COMPSCI 345

Assignment 1: Low-fidelity prototype and usage testing for a university campus social coupon smartphone application

Group 22

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Part 1. Interaction Design

1.1 Storyboard

The purpose of the Price Partners application is to offer students an opportunity to meet others. The application will work in conjunction with local businesses to reward discount coupons on their products if the students engage with each other.

Scenes (storyboard panels are read from left to right, top to bottom) are split to show the journey of each user though they are performing different tasks around the campus (Panel 1). Once a user has installed the application, the notification settings are set to the user's preference. In this case both users have set their devices to play a ringtone and vibrate (Panel 2). Their attention is suddenly directed to their mobile device as they see the notification for a new coupon opportunity (Panel 3). Both users are interested in the coupon and are directed to the local business before they are paired by the application (Panel 4).

The users are then shown to meet around the vicinity of the local business (i.e., 'Shakey Isles'; Panel 5) where, via QR code scan, they will confirm with the application that they are ready to complete the semi-scripted interaction (Panel 6). This step is to ensure partnered users physically meet each other. Users may meet each other inside the local business if it is crowded or may meet each other outside the local business to be considerate of other patrons.

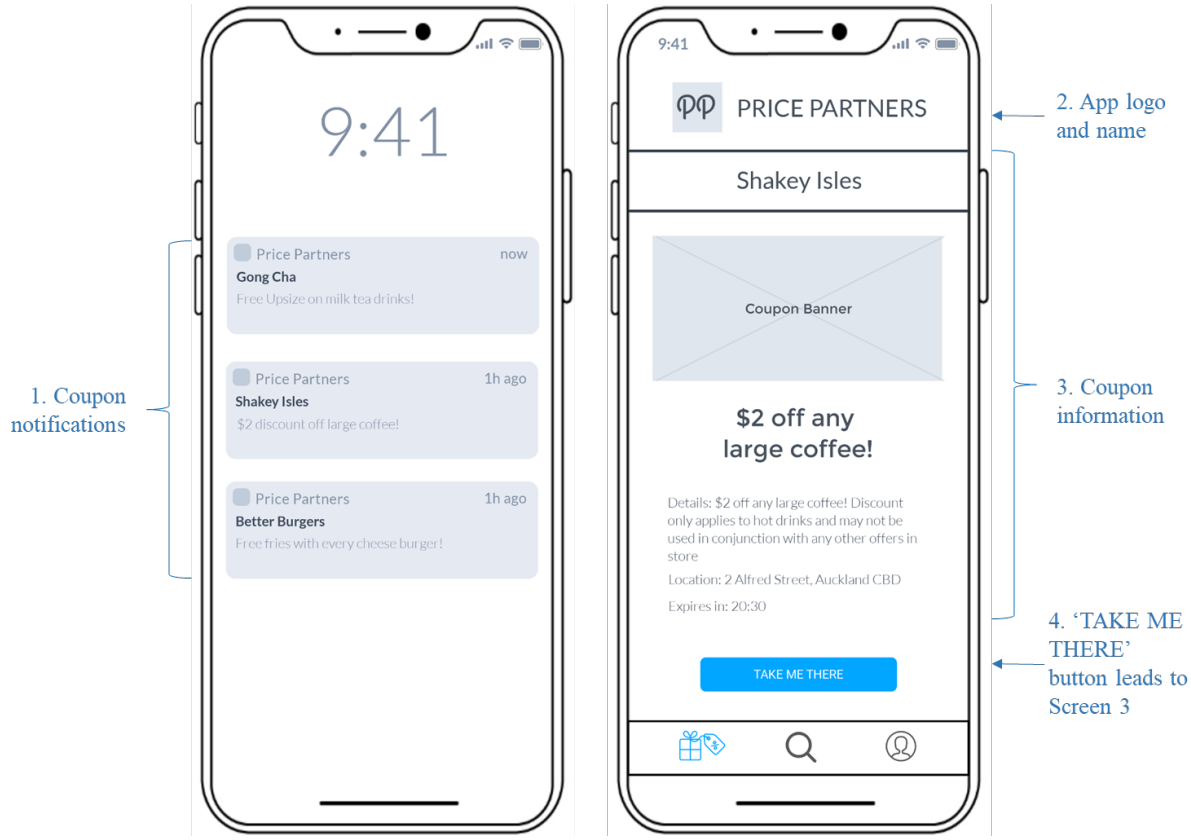
After connecting with each other's device, the users are now required to interact with each other until they find three facts or interests that they share in common (Panel 7). This interaction will hopefully lead to extended conversations regarding similar interests outside the context of unlocking coupons. Once the application has accepted both users' inputs the coupon is unlocked and becomes ready to be redeemed at the counter (Panel 8).

1.2 Low-Fidelity Prototype, Description, and Video

1.2.1 Low-Fidelity Prototype and Description

Figure 1

Screen 1 featuring Price Partners notifications for new coupon opportunities (left) and Screen 2 featuring the application landing screen for a $2 off large coffee coupon (right).



On the left of Figure 1 is Screen 1 of the low-fidelity prototype. This screen features a user's lock-screen as new coupon opportunities arrive. The lock-screen notifications provide the user with a visible reminder of new coupons without the user having to open the application. Each notification displays important key information such as the application name (i.e., Price Partners) and icon to inform the user of where the notification is from, the local store to which the coupon is valid for, the offered deal or discount, and a timestamp of when the notification for the new coupon was received. The name of the local store and the deal itself were incorporated into the notification design to allow the user to understand the

most important details of a coupon quickly without inundating them with too much information.

