Room Picker

Pitch Document · Leilah Birchall

Contents

3 Overview

4 Key Selling Points

5 - 8 Competitor Analysis

9 - 11 Design

12 - 16 Functionality

17 Gantt Chart

18 - 19 Risk Analysis

20 Fee Breakdown

21 References

Overview

Making a decision can be hard for some people, and when put into a group situation, this process can be made even harder with an inclusion of differing opinions or clashing personalities. Groups, such as university students or professionals in a house share, may find that they face this challenge when they have to distribute rooms when they move into a shared property.

Room Picker is an app to elevate the stress of this process. It is a small-scale, disposable app designed for this specific process. Although it is disposable, hopefully users will return to the app when they need to make these possibly annual decisions.

3 options will be available from the app to help make their decision: recreating a real-life act of randomisation, the 'name out of a hat' scenario, and a discrete version of this via email, along with a calculation of fairness depending on individuals' first, second and third preferences. After choosing an appropriate option, individuals will be able to input the names of people in their property, to gain the output of an unbiased and fair final result.

The app will be particularly beneficial to individuals who are unable to physically get together to make their decision. The process can be completed solely through one mobile device, or via access to an email provider; enabling people to cross psychical and social boundaries in the way that technology now allows.

Key Selling Points

Competitor Analysis

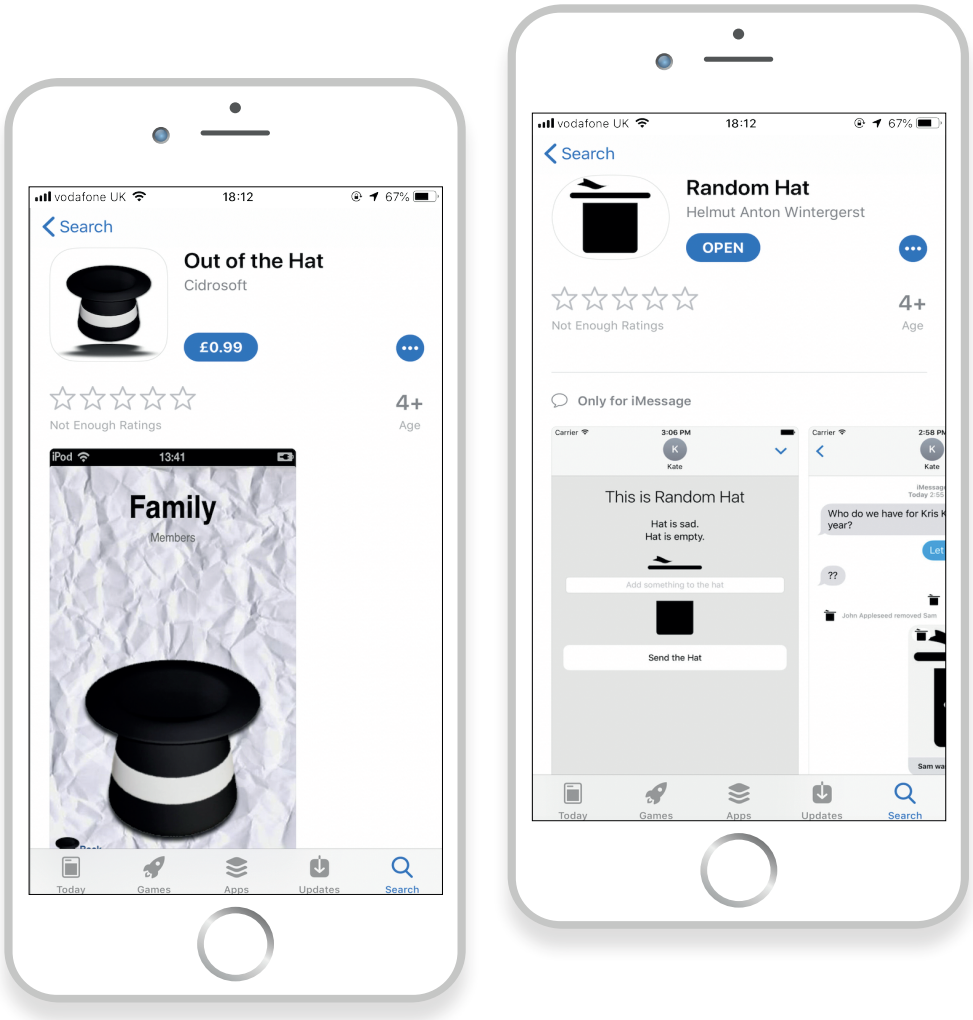
Out of the Hat and Random Hat

When searching the App Store for “Names out of a hat” 3 results appear, but only 2 directly link to the act - Out of the Hat and Random Hat.

