Group 7 – Heuristic Evaluation

Completed by Group 8

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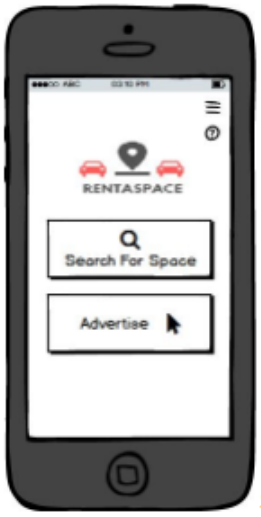
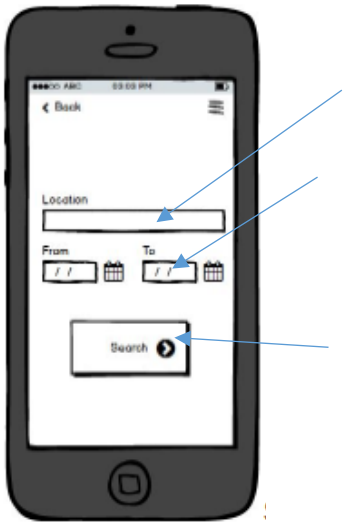
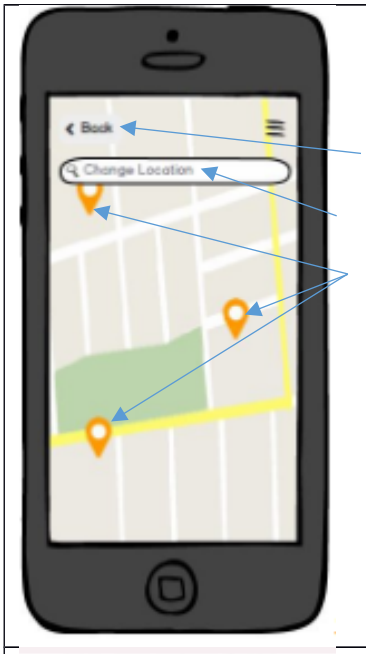
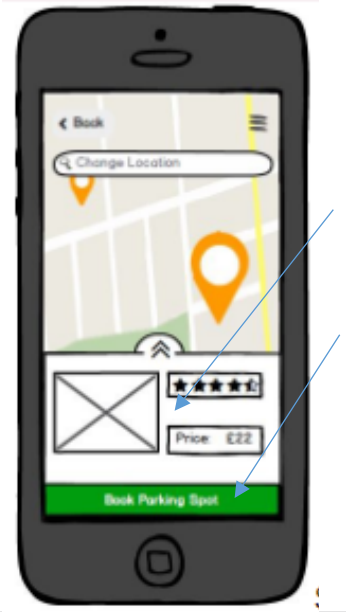
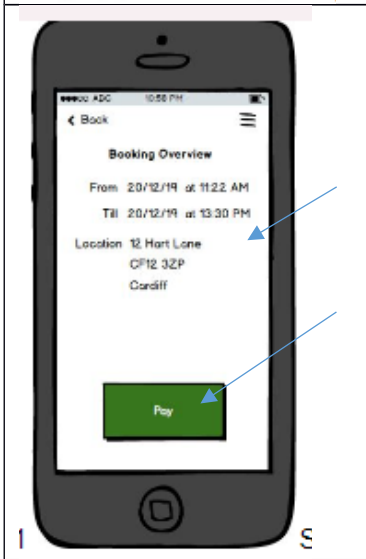
Introduction

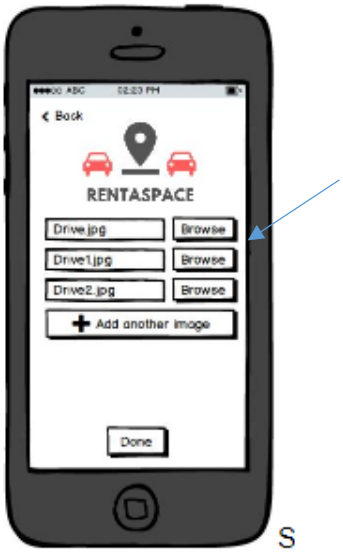
The following report is a heuristic evaluation of the prototype RentaSpace application designed by Group 7. This report will cover all of the analysis and thoughts made of the prototype designs that were provided, touching on the areas we felt were lacking or not fully thought out, as well as the features of the design we felt were well used and would best be applied in the final version of the RentaSpace application. As well as an analysis of the good and bad areas of the design, the report also contains some suggestions for areas where improvement could be made with examples.