On the right of Figure 1 is Screen 2 of the low-fidelity prototype. This screen features what a user will see after clicking a coupon notification on Screen 1. Centred at the top of Screen 2 is the application's name and logo. Directly below is the name of the store offering the coupon (i.e., 'Shakey Isles'). To emphasise the name of the store, the text is written in a large and bold font and enclosed within a horizontal border. The main contents of the screen are located right under the store name. The coupon banner and coupon deal are both large and centred to help draw the user's attention to the main contents of the screen. To avoid overwhelming the user visually, the exhaustive specifics of the coupon (e.g., Details, Location, and Expiry) are written in a smaller and lighter coloured font. Directly below the coupon specifics is a bright blue button that will lead the user from Screen 2 to Screen 3 which features a map to the location of the coupon opportunity. The text on the button – 'TAKE ME THERE' – was chosen to allude to what Screen 3 contains. A bright blue colour was chosen to provide high contrast and improve visibility between the button and the rest of the contents of each screen. All other active buttons and clickable icons throughout the application are in the same shade for the same reason, and to maintain consistency throughout the application. The 'TAKE ME THERE' button is situated at the bottom of the screen on purpose. This placement reduces excessive eye movement as humans tend to scan and read screens from top to bottom. This placement also makes it easier for the user to reach the button with their thumb, especially for one-handed mobile device use. Finally, this placement also follows the natural progression of 'moving onto the next page' which will help direct the user through the application. Other blue buttons in the application (i.e., 'TAKE ME THERE', 'SCAN QR CODE', and 'CHECK') are situated towards the bottom of the screen for the same reasons.

Figure 2

Screen 3 featuring a map to the location of the coupon opportunity.

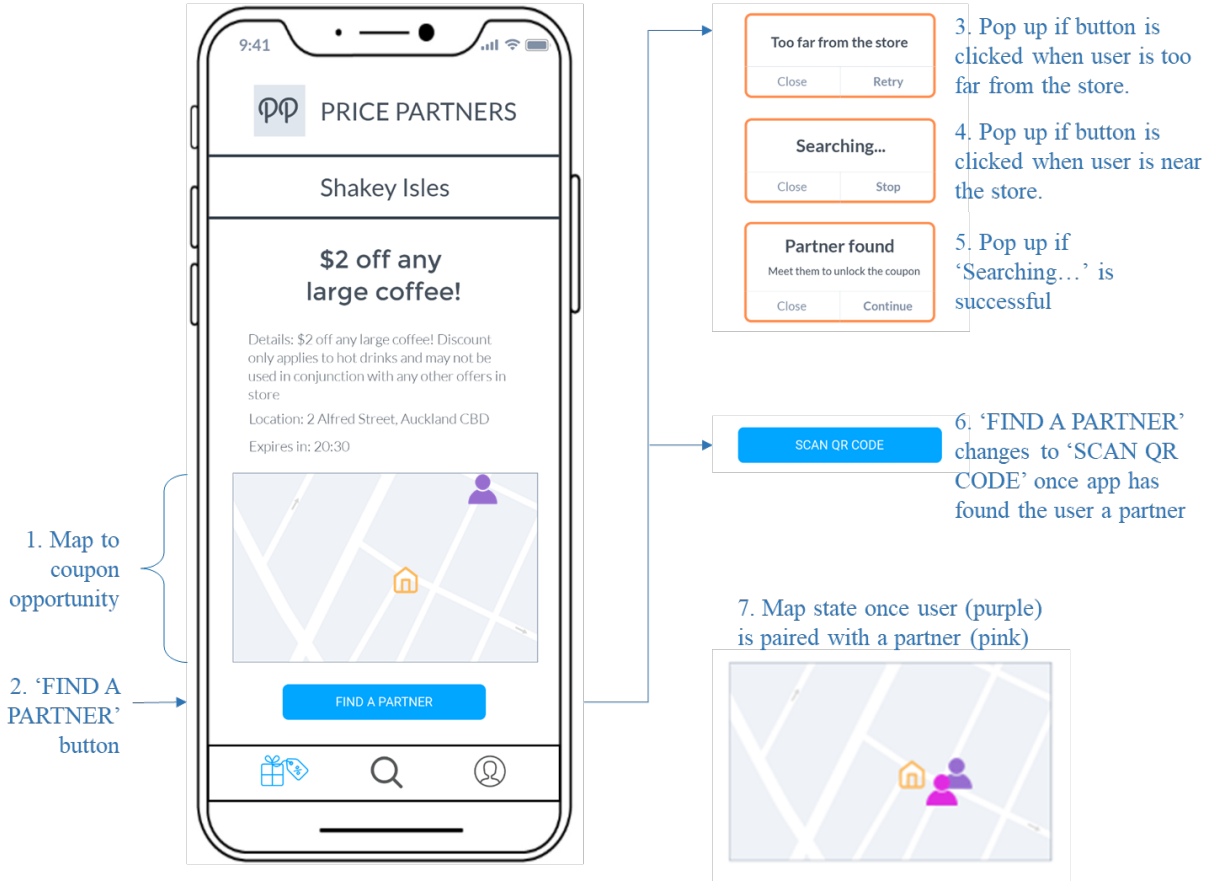


Figure 2 shows Screen 3 of the low-fidelity prototype. This screen features a map to the location of the coupon opportunity. To maintain consistency and reduce possible confusion, Screen 3 was designed similarly to Screen 2. The coupon banner was removed but the detailed specifics of the coupon were maintained to keep the user continuously informed it. This is important as the coupon specifics includes a countdown of the coupon's remaining duration before it expires (e.g., 'Expires in: 20:30'). Below the specifics is a map to the location of the store. A large GPS styled map, showing both the store location and the user's current location was chosen to provide real-time updates of where the user is located relative to the store. The map is also strategically located above the 'FIND A PARTNER' button as a subtle suggestion to the user that they must move closer to the store before attempting to

