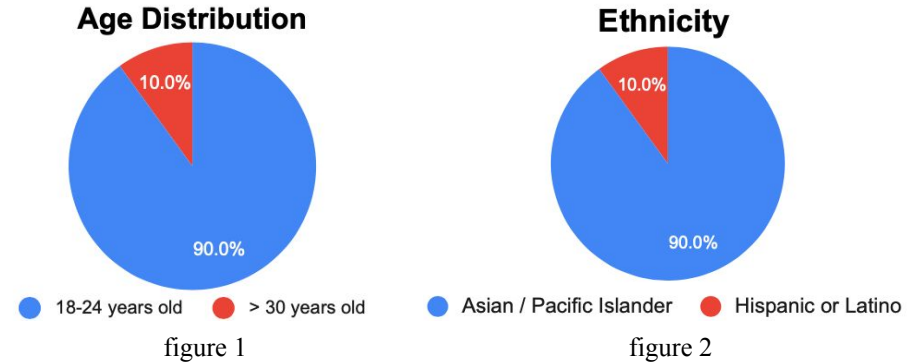
Participant Demographic Summary

7 questions in the pre-study questionnaire
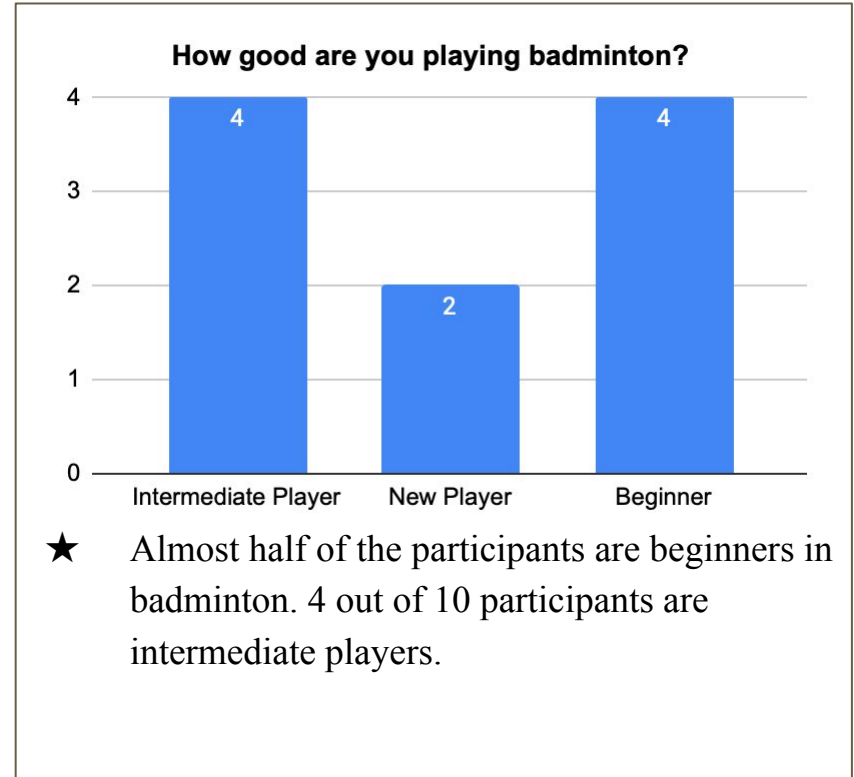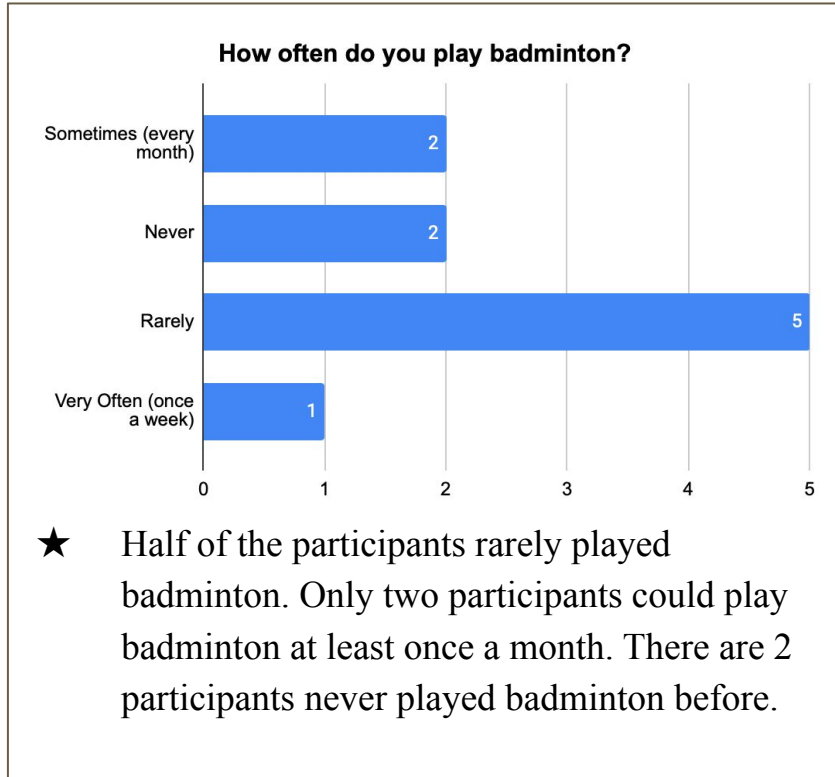
There are 9 participants in total:

- 6 Women and 4 men
- 9 out of 10 participants are between 18-24 years old (figure 1)
- 8 out of 10 participants are Asians (figure 2)
- The highest degree for most of participants are Bachelor's degree (figure 4)
- 6 out of 10 participants are students. The rest of them have a part-time or full-time job (figure 3)

What is the **highest degree** or level of school you have completed/ are pursuing?	
Bachelor's degree	Doctorate degree
9	1

figure 4

Age Distribution

10.0%

90.0%

● 18-24 years old ● > 30 years old

figure 1

Ethnicity

10.0%

90.0%

● Asian / Pacific Islander ● Hispanic or Latino

figure 2

Student Status

Student — 7

Student and have part-time jobs — 1

Student and have Full-time jobs (PEY/ Co-op) — 2

figure 3

Participant Demographic Summary-Relevant to Badminton

How often do you play badminton?

Category	Value
Sometimes (every month)	2
Never	2
Rarely	5
Very Often (once a week)	1

★ Half of the participants rarely played badminton. Only two participants could play badminton at least once a month. There are 2 participants never played badminton before.

How good are you playing badminton?

Category	Value
Intermediate Player	4
New Player	2
Beginner	4

★ Almost half of the participants are beginners in badminton. 4 out of 10 participants are intermediate players.

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Findings and Design Implication

Findings and Design Implication

Post-study Questionnaire Positive Feedbacks

Participants	SUS
P1	55
P2	80
P3	72.5
P4	77.5
P5	100
P6	85
P7	80
P8	75
P9	50
P10	95

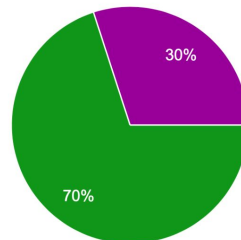Average score is 77, which means it is **good** in general.

Almost everyone agrees that our app was easy to use.

3. I thought the app was easy to use.
10 responses

- Strongly Disagree
- Disagree
- neutral
- Agree
- Strongly Agree

30%
10%
60%
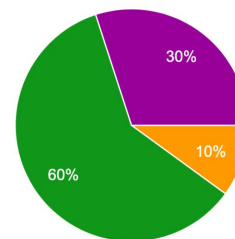
7. I would imagine that most people would learn to use this app very quickly.
10 responses

- Strongly Disagree
- Disagree
- neutral
- Agree
- Strongly Agree

30%
70%

Everyone agrees that our app was easy to handle.

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Findings and Design Implication

Post-study Questionnaire Positive Feedbacks

"What do you like most about our app?"