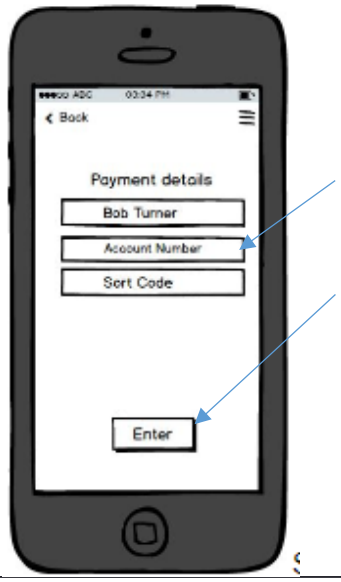
Details on RentaSpace

As previously mentioned the application is called RentaSpace, and it has been designed with the iOS standards and guidelines in mind, as a result what we hope to see from the designs is a high level of clarity, user control and consistency throughout the application. The app allows for users to either rent or offer parking spaces on other users property, meaning if one person has a parking space not in use then they can list the spot and rent it out to people who wish to park in that area. Below is a basic flow of the application (although this flow does not include every possible state).

Screen	Description
	The user accesses the two sides of the application from the home/landing page. From here they have the choice to either search for spaces or to advertise a new space if they so please. The user also has the option to enter the menu from the top right which may take you to settings or other information.
	If the user selects to search for a space they are then required to enter inputs into text fields and drop down dates for the location and times they wish to park in. After doing this, they can click the search button to begin the process of searching.

	The search screen results in a map appearing with tags for all relevant listings of parking spaces that are available under the given filters. The user can either now go back, search a new location or click on a spot they wish to see more details on.
	If the user chooses to look at a particular parking space the details appear overlaid on top of the map, showing the rating of the space, the price and other information. The user can now choose to book the space by clicking the button at the bottom of the screen.
	Information is displayed about the space confirming all the details to the user before they proceed to payment. If they want to pay they can do so by clicking the ‘Pay’ button.

	The user again fills out of the required input fields containing the card details that they wish to pay with, before confirming the payment and completing the booking of the space.
	If at the home screen the user chose to instead list a new space they are then faced with a listing page which requires them to enter all the necessary information on the parking space. They confirm the details by clicking the ‘Advertise’ button at the base of the page.
	If the user wishes they can provide images of the parking space as further details.

	Finally from the listing side the user must enter their bank details so that they can receive payment from the application once somebody has booked their space on RentaSpace. Once they click ‘Enter’ the listing is completed and they user is faced with a confirmation screen.

Heuristic evaluation

Whilst evaluating the given screen designs for RentaSpace, we were sure to keep in mind Nielsen’s 10 usability heuristics that are a strong way of evaluating a system fully. By doing so we were able to thoroughly evaluate every aspect of RentaSpace and identify all areas that were weak, missing or simply needed some improvement. On top of this we also remembered to bear in mind the iOS developer guidelines and themes as the application was meant to be design with them in mind.

Nielsen's heuristics	
1	Visibility of the system
2	Match between system and the real world
3	User control and freedom
4	Consistency and standards
5	Error prevention
6	Recognition rather than recall
7	Flexibility and efficiency of use
8	Aesthetic and minimalist design
9	Help users recognise, diagnose and recover from errors
10	Help and documentation

When actually faced with problems we have also taken into account the severity of each issue found, this can range from very minor problems that don't necessarily need to be corrected, to huge problems that completely break the application so that they are unusable. The severity ratings are as seen below:

Severity score	
0	There are no issues in this area.
1	The issues violate the heuristic but do not affect the systems usability.
2	The issues can be easily overcome or are rarely encountered.
3	The issues occur more frequently and may be difficult to overcome.
4	The issues are a major problem that is difficult to overcome and causes inconvenience to the user and should be solved immediately.
5	The issues make the system almost unusable, this issue needs to be fixed before the product is released.

When highlighting the problems found, it was also important to point out how easy it would be to fix these problems, on another scale that lists the complexity of the necessary changes to resolve the issue. The scale is as follows:

Ease of fixing	
0	There a no issues
1	The issues are easy to fix
2	The issues are easy to fix and the solution is clear. The problem involves UI elements.
3	The issues require a more complex solution and involve many aspects of the users interface
4	The issues are difficult to fix and require a lot of effort to find a solution.