Out of the Hat requires an immediate purchase, not allowing for the user to know if the app is appropriate for them. It is highly likely that users will want to pay for an app they might only use once. Furthermore, the app does not provide a user with much confidence in it being a good app, as it does not have any stars for its reviews, and the reviews it does have are 2-6 years old. Only one screenshot is supplied of the app, showing an image of a hat. Presumably this is the screen that displays when the names are being drawn, however it is difficult to tell, as it shows no additional functions.

From the images supplied on the App Store for Random Hat, it would appear that this app is supposed to utilise iMessage to distribute the names from the hat. This feature has the potential to be impressive, however the app never actually opens on the phone, although it shows to be downloaded. No instructions are given on how to use the app and the only review left is by a user also claiming that they could not open the app.

Therefore, the apps available for a ‘drawing names out of hat’ scenario are extremely limited on the App Store, justifying that Room Picker would be a useful tool with little competition. However, as there are other random generators available on the App Store, these can also be considered in further competitor analyses.



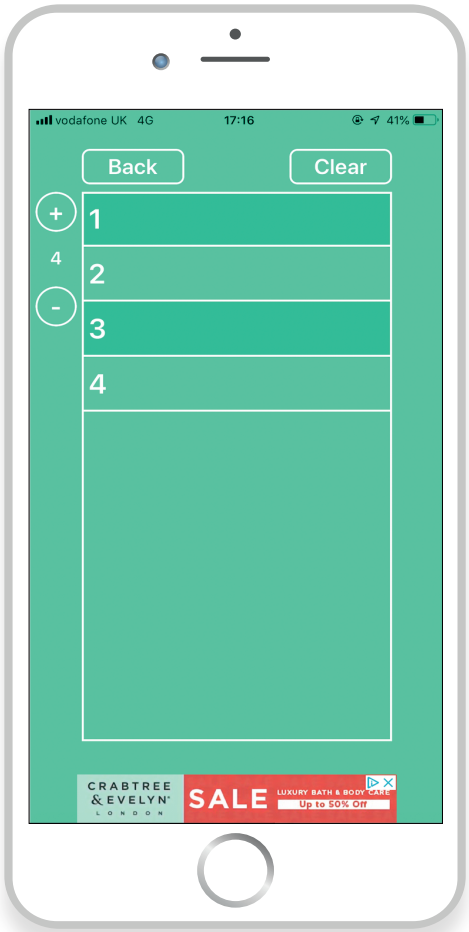
Competitor Analysis

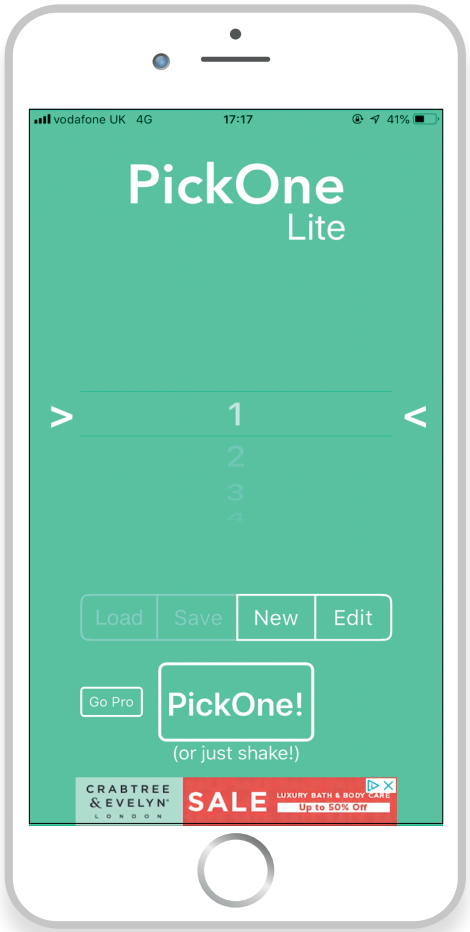
PickOne

When first downloading PickOne Lite, there are no instructions for the user. However, the only button lit up is the 'Edit' button. So, after clicking this, users are taken to a screen to fill in a list of items that they want to appear in their draw. Next, users must click 'Back', which transfers back to the home screen. They can see their list in a mechanical reel-like design. Users are then able to click the 'PickOne!' button, or shake the phone, and one of their options is illuminated.