search for a partner to unlock the coupon with. Directly below the map is the ‘FIND A PARTNER’ button to suggest to the user that their next course of action after moving closer to the store is to look for a partner to unlock the coupon with. To keep the user updated on the status of the system, as well as to make them feel in control, the ‘FIND A PARTNER’ button produces three different pop-ups depending on the user’s current location (see Annotations 3, 4, and 5 on Figure 2) which they can respond to. If the user is too far from the vicinity of the store, the button will produce a pop-up informing them so. If the user is within the vicinity of the store, the button will produce a pop-up to inform the user that the application is attempting to help them search for a partner. Once the application finds the user a suitable partner, this pop-up will be replaced by another to inform the user that the application has found them a partner that they should meet to unlock the coupon. At the same time, another icon will appear on the map to show the user where their partner is located, and the ‘FIND A PARTNER’ button will be replaced by the ‘SCAN QR CODE’ button (see Annotation 7 on Figure 2). Clicking the ‘SCAN QR CODE’ button at any given point after it appears will direct the user to Screen 4.

Figure 3

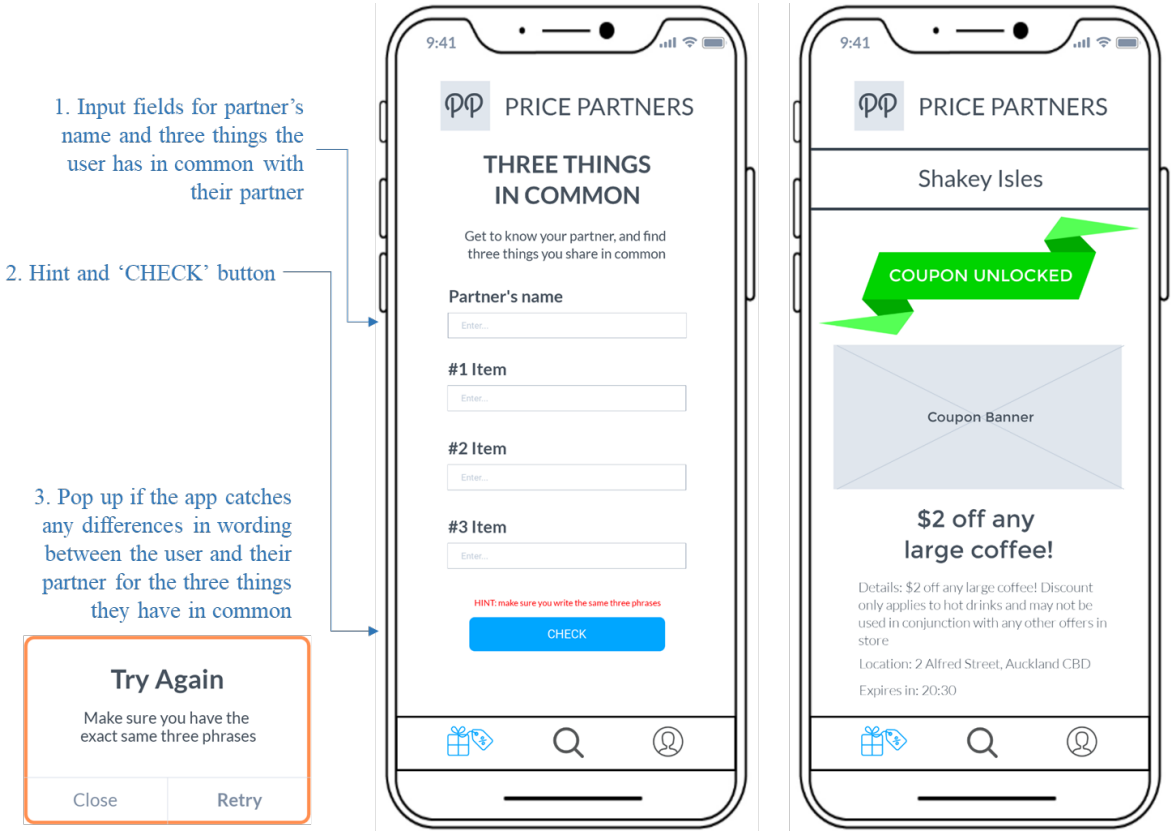
Screen 4 featuring the QR code scanner to connect users with their partners for the semi-scripted interaction.

Figure 3 shows Screen 4 of the low-fidelity prototype. This screen features a large QR code scanner to connect the user with their partner for the semi-scripted interaction. The scanner makes use of the user's camera. If the user is successful in scanning their partner's QR code, the application will send their partner an invitation (see Annotation 4 on Figure 3), which, when accepted, will lead both users to the semi-scripted interaction on Screen 5. Alternatively, the user may choose to present their own QR code for their partner to scan instead. This course of action requires the user to click the 'My QR Code' button for a pop-up of their personal QR code to appear. When brainstorming for an appropriate design for Screen 4, pop-ups were chosen as the most appropriate mode of presenting the user's QR

code to maintain the overall simplicity of the screen. This design would prevent the user from scrolling down the screen for their QR code or, alternatively, moving to an entirely new screen just to access it.

Figure 4

Screen 5 featuring the activity for the semi-scripted interaction (left) and Screen 6 featuring the unlocked $2 off large coffee coupon (right).