Problems with the application

Number	Description of problem	Severity score	Ease of fixing Score	Heuristic number	States affected
1 – Alfred Rowett, Ondrej Romancov, Luke Aitkins, Lucas Bradford	Error message shows no detailed information or help function. Plus no suggestion the error message is from the application itself without any specific identifiers	1	1	6,10	UC1 2.1 UC1 2.2 UC2 3.1 UC3 2.1a UC3 2.1b UC3 4.1

					UC3 5.1
2 – Lara Ashford, Caitlyn Powell, Harshit Verma	The two arrows used to indicate the bar swipes up are not consistent with ios standards. A hamburger symbol (three lines) has been used for the navigation so it would be more consistent to use the single line drag symbol that ios typcially uses to drag up the bottom screen.	2	1	4	UC2.1 UC2.1.1
3 – Bartosz Borne, Lara Ashford	User not shown the location of the space they selected after choosing the space.	3	1	6	UC1.1.1 UC2.1 UC2.1.1
4- Caitlyn Powell	Inconsistent design feature for iOS	3	2	4	All states
5- Harshit Verma	Inconsistency of colour s cheme	3	1	4	All states
6- Ondrej Romancov	Inefficient and inflexible application design that requires unnecessary user repetition	2	2	7, 8	UC3 3
7-Lyubomir Kyo rovski	Inconsistent styling of submit-type buttons	3	2	4, 6	UC1 2 UC2 2 UC2 3 UC3 6
8- Lyubomir Kyorovski	Lack of help message for payment card CVV code	1	2	10	UC2 3
9- Alfred Rowett	Application lacks identity and is generic	1	2	1, 2, 4	All states

Problem 1

Number	Description of problem	Severity score	Ease of fixing Score	Heuristic number	States affected
1 – Alfred Rowett	Error message shows no detailed information or help function. Plus no suggestion the error message is from the application itself without any specific identifiers	1	1	6,10	UC1 2.1 UC1 2.2 UC2 3.1 UC3 2.1a UC3 2.1b UC3 4.1 UC3 5.1

Problem

The error messages throughout the application are vague at best saying what the issue is without being specific like suggesting how the input was wrong for example. On top of this the errors provide no option for further help and simply offer an okay/retry button to go back to the page the user was previously accessing. Finally, all the error messages lack any identification, although arguably are consistent errors don't vary other than the brief text description, as well as this you can't tell the error is caused by the application itself without any icon or logo (could be a platform error rather than application).

The popups are simply not a very smooth process to use, it interrupts what you were doing, it cannot be seen after dismissed, meaning information could be forgotten and prevents user from interacting or navigating with the rest of the interface while displayed. A much more commonly used technique to display error messages are highlights on the areas with errors, hovering text, inline text with prominence, or a combination of them. This is not too bad and is more a of an annoyance than a huge problem and is consistently used throughout, but it would be much better to replace this with a alternative system throughout to conform with standards.

- Recognition rather than recall
  This element has been ignored in that the error message is lacking in a great deal of information, and therefore requires the user to remember their previous actions to hopefully resolve the issue at hand. If the user has forgotten what they entered as their bank details for example, the error doesn't tell them exactly how or where the error has been caused.
- Help and documentation
  Once an error has occurred there is no form of help or documentation about the error in question, the user may simply just cause the problem again and again without any understanding of why.

Evidence

Information provided in the errors shown is limited and doesn't explain to the user the exact issue with their input (why is the date invalid, too far into the future, doesn't exist, already taken?)

Fix recommendation

A simple fix to this issue would be to either provide more detailed error messages with suggestions on how to resolve the issue; for example for the car payment error they could offer the regular expression which an account number is expected (with or without spaces 1234 5678 9123 4567). Another possible solution for certain errors would be to provide an error code that can be looked up in a help section on the application that better explains the issue in question. Finally to help with recognition the errors should have some form of identification that links them to the RentaSpace app, so either the name or logo to help convey the origin of the error to the user.

Problem 2

2 – Lara Ashford	The two arrows used to indicate the bar swipes up are not consistent with ios standards. A hamburger symbol (three lines) has been used for the navigation so it would be more consistent to use the single line drag	2	1	4	UC2.1 UC2.1.1

	symbol that ios typcially uses to drag up the bottom screen.				

Problem

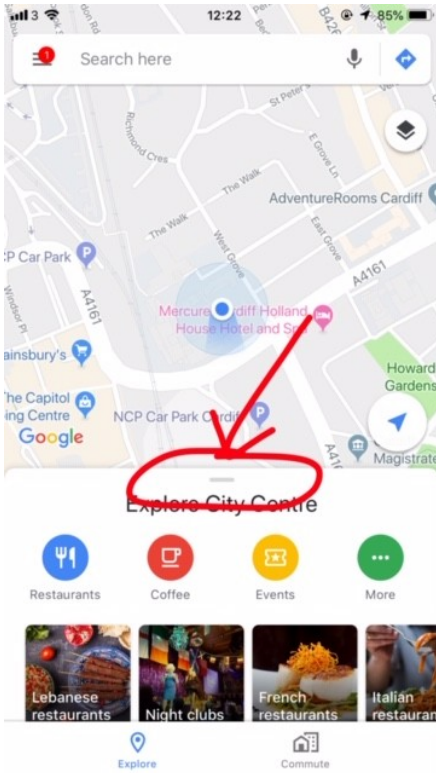
The platform chosen for this app is IOS and therefore the entire interface should be consistent with this in every element. On this screen where a location has been selected and a bar at the bottom of the screen is shown there is two small arrows indicating to the user the bar can be swiped up to reveal more information. Whereas in IOS a single bar would be used (similar to the hamburger symbol but only one line).