★ "How easy it is to schedule a court." - P1

★ "I like how the app is minimalistic. All the features included are essential. " - P2

★ "Community part is fun." - P3

★ "I like that it has a community feature" - P4

★ "Booking system is convenient and clear." - P9

Conclusion of our successful designs:

1. Online Community feature is attractive to users and makes users feel more engaged

2. The design of timetable is clear

3. The process to schedule a badminton court becomes easier

4. The design of privacy policy is well considered

Findings and Design Implication

Challenging	Severity	Developer Notes	Solution
The filter selection shouldn't be in order and mandatory	High	Difficult to change	Fix
The filter button is misleading	High	Easy to change	Fix
Too much content in court review page	Medium	Easy to change	Fix
Bottom navigation bar not consistent (eg. community page)	Medium	Easy to change	Fix
The design of payment methods is not intuitive	Low	Easy to change	Fix
Lack of back buttons, scroll bar and submit button	Low	Easy to change	Fix
Redundant content in home page	Low	Easy to change	Fix
Post history should also be able to check in community	Low	Easy to change	Next release

Findings and Design Implication

Problem	Cause of the problem	Encounter reason
Filter selection shouldn't be in order	We cannot design the logic behind so select in order is our current solution.	Users will treat our app as a complete product instead of a prototype. They want all the function to work.
The filter button is misleading	The name of the button is misleading.	Users will consider the 'filter' button as a confirm button. But it's actually a confirm button for postal code.
Too much content in court review page	The layout of the court detail page is too crowded.	Use may ignore the comment button because of too much content on this page.
Bottom navigation bar not consistent (eg. community page)	When we combine different teammates' work into one prototype, the position of button is not fixed.	When going through the prototype, a tiny move of the button is obvious to the users.
The design of payment methods is not intuitive	We designed to include both shopping cart and pay into our prototype. The distinguish between them is not clear.	Users will usually choose one between adding to shopping cart and pay. But the logic is you should add to cart first.
Lack of back buttons, scroll bar and submit button	The shape of back button is not consistent.	Users complain about the aesthetics of the design.
Redundant content in home page	There are navigating buttons in the home page which is similar in function to the bottom navigation bar.	Users complain about the aesthetics of the design.

Numeric calculations of Each Task

	Sign up Account	Filter Search Result	View Community	Comment in Community	View Details	Booking	Pay	Create Posts	Post History
Average Using Time	11.83	57.33	44.66	14.33	6.67	18.5	12.5	17.5	16
Average Satisfaction Rate	8.16	5	6.5	7	6.83	7	7.83	7	7.83

Case 1 Misleading Filter Page

Usability Severity Scale: HIGH

Problem Description:

When user executing task about filtering courts search result, user was distracted by the "filter" button and ignored the filter result change.
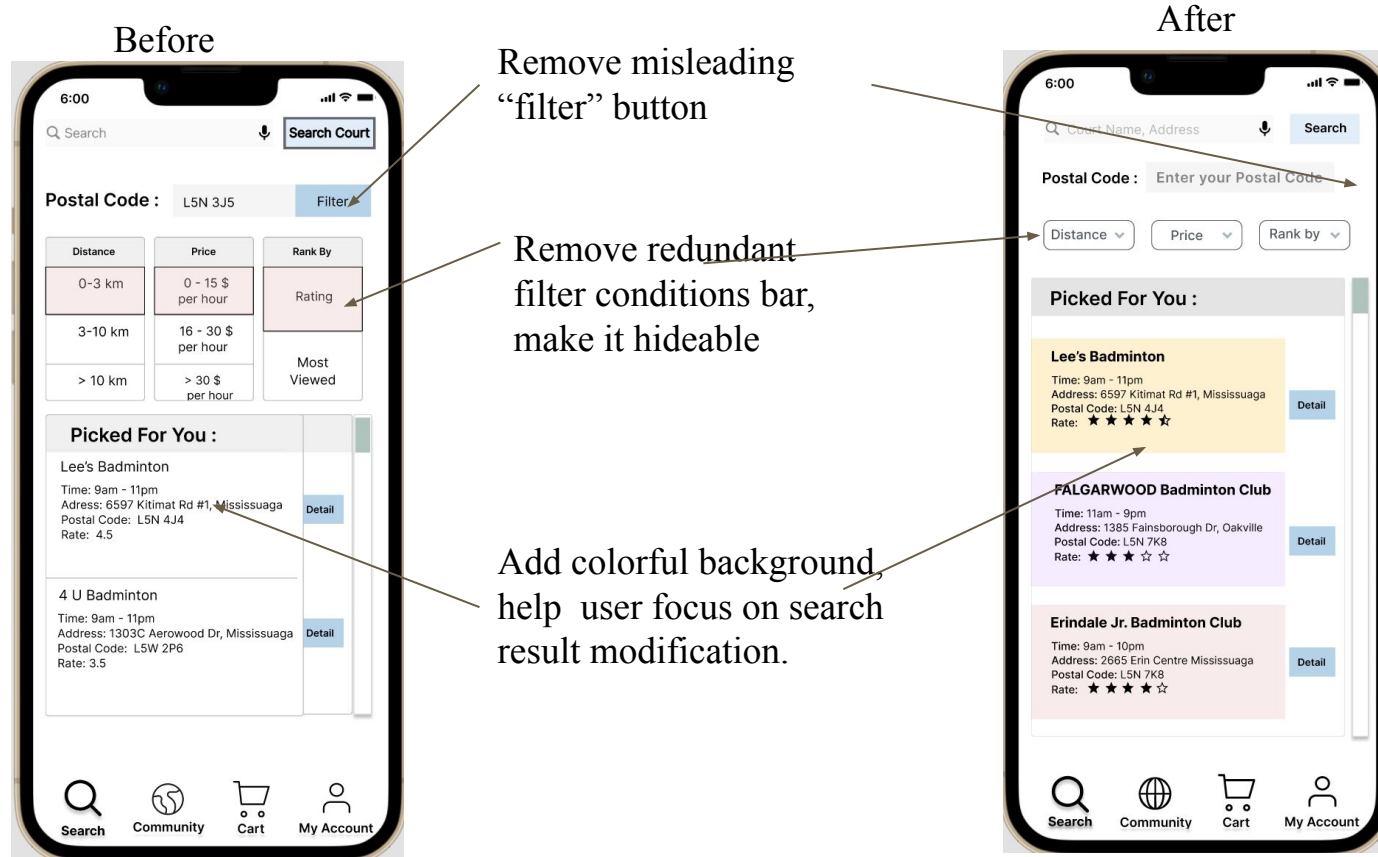
Reason:

Because the "filter" button has a misleading name, It should named as "confirm" . It is used to make sure user input postal code, not used to activate the actual filter functionality.
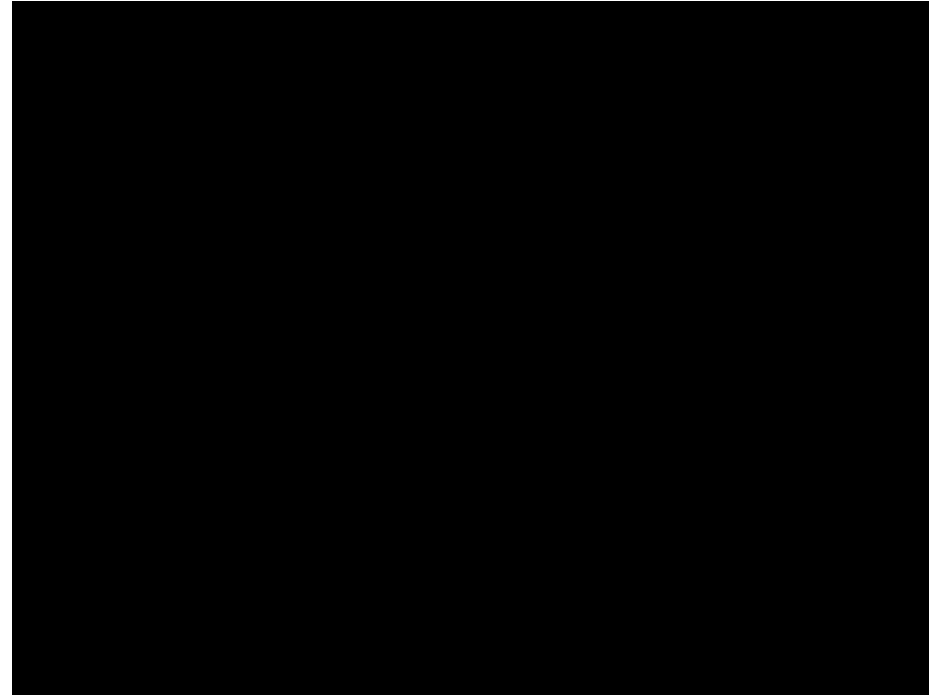
https://drive.google.com/file/d/1NKXasmjLamfsWeD8FrSh1l9dppLAxyb_/view?usp=sharing