On the left of Figure 4 is Screen 5 of the low-fidelity prototype. This screen features the semi-scripted interaction chosen for the application. At the top of the screen is the name of the chosen activity, 'THREE THINGS IN COMMON', written in a large and bold font to catch the user's attention and immediately inform them of what they have to do to unlock the coupon. If the user is unfamiliar with the activity, a short instruction, written in a smaller font, is written under the name of the activity. When brainstorming the design for Screen 5,

Gestalt's principles of similarity and horizontal proximity were considered. The input fields are all the same width and height and have equal horizontal spaces between them. Altogether, this implies that the input fields belong to the same 'group' and are related to each other. The input fields themselves are plain and simple with little information to encourage interaction between users beyond the application itself. While completing the activity, a pair of users may fill in the input fields incorrectly. A pair may choose any three things they have in common and write them down in any order, with minor differences in punctuation and capitalisation. However, if there are any differences in wording between the user's inputs and their partner's inputs, the coupon will not unlock. This restriction was designed to ensure that users communicate with their partners properly to complete the task. This restriction is implied by the hint above the 'CHECK' button on Screen 5 and by the resulting error message (see Annotation 3 on Screen 5) on both users' devices if a pair makes mistakes.

On the right of Figure 4 is Screen 6 of the low-fidelity prototype. This screen features the unlocked coupon after a pair successfully completes the 'THREE THINGS IN COMMON' activity. For consistency and to maintain the user's sense of familiarity, Screen 6 was designed similarly to Screen 2. The only difference between the Screen 2 and Screen 6 is the absence of the 'TAKE ME THERE' button and the presence of a 'COUPON UNLOCKED' congratulatory ribbon. The colour of the ribbon was chosen to imply success. The ribbon itself is located at the very top of the screen, right below the store's name, on purpose. This placement makes easier for the user to show the unlocked status of the coupon to store attendants.

Figure 5

Screen 7 featuring a list of coupon opportunities currently available on the application.

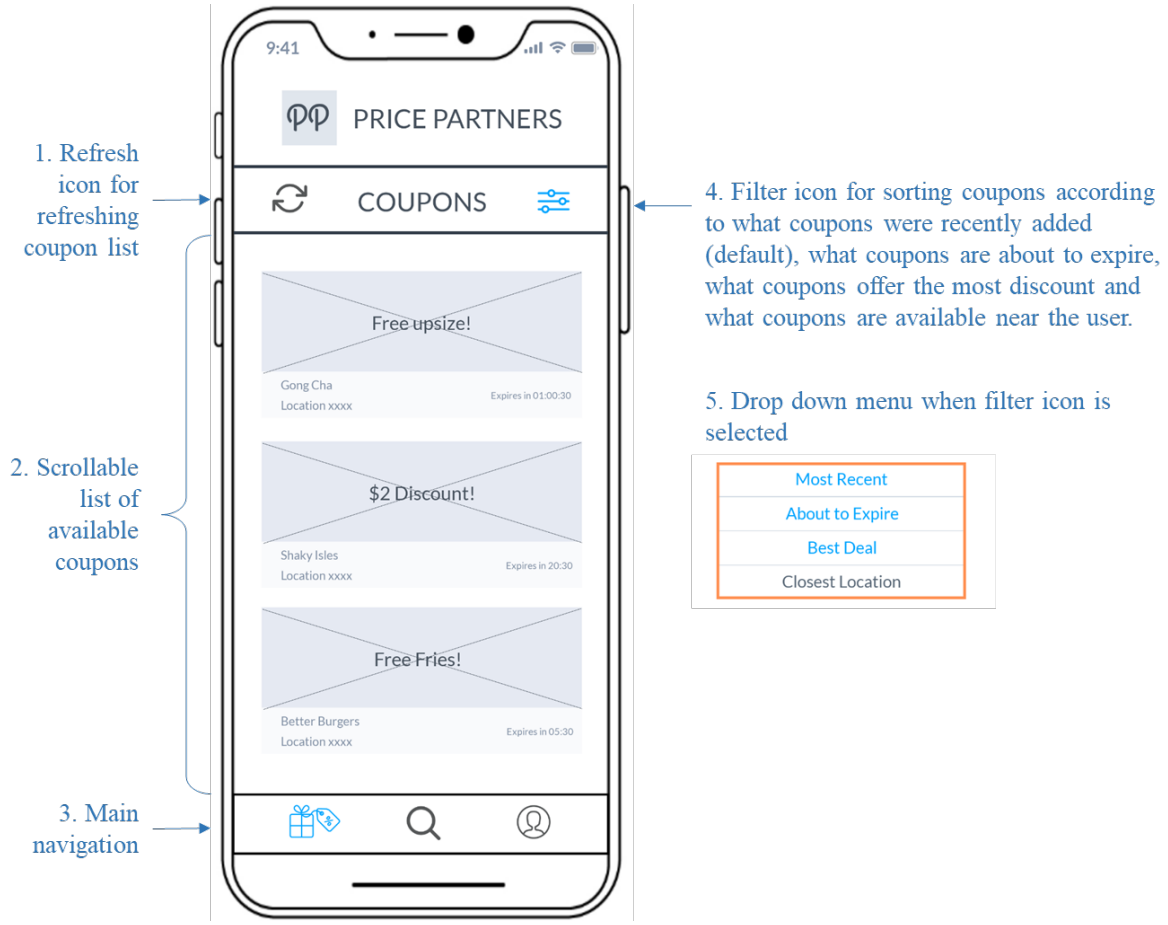


Figure 5 shows Screen 7 of the low-fidelity prototype. This screen features a list of all available coupon opportunities on the application. Right below the application name is the screen heading, written in a large and bold font and enclosed within a horizontal border. The heading itself is centred with a refresh icon on its left (see Annotation 1 on Figure 5) and a filter icon on its right (see Annotation 4 on Figure 5). The refresh icon is for refreshing the list of coupons on screen. By default, this list is ordered according to what was most recently added by default. The filter icon is for sorting the coupons in other ways. Clicking the icon will produce a drop-down menu with all the ways in which the user can filter the coupons (i.e. Most Recent, About to Expire, Best Deal, and Closest Location). The filter feature was