- Consistency and standards
  A hamburger symbol (three lines) has been used for the navigation button which is consistent with IOS standards but two arrows has been used for the drag bar which is not what is used in IOS. It would be more consistent to use the single line drag symbol that IOS typically uses to drag up the bottom screen.

Number	Description of problem	Severity score	Ease of fixing Score	Heuristic number	States affected
2 – Lara Ashford	The two arrows used to indicate the bar swipes up are not consistent with IOS standards.	2	1	4	UC2.1 UC2.1.1

Evidence

Fix recommendation



It is a very simple to fix this issue the arrow just needs to be changed to a single line (as shown in picture on left) for both state 2.1 and 2.1.1 and then they would both be consistent with IOS standards and guidelines.

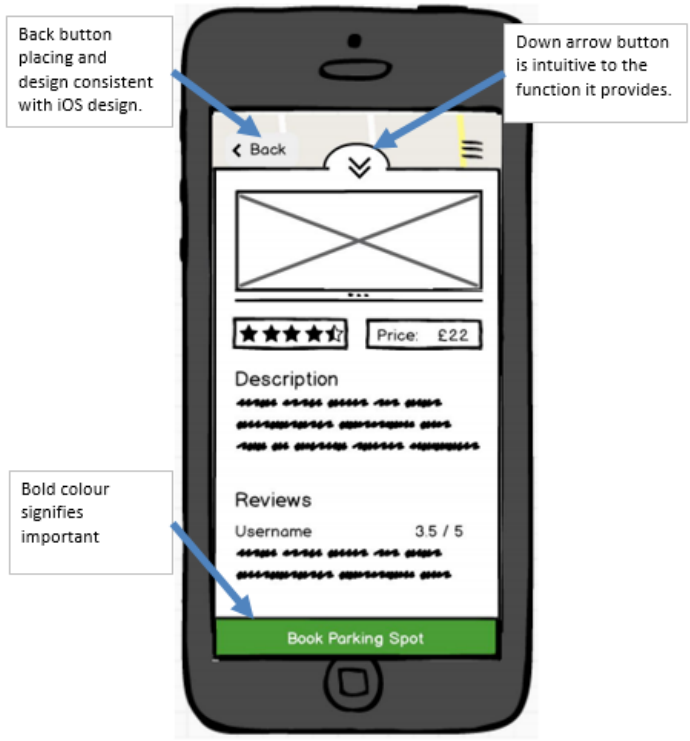
Problem 3

3 – Bartosz Borne	User not shown the location of the space they selected after choosing the space.	3	1	6	UC1.1.1 UC2.1 UC2.1.1

Problem

This is a very minor problem but there may be an issue of the user not being able to see the location of the space they have selected (after choosing the space). The user is then expected to continue by booking the spot, but they are made to rely on recalling and hoping that the space they are choosing to book is the one they intended to book in terms of location (violating heuristic no. 6). This is only a problem of severity 3 as it does not impact the usability of the app critically, just does not offer the user reassurance in their actions.

Evidence



Fix Recommendation

One possible fix for this that is already in place (done in UC1-State1), although not perfect if looking at just this state in isolation, that would not take up valuable screen space is to have the slide-up (white) element only partially (halfway) slide up when the user initially taps on a location. This would mean the user would see the all the most important information at once: the location chosen, emphasised on the map, picture(s), the star rating, price and the ability to tap the book button. If the user then wishes to reveal more information, they can slide the element up or tap the toggle.

Problem 4

4- Caitlyn Powell	Inconsistent design feature for iOS	3	2	4	All states

Problem

The use of the navigation drawer button, or “hamburger button”, throughout the prototype is inconsistent with the general guidelines given for iOS developers and is more in line with android standards. While there are many apps that are used on both android and iOS, and therefore many apps where iOS users will have come across this design before, this different design choice may be confusing for users who are used to the navigation menu at the bottom of the screen more typical for iOS apps. It has been given a severity rating of 3 as it should be fixed for the prototype to be considered a good, iOS specific app, but it is low priority as it is not a problem that inhibits the apps main functionality.

Evidence

Fix Recommendation

To be more consistent with iOS guidelines, a navigation bar should be used at the bottom of the screen, as shown below:

Problem 5

5- Harshit Verma	Inconsistency of colour s cheme	3	1	4	All states

<u>Problem 5</u>

Color scheme of the ‘Back to button’ is not consistent compare to other screens. Some of the buttons are using white color scheme and blue color scheme but this one is in blue, making it difficult for user to recognize the pay button as clickable or not. The severity rating of 3 is given for heuristic number 4 (Consistency and Standards), this is because in its current state the application doesn’t follow any of the standards or guidelines when considering the design of an application for a iOS platform. Inconsistency and not following the iOS guidelines for some designs of the screen results in making the prototype inconvenient for users and at some times confusing and misleading.