PickOne does the job it says in the name, it picks one option. However, it is limited to only this function. It is the first app to appear in the App Store when searching for 'randomiser', but it would be hard to utilise this app in a room picking situation. An option from the list can appear multiple times in a sequence of clicks, therefore, this would complicate the process and possibly frustrate a user if the same number keeps appearing.

Furthermore, the design generally looks appealing. Using a SensorListener to detect the shake activity also adds some excitement to the small-scale app. However, it appears partially flawed when users are filling in their lists. Clicking 'Back' when a list has been filled in may mislead some users, as it does not seem to register that the list is complete.





Competitor Analysis

ChooseForMe - Random Choice Maker

ChooseForMe is another random generator that appears second in the App Store. It has mostly strong reviews for having no bugs or glitches. When it is first downloaded, users open it to see a brief loading screen, presumably of the app maker's logo. An advert then instantly covers the full screen. After the timer has finished on the advert and it disappears, users then see a blank screen replicating a list, in a similar design to the 'Notes' app produced by Apple.

Particularly, as it is a familiar looking screen to Apple consumers, users know that they must click the '+' at the top right of the screen to add items to their list. After filling in their list and giving it a name, users can save their list which then takes them automatically back to the home screen. Users must then click the 'Choose For Me' button to display an option in a pop-up style box. They can continue to repeat this process.

The app is very simple, and even though it is very easy to use, it looks and feels rather bland, with not a lot to offer. Furthermore, the initial branding that users see does not look very professional or related to the app's purpose. Similarly to PickOne, it would be difficult to use this app in a room-picking situation, as an option can appear multiple times in a sequence of clicks.

The pop-up adverts are also quite obtrusive for the user, as they take up the whole of the screen and do not allow for the user to do anything until the timer is ready. This has been highlighted as a nuisance to some in the reviews.