incorporated into Screen 5's design to allow the user better control and more freedom to view available coupons according to their preference. Directly below the screen heading, is the scrollable list of all available coupon opportunities on the application. Each coupon banner on the list features the coupon deal, written in a large and bold font to draw the user's attention. Below the coupon deal, in a smaller and lighter coloured font, on the left-hand side is the name of the store offering the coupon and its location and on the right-hand side is the remaining duration of the coupon before it expires. These pieces of information are incorporated into each banner to allow the user to understand the most important details of a coupon quickly. Right underneath the list is the application's main navigation, secluded within a horizontal border. The main navigation is present across all the screens of the application (except for the notification screen – Screen 1). The main navigation itself features three icons. The left-most icon leads to the coupons list (Screen 7), the centre icon leads to a search screen that will allow the user to search for specific coupons or deals, and the right-most icon leads to the user's profile where their account settings and personal information are stored. The main navigation itself is always situated at the very bottom of each screen, closest to the user's thumb, to make is easier for them to navigate through the application.

1.2.2 Video

Group 22 Low-Fidelity Prototype Demo Video: https://youtu.be/xtZsIWX7ReA

Part 2. Usage Testing

2.1 Usage Test Methods and Protocol

To evaluate the low-fidelity prototype, a usage test (refer to Appendices A and B for the full protocol) was conducted across five participants. Each participant completed seven different tasks in a session that lasted up to 20 minutes. Before the session, to provide relevant context, participants were given a Participant Information Sheet to read; which the

facilitators also explained verbally. After, participants were given the opportunity to ask the facilitators any questions before signed Consent Forms were collected and the session began.

During Task 1, participants had to determine when a $2 off large-sized coffee coupon would expire. This task was developed to check if users would realise that coupons were only available for a certain period of time. During Task 2, participants had to attempt to find themselves a partner for the $2 coupon. This task was developed to test if users would understand that they had to be within the vicinity of the offering store for the application to pair them with another user. This feature ensures that future users of the application meet each other for the semi-scripted interaction.

During Task 3, participants had to scan their partner's QR code or present their QR code for their partner to scan to connect to each other. This task was developed to determine if the QR code screen (Screen 4) would confuse users. During Task 4, participants had to try to unlock the $2 coupon by completing the semi-scripted interaction. This task was developed to check if users would notice the hint above the 'CHECK' button. The task was also developed to determine if the hint provided sufficient information for users to be able to unlock the coupon on their first attempt.

During Task 5, participants were asked for their general opinions regarding the semi-scripted interaction. This task was developed to conduct a subjective assessment of the semi-scripted interaction chosen for the prototype. During Task 6, participants had to filter the coupons on Screen 7 according to either 'About to expire' or 'Best deal'. This task was developed to determine if users would realise that they could filter the coupons list in multiple ways. During Task 7, participants had to explain what they thought the icons on Screen 7 signified. This task was developed to check if users would be able to recognise or understand the icons chosen for the prototype.

2.2 Participants, Results, Discussion, Implications

2.2.1 Participants

Five participants were recruited directly from the project team's friend group for the usage test. The participants were current students at the University of Auckland. Participant 1 was a 24-year old female postgraduate student; currently studying Ancient History under a Master of Arts. Participant 2 was a 31-year old male postgraduate student; currently studying International Relations and Political Science under a Master of Arts. Participant 3 was a 26-year old male postgraduate student; currently studying Environmental Science under a Postgraduate Diploma in Science. Participant 4 was a 19-year old male undergraduate student; currently studying Psychology and Criminology under a Bachelor of Arts. Participant 5 was a 21-year old female undergraduate student; currently studying Computer Science and Information Systems under a Bachelor of Science. All five participants had no prior experience in usage testing.

2.2.2 Results

During Task 1, all five participants successfully described all relevant information regarding the $2 coupon on Screen 2. However, with the exception of Participant 1, four of the five participants showed varying degrees of confusion and misconceptions about the coupon's time of expiry. The original text on the prototype stated 'Expires in: 20:30'. This represented a countdown of 20 minutes and 30 seconds before the coupon was to expire and disappear. Both Participants 2 and 5 displayed signs of confusion, asking if the text indicated that the coupon would expire on the same day. Participant 3 assumed that the text meant that the coupon would expire at 8:30 p.m. on the same day. Participant 4 speculated that the text could either mean that the coupon would expire in 20 hours and 30 minutes or in 20 minutes and 30 seconds, before stating that 'It would be clearer if the expiry actually counted down.'

During Task 2, all five participants succeeded in completing the task but found themselves a partner for the coupon with varying degrees of difficulty. Upon reaching Screen 3, Participant 4 realised immediately that they had to move the icon indicating their current location closer to the store before attempting to search for a partner. They stated that the presence of the icon indicating their current location on the map was a hint. In contrast, upon reaching Screen 3, Participants 1, 2, 3, and 5 attempted to search for a partner immediately. This prompted an error message to appear, informing participants that they were too far from the store. After reading the message, Participants 1, 2, 3, and 5 moved closer to the store before re-attempting their search for a partner and succeeding in doing so. Amongst Participants 1, 2, 3, and 5, Participant 3 took the longest to complete the task, making a series of critical errors from Screen 2 and getting lost in the application before eventually reaching Screen 3.

During Task 3, four out of the five participants managed to complete the task without any issues. Participant 4 reached Screen 4 successfully but made a critical error when prompted to unlock the semi-scripted interaction. Participant 4 thought that they could unlock the coupon with their partner by simply clicking the coupon icon. Participant 4 realised their error immediately as the icon led them to the coupons list (Screen 7). From Screen 7, they located the $2 coupon, navigated their way back to Screen 4 and completed the task once matched with a ‘new’ partner.