Evidence

Fix Recommendation

Alter the colour scheme and design themes throughout the application to ensure a consistent and appealing style, this would ensure the prototype designs match the iOS design themes and guidelines whilst also being working and understandable for users.

Problem 6

6- Ondrej Romancov	Inefficient and inflexible application design that requires unnecessary user repetition	2	2	7, 8	UC3 3

Problem

The user must click the add button for every additional image that they want to add which is not very efficient as it can be done with a simple multi-select screen which is nowadays included in mobile operating systems. The user also doesn't seem to have an option to remove pictures or change their order if that changed the appearance of the user's advertised parking spot. In addition to that, the user may not be sure which picture he/she has selected as only the name of the file is shown. The design is therefore not aesthetic and minimalist as the design could have been much simplified. The unnecessary number of buttons or text fields with similar purpose is cluttering the screen and distracting the user. The

severity rating of 4 was given in both of heuristics as the implications of these design problems could be as severe as user's total confusion leading to finding this screen inconvenient to use or even to not use it at all. These problems can be fixed by implementing a simpler image selecting screen that allows the user to change his selection, rearrange the order and mainly actually see the selected images. The iOS system images selection screen would suit this perfectly as it naturally follows iOS styling guidelines.

Evidence

Fix Recommendation

In order to fix these issues, the design needs to simply be made more efficient, adding a button to add numerous photos at once would be a good place to start, on top of this a simple drag and drop feature to change the order of the photos would make the whole process a great deal smoother. Finally, the addition of a new button that allows for the selection and deletion of selected photos is necessary as currently without this feature the user can only continue to add more photos.

Problem 7

7-Lyubomir Kyorovski	Inconsistent styling of submit-type buttons	3	2	4, 6	UC1 2 UC2 2 UC2 3 UC3 6