Changes and design implication of case 1

Before

After

Remove misleading "filter" button

Remove redundant filter conditions bar, make it hideable

Add colorful background, help user focus on search result modification.
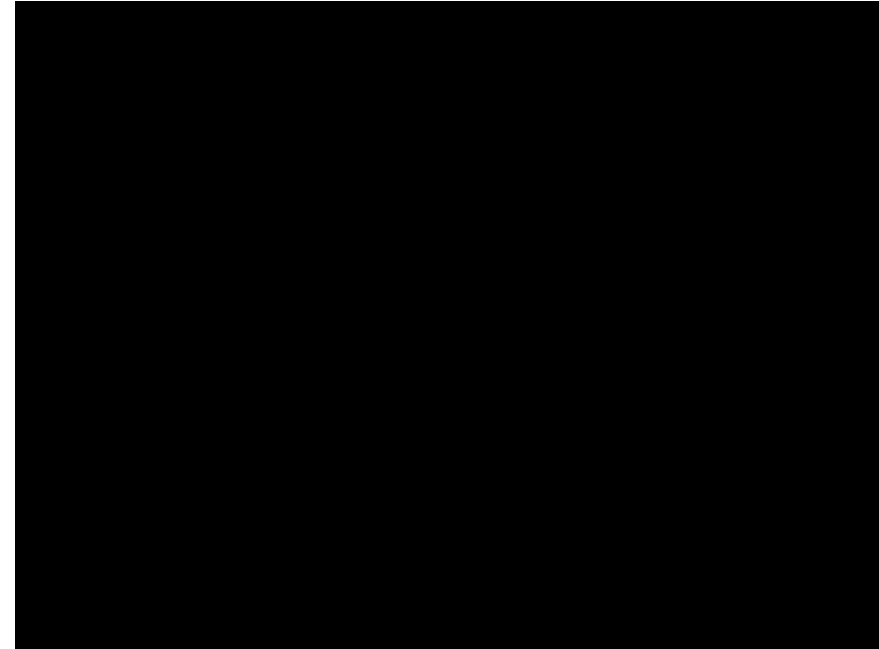
Case 2 Page Design Redundant

Usability Severity Scale: Medium

Problem Description:

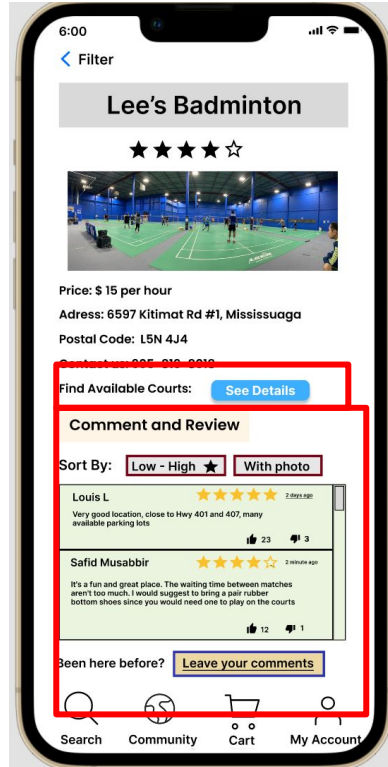User get confused facing court detail page.

Reason:

Court detail page includes too many functionalities, and it's hard to first-time user to figure out.
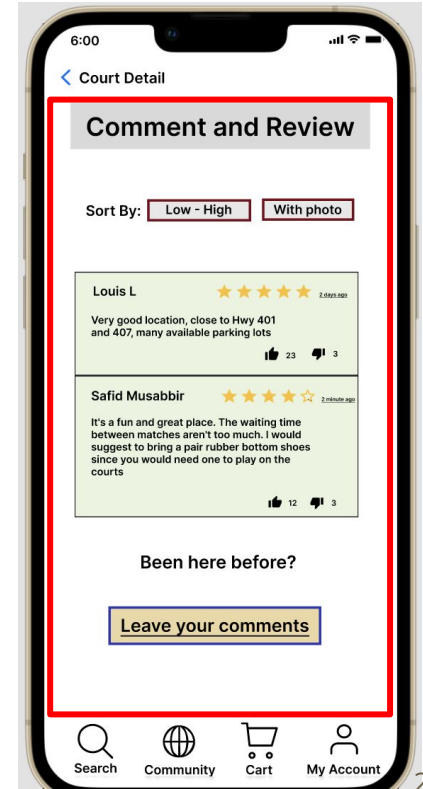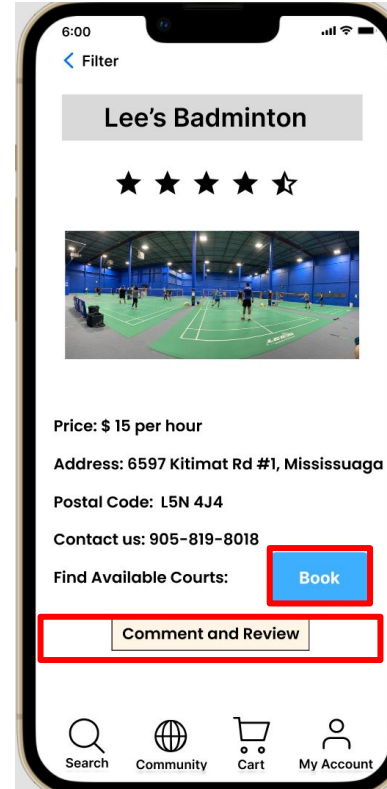
https://drive.google.com/file/d/1kLkLfCrwonAFNgpykxiR0fvuOWO-t140/view?usp=sharing

Changes and design implication of case 2

Before

Separate "Court Details" and "Comments" into two pages.

Case 3 Button Bar Consistency

**Usability Severity Scale**: Medium

Problem Description:

The bottom navigation bar is different in "community" page compared to other pages.

Reason:

Inconsistent bottom bar would confuse user, user do not know why bottom bar changed, and how to use the new different button bar when they first entering community page.

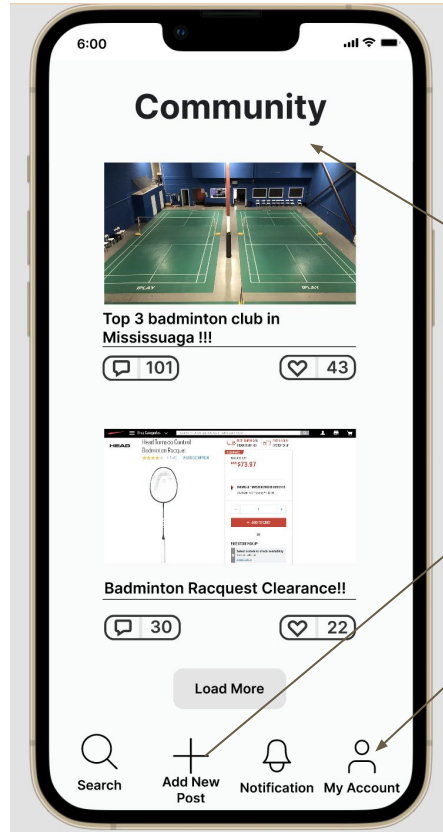"It's really weird to have a different navigation bar in community page compared to others."
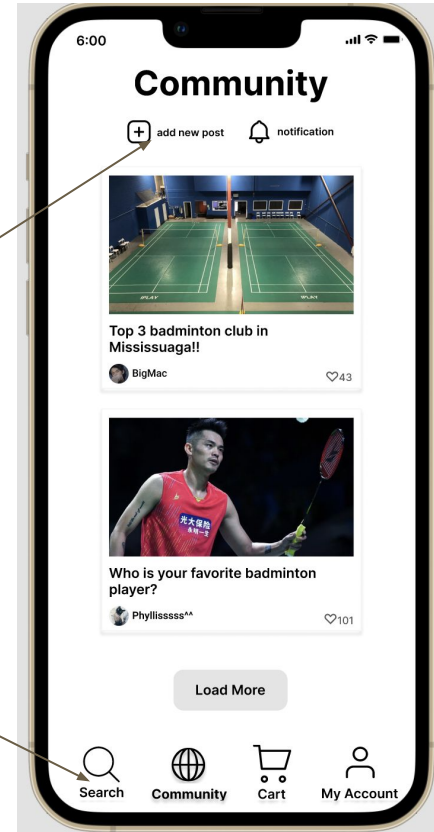
— Anonymous participant