During Task 4, four out of the five participants seemed to have missed the hint above the ‘CHECK’ button completely. Participants 1, 2, 3, and 5 failed to check their phrases with their partner before pressing ‘CHECK’ to unlock the coupon. Participants only communicated with their partners after ‘CHECK’ prompted an error message reinstating the hint. After closing the error message, Participants 1, 2, 3, and 5 checked in with their partners for any mismatched phrases, amended their input and unlocked the coupon successfully on

their second attempt. Participant 4 successfully registered the hint as they read it out loud but still failed to check in with their partner for any mismatched phrases before clicking 'CHECK'. Participant 4 unlocked the coupon successfully after communicating with their partner and amending their input.

During Task 5, when asked for their thoughts regarding the semi-scripted interaction, Participant 1's response was 'It was fun but I don't like talking to strangers. But I think if people are lonely, it's a good way to make friends.' Participant 2 stated that the activity was a fun way to get to know people. Participants 3 and 5's responses showed concern for users who might be shy. Participant 3's response was 'Cool, I like the idea but it's a bit awkward. Especially for people who are less socially inclined. Maybe change the title above the input fields to some questions people could ask each other.' Participant 5's response was 'If you're a shy person then it's hard to make conversation with another person. There could be a pre-set basic icebreaker in case both users are shy people.' Participant 4 found the activity 'alright'.

During Task 6, all participants managed to reach the coupons list (Screen 7) on their first attempt. However, only Participants 2, 3, and 5 filtered the coupons with minimal issues using the filter tool. Participant 4 spent some time pointing out which coupons were about to expire before realising that there was a filter tool. Participant 1 failed to detect the filter tool completely. Participant 1 verbally listed the coupons according to what was about to expire first. When asked if they thought there was a better way, they stated that they had 'no idea'.

During Task 7, with the exception of Participant 1 who failed to recognise the filter tool, most of the participants correctly identified all of the icons on Screen 7 and their functions. When asked about the filter icon and given a hint that it was an icon commonly

used by online stores, Participant 1 stated that they were unfamiliar with it as they do not shop online.

2.2.3 Discussion and design implications

Results from Task 1 suggests that participants understood that coupons would expire after a certain period of time as they were able to successfully describe this detail out loud. However, results also suggest that the format used to indicate a coupon's time to expiry might be a potential source of confusion and misconception for future users of the application. The statements given by Participants 2, 3, 4, and 5 imply that this may be caused by the lack of indicative units of time to clarify a coupon's remaining duration before it would expire. It should be noted that Participant 4's statement also indicates that the static state of the text on the prototype may have contributed to the participants' confusion over the countdown. To improve matters, Participant 1 suggested including the $2 coupon's actual date of expiry in addition to its remaining duration while Participant 5 suggested replacing the countdown with the coupon's exact time of expiry. Taking both participants' suggestions into account, the expiry countdown could be amended to display the coupon's exact expiration date and time (e.g., Expires on: 10 May 2021 at 4:30 p.m.) to avoid potential confusion and misconceptions in the future.

The participants' performance during Task 2 suggests that moving closer to the store before searching for a partner may not be intuitive. Four of the five participants only realised that they had to move closer to the store to find a partner after their first attempt resulted in an error message prompting them to do so. Consequently, a future user's first inclination upon reaching Screen 3 might be to search for a partner. To minimise this error, a short instruction encouraging users to move closer to the store before searching for a partner could be incorporated above the 'FIND A PARTNER' button on Screen 3.

During Task 2, Participant 2 unknowingly raised an apprehension future users of the application may have when searching for a coupon partner. While on Screen 3, before clicking ‘FIND A PARTNER’, Participant 2 asked if the button had a filter option that would let them select a subset of people that they were willing to meet. It is possible that some users may be comfortable with meeting new people of the same age or gender only. To account for such concerns, a ‘refine search’ icon could be integrated beside the ‘FIND A PARTNER’ button on Screen 3. Clicking the icon could introduce a pop up where users would be able to indicate the subsets of people they are willing to meet before they search for a partner.

Results from Task 3 show that Screen 4 will not be a potential source of confusion for future users. Five of the four participants managed to complete Task 3 without issues. The exception to this was Participant 4 who made a critical error that they realised immediately. Overall, no amendments are recommended for Screen 4.

The participants’ performance during Task 4 suggests that future users of the application may be prone to missing the hint given above the ‘CHECK’ button on Screen 5. The hint – ‘make sure you write the same three phrases’ – was provided to help participants and their partners complete the ‘THREE THINGS IN COMMON’ activity successfully on their first attempt. The hint alludes that pairs may decide on any three phrases, which can be written in any order, with minor differences in punctuation and capitalisation, so long as they are worded similarly. Participants 1, 2, 3, and 5 appear to have missed this hint as they only checked in with their partner for any differences in wording after their first ‘CHECK’ resulted in an error message that repeated the hint. However, Participant 4’s performance suggests that failing to communicate with one’s partner before clicking ‘CHECK’ may not be an appropriate measure for whether or not a user has missed the hint. Participant 4 had read the hint out loud but still failed to check in with their partner for any differences in wording before clicking ‘CHECK’. As such, Task 4’s results should be interpreted with caution.

Responses received during Task 5 suggests that the semi-scripted interaction was enjoyable enough but concerns raised by both Participants 3 and 5 indicates that the activity has room for improvement. Some users of the application might not be as sociable or as extroverted as other users. Such users may find it much harder to complete the 'THREE THINGS IN COMMON' activity compared to others. Taking both Participants 3 and 5's suggestions into account, Screen 5 could be improved further by adding a button beside each input field that would generate a random question users could ask each other if they are struggling to start the activity or are unable to figure out what to say to their partners.