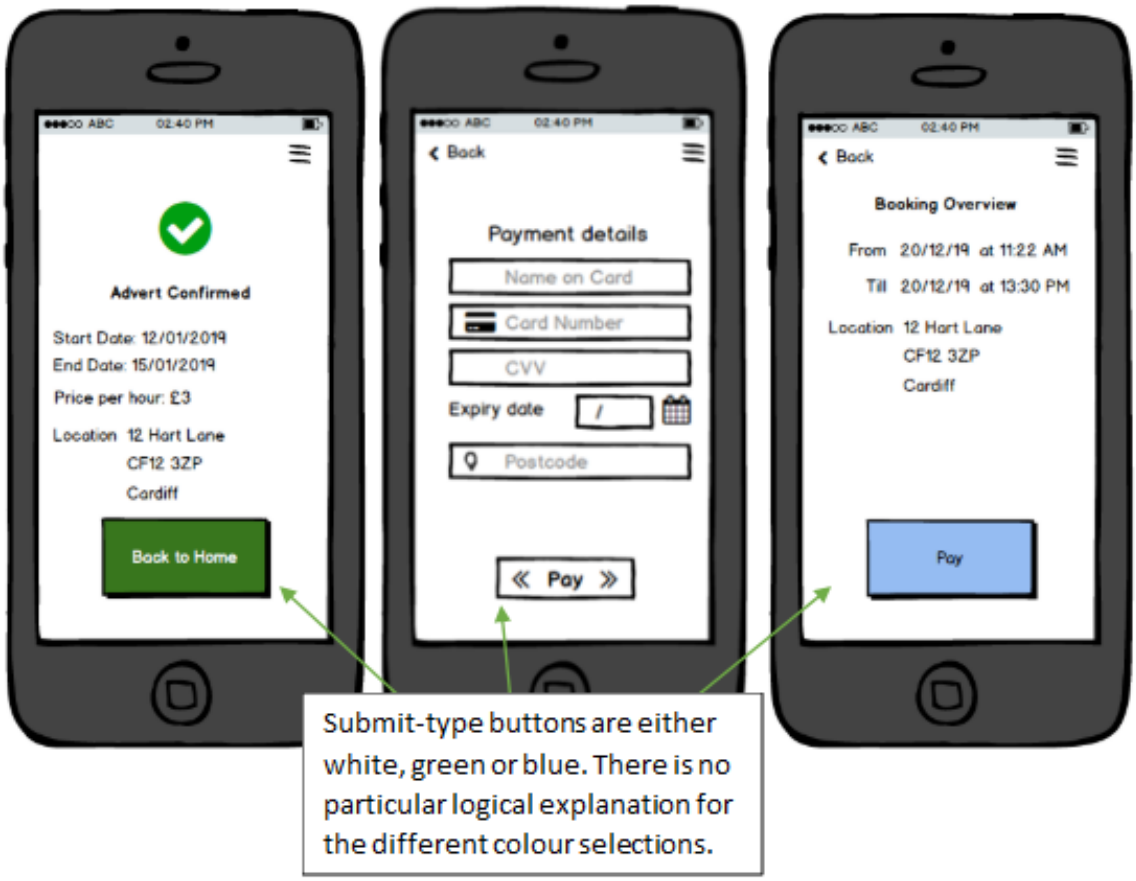
Problem

The styling of submit-type buttons is inconsistent throughout the application, but the text found in them is descriptive enough, so in general, a user could identify the correct button to press by reading its text. However, this requires the user to take some additional time to read the text, which could slow down a typical user session. Given that, this could be considered a minor

problem, rather than just a cosmetic one. This problem is based on two heuristics:

- Consistency and standards – Buttons are inconsistent with the rest found in the application.
- Recognition rather than recall – New app users could find it difficult to quickly recognise the correct button to press, prior knowledge of its position (and/or text) is required.

Evidence



Fix Recommendation

The easiest way to fix the problem would be re-theming the submit-type buttons, applying the same colour scheme for all of them.

Problem 8

8- Lyubomir Kyorovski	Lack of help message for payment card CVV code	1	2	10	UC2 3

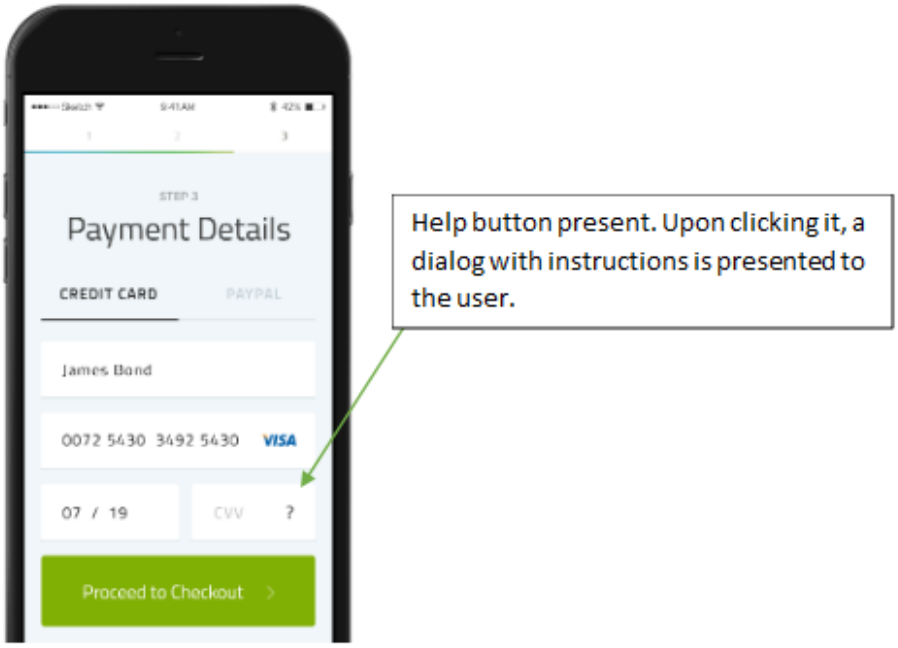
Problem

There is no help message available for guiding the user towards finding the CVV number of the payment card. Although most users probably have used their payment card before and are familiar with the placement of CVV number, there might be some that are not. This is an assumption about the user, a such should not be made (1). The heuristic violated is:
Help and documentation – No help message is provided for finding a piece of data that the user might not know the location of

Evidence

Fix Recommendation

A “What’s this?” or help icon button can be introduced, that displays instructions for finding the CVV on the different type of payment cards. This can be done like so:



1 *Example payment screen with CVV help button (2)*

Problem 9

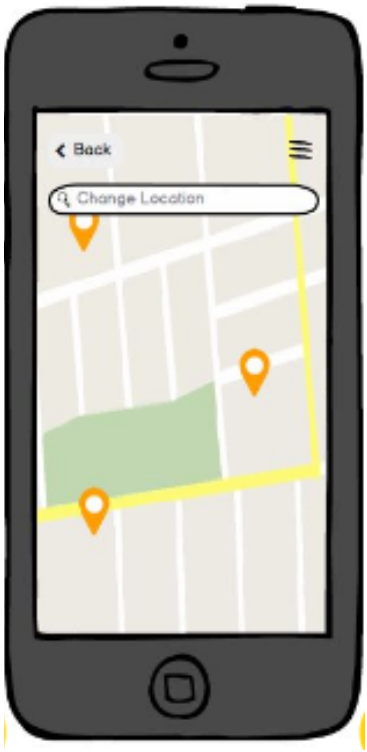
9- Alfred Rowett	Application lacks identity and is generic	1	2	1, 2, 4	All states

Problem

The application once passed the initial landing page/home screen lacks any real identity and nothing sets it apart from another generic application, it falls short it terms of being unique and without the use of it's logo on majority pages it's easy to forget what application you are using. The app should not only being providing a services to all of its users but also should be self-promoting through use of its own name and logo, however there is a distinct lack of real identity behind the work.