https://drive.google.com/file/d/1IKQrVSe61b48QJOaE YIggA1gWePH0FQG/view?usp=sharing
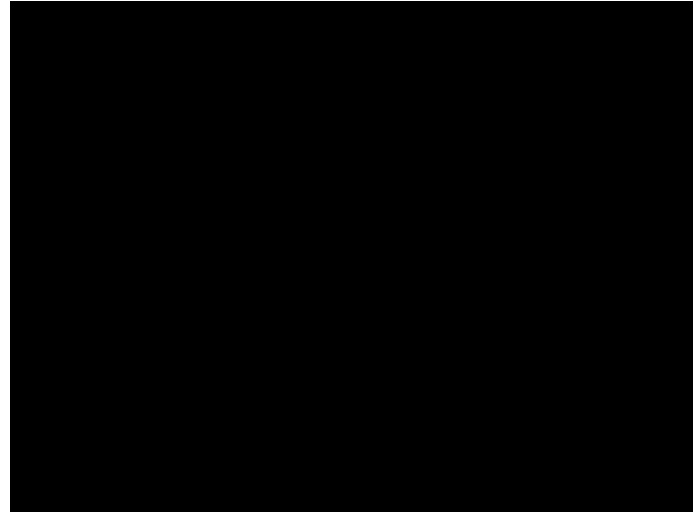
Changes and design implication of case 3

Before

After

Specific functionalities of previous community bottom bar is moved upwards and become extra button.

Maintain consistent bottom bar

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Research Limitations

Discussion of Research Limitations

Quality of prototype

- Without using Figma with programming language, some functions can only display the unified interface . For example, no matter which time slot the user booked, the time slot displayed on the payment page is the same.
- Users cannot enter actual text in our app, such as on search or post pages.

Test execution

- Inexperienced facilitators slow down the process of usability testing.
- Online test may leads to no internet connection issue.

Discussion of Research Limitations

Participants evaluated

- Small participant size (10 participants) .
- Lacking participants for occupations other than students. All participants are students.
- Many participants do not playing badminton frequently. According to the data in the pre-study questionnaire, only 10% of participants often play badminton (once a week).

Generalizability findings to a larger population of users

- User behavior is unexpected.
- Users often think that a small rectangle with a border and color is a button

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Reflection

Reflections:

Features:	Find badminton courts (Filter)	Book Courts and Pay
Assumptions:	**Before:** User know to input postal code and filter options **After:** User know to fill out postal code and then filter options	**Before:** User know two payment methods (directly pay after selecting the date and add to booking carts then pay). **After:** User know use only one pay method which is add to booking carts then pay.
Ultimate ability:	Help users find badminton court based on their needs.	Help users book time slots of different badminton courts and make a payment.

Reflections:

Features:	Community	Personal account
Assumptions:	**Before:** User know to use special bottom search bar for the community. **After**: User know the bottom search bar which is consistent with the main functional page(Filter page).	**Before:** User can only check personal information **After**: User can check order the history and check post the history as well.
Ultimate ability:	Help users connect with other users, view others' posts and make personal post.	Help users view their personal information and check their operation records.

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Appendix

Appendix - Supplementary Materials

- **Pre-study Questionnaire Results:**

  https://docs.google.com/spreadsheets/d/1wqxR_iwz4vHbPWOe39JmlmOoNeQUdCyrOU4N7rfD5w0/edit?usp=sharing

- **Post-study Questionnaire Results:**

  https://docs.google.com/spreadsheets/d/1bix2ZD9EM8caMQRNbsYIgzq8s3ZTz1lsRQlhfWOTu3c/edit?usp=sharing

Appendix - Assignment Work Attribution

Tasks	Participants
Executive Summary	Yuanhan Peng
Research Method	Jiaguan Tang
Demographic Summary	Yuanhan Peng
Findings	Chen Wang; Wenxin Zhang; Yuanhan Peng
Research Limitation	Dongliang Wang
Reflection	Jiachen Wan