Results from Task 6 suggest that the icon chosen for the filter tool was intuitive. Most of the participants, with the exception of Participant 1 managed to locate and use the filter tool successfully during the task. Participant 1's performance suggests that some users (i.e., users who do not shop online) may not realise that the filter tool exists if they are unfamiliar with the icon used in the prototype. However, this is not a major cause for concern as first-time users are bound to eventually click the filter icon. The resulting drop down menu detailing the ways in which coupons may be filtered on Screen 7 would provide those who might be unfamiliar with the icon enough information to infer its meaning and use.

It is worth noting that Participant 2 made an interesting suggestion while completing Task 6. Participant 2 suggested incorporating a wait-list or queue to inform users of the current state of the store. They expressed that, as a user, this would help them decide whether or not a coupon would be worth the effort. Certainly, future users of the application may include those who do not have the luxury to spend extended periods of time on a coupon that is already being attempted by a number of other users. Thus, a queue feature for each coupon might be a valuable addition to the application.

The participants' performance during Task 7 showed that the icons chosen for Screen 7 of the prototype were appropriate and informative. All five participants were able to describe each icon successfully. The only exception to this was Participant 1 who had been unable to recognise the filter icon. As such, no amendments are recommended for Screen 7. While completing Task 7, Participant 3 suggested showing a preview of upcoming coupons and when they would be available from. Although not a necessity, showing a list of upcoming coupons might help encourage users to consistently return to and use the application.

To summarise, the most critical change to be applied concerns the format used to indicate coupon expiry. This caused the most confusion to the participants during the usage test. Another important amendment to the application involves adding a short instruction on Screen 3 to minimise any attempts made to search for a partner before users reach the vicinity of the store offering the coupon. Besides changes driven by the results, additional changes encouraged by the participants' interesting remarks and insightful questions, although not of utmost importance, have the potential to greatly improve the application. This includes adding a 'refine search' function for the 'FIND A PARTNER' button on Screen 3, adding a random question generator on Screen 5, adding a queue feature for each coupon on Screen 2 and Screen 7, and adding a preview of upcoming coupons on Screen 7. Overall, the results show that the application has plenty of room for improvement.

Appendix A

Participant Information Sheet and Consent Form

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PARTICIPANT INFORMATION SHEET

Usage testing of a low-fidelity prototype for a university campus social coupon smartphone application

Project team members: Allen Sambajon, Athena C. Macababbad, James Besant, Jesse Williamson, Kai Wang.

This project

Rationale: Recently, Hamza et al. (2020) found that university students without preexisting mental health concerns are more likely to show increased levels of psychological distress and a greater decline in mental health than students with preexisting mental health concerns during the COVID-19 pandemic. Hamza et al. also found that this phenomenon is directly correlated to increased social isolation.

Aims: The aim of this project is to develop a smartphone application experience that encourages university students to meet and interact with other students that they have never met, in the context of unlocking coupons for various local businesses.

Benefits: Participation on this project will have no explicit benefit to you, the participant. However, your contribution to this project will provide us with helpful and valuable information that may be used to improve our social coupon smartphone application.

Risks: There are no known risks in participating on this project.

Invitation to participate and right to decline or withdraw

You are invited to participate in evaluating and testing a prototype of our social coupon smartphone application. Your participation in this project is voluntary, and should you no longer wish to participate, you may decline our invitation or withdraw from the project at any given point. Should you wish to participate, the maximum expected time commitment from you for this project is 20 minutes.

Reference
Hamza, C. A., Ewing, L., Heath, N.L., & Goldstein, A.L. (2021). When social isolation is nothing new: A longitudinal study on psychological distress during COVID-19 among university students with and without preexisting mental health concerns. *Canadian Psychological Association, 62*(1), 20-30. doi: 10.1037/cap0000260

Project procedures

You will be asked to complete a series of simple tasks by our project team members. You will be fulfilling these tasks by navigating through a paper prototype of our smartphone application. Complete these tasks as how you would if the application was on an actual smartphone. These tasks will help us understand how potential users may use our application and the potential problems they may face when using our application. While completing the tasks, you will be asked to share your thought processes as you use the application. You will also be asked to share some of your feelings and personal opinions regarding the application. Your actions and comments will be recorded on a Microsoft Word document for later analysis. As a supplement for the Microsoft Word document, we will also be taking a video with audio recording of you as you fulfill these tasks. The video will be cropped to your hands and the application to ensure your anonymity. The written data and video will only be accessible to the members of the project and used for a project report. The written data and video will be stored for the duration of the project; after which it will be destroyed.

Confidentiality

Your participation in this project will be anonymous. We will ensure the protection of your identity by assigning you a participant ID number. Any data collected will be stored under this number. The data will never be associated with your name or any other information that may identify you as a participant of this project.

Contact details and approval

For any queries regarding the project, please email our main contact, Athena C. Macababbad, at amac741@aucklanduni.ac.nz

For any queries regarding ethical concerns you may contact the Chair, The University of Auckland Human Participants Ethics Committee, The University of Auckland, Research Office, Private Bag 92019, Auckland 1142.
Telephone 09 373 7599 ext 83711.
Email: ro-ethics@auckland.ac.nz.

Approved by the University of Auckland Human Participants Ethics Committee on __/__/__ for _ years. Reference number _____.

CONSENT FORM

Usage testing of a low-fidelity prototype for a university campus social coupon smartphone application

- I have read the Participant Information Sheet and understood the purpose of this project.
- I have had sufficient opportunity to ask questions regarding the project and am satisfied with the answers the project members have given me.
- I understand that my participation in this project is voluntary and agree to take part in this project as a participant.
- I understand that taking part in this project has no direct benefit to me, the participant.
- I understand that I am free to withdraw from this project at any given time.
- I understand that my participation in this project is anonymous and that no information that may identify me as a participant of this project will be disclosed to non-members of the project team at any given time.

Name: _____

Signature: _____

Date: _____

Approved by the University of Auckland Human Participants Ethics Committee on __/__/__ for _ years. Reference number _____.