Evidence

As you can see in this image, the prototype page design is arguably minimalist and clear, but in some ways it just empty and lacks character which can make the use of the application boring.



Fix Recommendation

The simple addition of the company name or logo would make all prototype designs more unified and interesting, another suggestion could be the use of a character (cartoon for example) that sits on the map and shows users around making the whole process more interesting and unique.

Good implementations in the application

Although, there were numerous problems found in the prototype, our group has also identified several good implementations within the app that made the application easier to use and should be kept in the final design.

Number	Good Implementation	Heuristics honoured
1 –	Minimalist design that is consistent across the prototype	4,8
2 –	Use of placeholders	2,5
3 -	Back icon and visibility of the system status	1,3,9
4 -	Styling of the interface components	2, 6
5 -	Effective map layout	7

Good implementations in the application 1

Caitlyn, Ondrej

Number	Good Implementation	Heuristics honoured
1 –	Minimalist design that is consistent across the prototype	4,8

Good Implementation: The design of the application is minimalistic with noticeable focus on the necessary features of the application. It is clean and uncluttered as no irrelevant information is offered on different screens so that the user can focus on the current screen in question. This honors the aesthetic and minimalist design heuristic. However, the features that remain across all states like the navigation drawer remain consistent in location which honors the consistency and standards heuristic. The overall design is also supported by the chosen color scheme with white background which again brings user's focus to the most important elements on every screen.

Good implementations in the application 2

Connor

Number	Good Implementation	Heuristics honoured
2 –	Use of placeholders	2,5

Good Implementation: The use of placeholders makes it clear for the user to know what is required in each field. This feature will lower the risk of human error which especially for something as important as for example payment information, is a very desirable feature. This implementation honors the match between system and the real-world heuristic as in the real world we are informed about the desired input as well as the error prevention heuristic as it does indeed conveniently prevent user errors.

Good implementations in the application 3

Harshit

Number	Good Implementation	Heuristics honoured
3 –	Navigation and visibility of the system status	1,3

Good Implementation: The UI design is familiar to the user which make it easier to understand the system. The 'Hamburger Menu' might not strictly follow the iOS guidelines and is not that widely used for iOS platform but its consistency across all the screens make the navigation around the app significantly easier to use. This honors the user control and freedom heuristic as the user is able to navigate freely and easily.
The use of 'back icon' is also consistent across all the screens and even follows the iOS standards while also making the screens easier to use. The visibility of the system status is the user is generally aware of the state of the app in which he/she is. This honors the visibility of the system heuristic.

Good implementations in the application 4

Ondrej

Number	Good Implementation	Heuristics honoured
4 -	Styling of the interface components	2, 6

Good Implementation: The application uses interface components which are easy to use as their purpose is clearly visible. This is seen in the use of many iOS standard elements as well as clear icons which hint at the actions of each UI component. Furthermore, the styling of the buttons on the screens with surrounding shadow around the buttons signifies click ability. These should be preserved as the user will be familiar with the set of controls and styling of the app which makes this screen easier to use. These implementations satisfy the match between the system and the real world and the recognition rather than recall heuristics.

Good implementations in the application 5

Bartosz

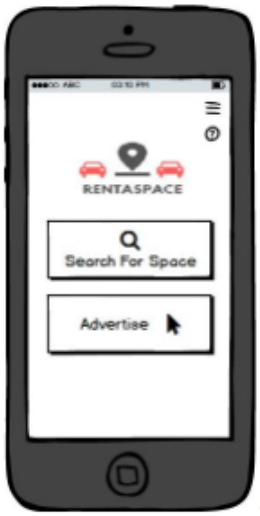
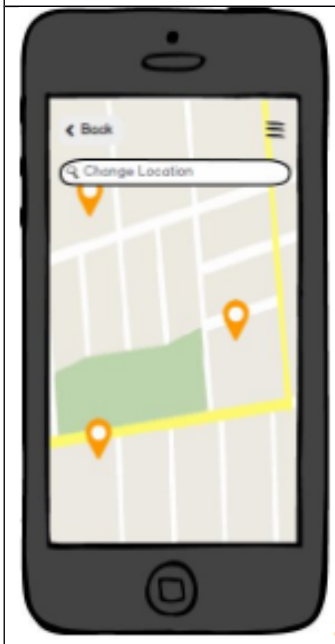
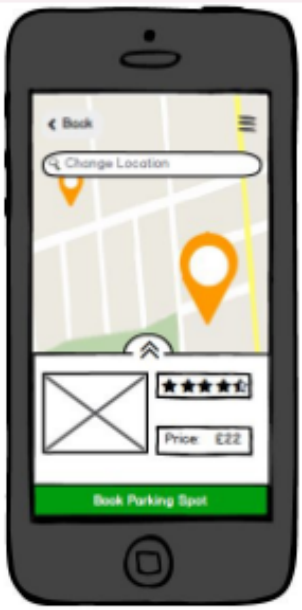
Number	Good Implementation	Heuristics honoured
6 -	Effective presentation of data	7