Appendix B

Usage Testing Protocol

Usage Testing Protocol

Introductory script
"Hello, our names are [Name], [Name], and [Name]. Thank you for meeting us today. First, we'll go through what you need to know about the project then you can let us know if you would like to participate. Feel free to ask us any questions at any time."
[Go through the Participant Information Sheet and Consent Form.]

If they accept the invitation:
[Ensure that the consent form is signed].
"Thank you for agreeing to test our prototype for our social coupon application. I will be facilitating today's usage test, [Name] will be assisting me, and [Name] will be taking notes. Just a quick note, you can interact with any of the pop ups, cut outs and blue coloured elements on the screens."

If they decline the invitation:
"No problem at all! Thank you very much for your time."

User experience tasks
Note: For all tasks, beyond information under "Data to collect", record all thoughts, comments, actions and any difficulties faced while the participant uses the interface.

Task 1

Hypothesis	Users of the application may not realise that each coupon will expire after a certain period of time.
Task	Find when the $2 off large coffee coupon will expire and disappear.
Prompt	[Participant must start from the notifications screen (Screen 1) and select the correct coupon to move to the coupon landing screen (Screen 2)] • "You received a new opportunity to save $2 off large sized coffee some time ago! Find out more about this offer and tell me all about it." If participant fails to notice the expiry, point it out.

	• "Did you notice that the coupon is about to expire sometime soon? How long is it still available for?"
Data to collect	All information participants notice about the offer.

Task 2

Hypothesis	First-time users may not realise that the semi-scripted interaction is facilitated by the application. Users are paired with each other only if they are around the vicinity of the coupon opportunity. If otherwise, the application will not be able to match users with a partner for the coupon.
Task	Find a partner for the $2 off large coffee coupon opportunity.
Prompt	Participant must start at the coupon opportunity screen (Screen 2), click "TAKE ME THERE", and move to the map to store location screen (Screen 3). • "Okay, now let's see if this store is within walking distance from us." Once participants are on Screen 3, they must click "FIND A PARTNER" to find themselves a partner for the coupon opportunity. • "Now, try and see if you can find someone to unlock the coupon with." The participant may move the icon representing their current location on the map at any given point. The facilitator may move their icon for them if they realise that they must move closer to the store but do not move their icon themselves. Change the pop-ups and the "FIND A PARTNER" button to the "SCAN QR CODE" button based on the participant's location on the map and the application's success at allocating the participant with a partner.
Data to collect	Record when and how participants realise that they must move closer to the store for the application to be able to pair them with another user.

Task 3

Hypothesis	In a pair, one user must present their QR code while the other scans it for both users' devices to be connected for the semi-scripted interaction. However the scan QR code screen (Screen 4) used to connect users with each other may be confusing.
Task	Unlock the social activity. Participants must either scan their partner's QR code OR show their QR code for their partner to scan.
Prompt	Participant and facilitator's helper must start at the Scan QR code screen (Screen 4). • "Let's say [Name] is your partner, try and unlock the activity for the coupon together!" Participant can perform either action, but must make the first move (i.e., ask their partner to scan their QR code or ask for their partner's QR code). • "How should we do this?" – Helper must ask this
Data to collect	Record if participants are able to successfully scan their partner's QR code or show their QR code for their partner to scan.

Task 4

Hypothesis	The "CHECK" button in the semi-scripted interaction screen (Screen 5) will check if both users have written down the same three phrases for the "THREE THINGS IN COMMON" activity. The three phrases can be written in any order, with minor differences in punctuation and capitalisation, so long as there are no differences in wording. This is alluded to by the hint above the check button, but users may potentially miss this hint or fail to understand it.
Task	Unlock the $2 off large coffee coupon by completing the semi-scripted interaction.
Prompt	Participant and helper must face each other for the interaction. • "Let's get acquainted and find out what we have in common!" – Helper must ask this

	The participant will be asked to "type" the phrases out on the input fields on screen using a blank piece of paper. Participants must communicate with their partner before pressing "CHECK" to get through the activity without triggering the error message that repeats the hint above the button. Otherwise, the helper will forcefully fail the attempt and trigger the error message. • "Oh no! What do you think happened?" – Ask only if the error message is triggered
Data to collect	Whether or not participants show any indication of noticing the hint above the "CHECK" button. If participants do not communicate with the helper before pressing "CHECK", the action is taken as an indication that they missed the hint.

Task 5

Hypothesis	Users may not be motivated to use the application in the future if they find the social activity boring or worth too much effort.
Task	Assess the semi-scripted interaction.
Prompt	"In general, what did you think about the activity?" "What do you think about finding three things in common as a means of getting to know new people?" "What did you find easy about the activity?" "What did you find hard about the activity?"
Data to collect	Personal opinions, thoughts and feelings regarding the semi-scripted interaction.

Task 6

Hypothesis	By default, coupons are ordered according what was most recently added. Users are able to filter these in four different ways but may not be aware that they can do so.
Task	Filter the coupons according to what is about to expire or according to the best deal using the filter tool.

Prompt	User must be on the coupons page (Screen 7). • "Some coupons are about to expire soon, and some coupons give better discounts; can you find those that are about to expire or those that give better discounts?"
Data to collect	Are participants able to successfully use the filter tool or do they filter coupons using an alternative method (i.e., go through the list of coupons and point out soon to expire items in order).

Task 7

Hypothesis	We chose icons that felt informative to reduce the amount of unnecessary text on the application. However, users may not recognise or understand what these icons mean.
Task	Explain what the icons on the coupons mean.
Prompt	User must be on the coupons page (Screen 7). • "What do you think the highlighted icons do? What about the unhighlighted icons?"
Data to collect	Opinions regarding the icons on Screen 7 and their possible function.