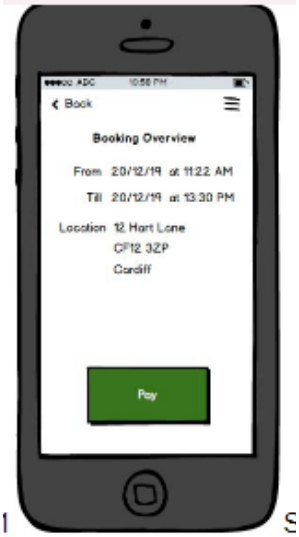
Good Implementation: The application makes good use of presenting information to the user. It is responsive as well as intuitive which can for example be seen in the implementation of map view in several screens. The map view's feature to display information about a selected place on the map within the same screen is very effective as the user does not have to navigate to a separate screen. This honors the flexibility and efficiency of use heuristic as it saves user's time.

Summary

This current version of the RentaSpace prototype has a lot of strong elements that suit the needs of the application and help its users, however equally it falls short in a number of areas that would mislead and confuse a user on the application. The good thing however was that for the most part, any issues that we did find during the process of this evaluation were minor and required minimal change to result in huge improvements to the app. Therefore overall, Group 7 made a strong prototype that is working in its current state, but with some inconsistencies and lack of efficiency and help hold back the application from its full potential.

State	Good points	Bad points

	-Centred nicely in the middle of the page with all lines matching up. -Use of icons is useful and recognisable to the user from the real world. -Logo provides context and relates the application back to the company immediately -Help and documentation is available immediately in the menu	-The navigation bar is located in the wrong place on screen and it uses the android design themes rather than the planned for iOS guidelines. Navigation should always be located a the base of the page in iOS.
	-Map is clear and identifiable with those used in the real world. -Orange is a friendly colour for the icons combining the energy of red and happiness of yellow to create a joyous and enthusiastic appearance to the user. -Map is clear of any clutter that could obscure important areas/information.	-Much like many of the pages, this prototype design lacks any company identity and uniqueness. Needs the addition of a USP (unique selling point) or logo to provide an identity rather than a simple map.
	-Clear layout of all the information regarding the parking space. -Concise and lacks clutter to confuse the user when reviewing the space information. -Green colour scheme is appealing and invites to book. -Rating system is a clever idea that aids in the persuasion of users to book this particular parking spot.	-The icon to swipe up/down to display and hide the information is again the android “hamburger” design rather than the sleak single line used on iOS platforms. -The details of the space lack the information on location of the space and skip straight to a description and cost etc.

		
 	-Clear and understandable text that shows concise information regarding the booking. From this alone it is hard to get confused. - The user still has freedom of control and can cancel the booking by returning to the prior page.	-Two different pay buttons within the same checkout process are completely different in design, feels disjointed and looks unprofessional. -When the user finally reaches the card payment screen they are also not faced with any help regarding the format in which they need to enter any of the information. The user must rely on the weak error messages for help and feedback on the isssues.

	-Alignment of all the elements on the page is strong and keeps the user's attention on the important information (area of the screen). -The addition of the logo identifies the company and solidifies it in user's memory making it more memorable and friendly.	-Colour scheme is inconsistent and should not vary between buttons on the same page, especially between two drastically different colours.
	-Further use of the RentaSpace logo is strong branding and friendly to the user. -Further alignment for all elements on the page continues with precise and clean appearance of the page	-Lacking in a remove image feature. -The user is only able to add images one at a time which is inefficient, further worsened by the fact that they can't seemingly change the order of the images.
	-Error messages grey out the background to pull attention away to other information and highlight the error further. -Errors are designed in the iOS theme with the guidelines in mind creating a clean and clear message that many users will understand and recognise as similar to ones they may have seen before.	-Lack of any real detail in the error can result in confusion (error caused by invalid input, empty field or other?). -No documentation or help other than the error message itself. Requires the user to remember what has been input up to this point. -Once the error has dissapeared you can't go back and look at the error code for further details/help.

References

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