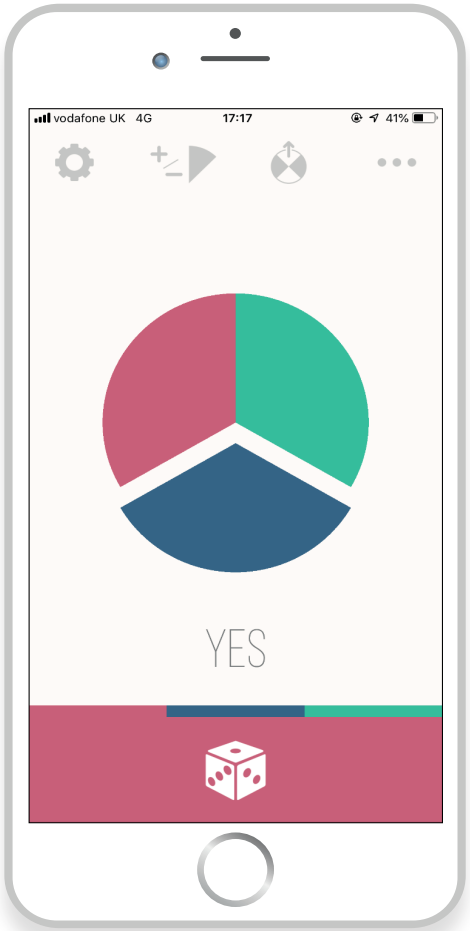
Competitor Analysis

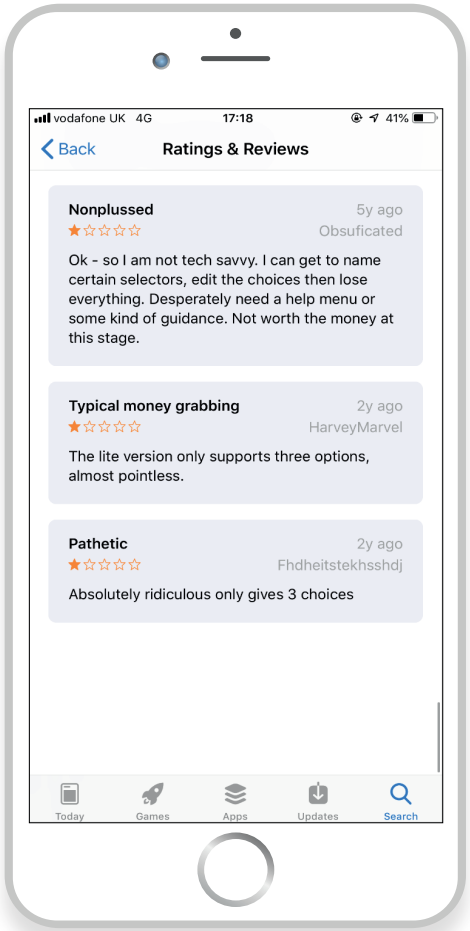
Roundom

Roundom is another competitor for Room Picker. Initially, users are shown a pie chart with the options 'Yes', 'No' and 'Maybe' automatically stored. Users can change the names of their options and alter the number of sectors by clicking the plus/minus pie symbol. After clicking the arrow symbol, users are taken back to the home screen where they can click the dice button and a section is taken out of the pie to highlight the chosen option.

The design of the app is particularly impressive, and certainly the best out of the competitors. The functionality also seems superb with no noticeable bugs or glitches. However, after examining the reviews, it would appear that those who are not so tech-savvy do struggle to use it. The app does not provide any instructions or a help section on how to use it. Therefore, without knowing what all of the symbols signify, understandably, it could be quite difficult for some users to navigate themselves around.

Nonetheless, the app provides a pleasant user experience through not being overburdened with adverts across the system. The app provides some excellent preset ideas (e.g. takeaways, home cooking, weekend activities) on what a user may want to decide about. However, these are only available to users if they pay the premium price, suggesting why the app does not need the adverts elsewhere.





Design

Psychological effects are often linked to colour and design choices by many academics. Therefore, to comply with these theories, blues have been elected for their "calming effect" (Kurt and Osueke, 2014, p.3) and their ability to "stimulate clear thought and ... calm the mind and aid concentration" (Kurt and Osueke, 2014, p.4). Because it is anticipated that the situation might be tense, these colour choices can attempt to maintain a relaxed ambience. These specific colours were selected with assistance from the *Adobe Color Wheel* from the monochromatic selection.

As the app is foreseen to be a 'disposable app' - one built for a specific process and with a short retention expectancy (Wyk, 2014) - the app's design will be simple, but effective, to ensure that costs are not wasted on a complex design, but a pleasurable user experience is maintained.

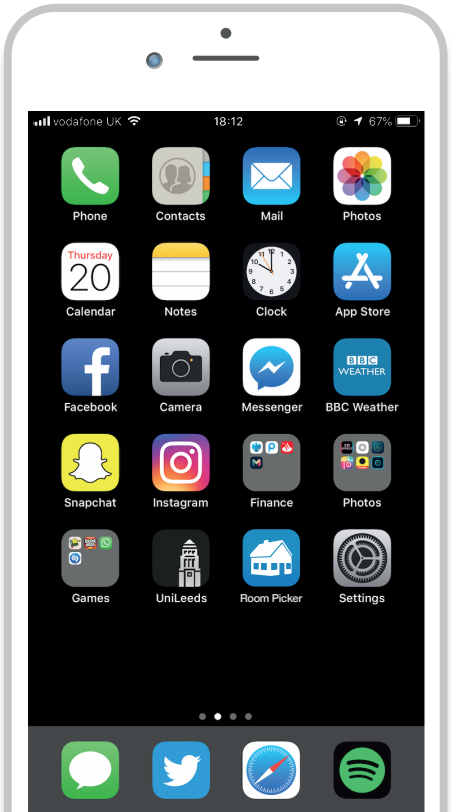
The san-serif font, Asap Condensed, has been chosen for its clean and readable appearance. As it is a Google font, it is 100% free for commercial use and a fully licensed web font, meaning that there will be no issues implementing it across the system.

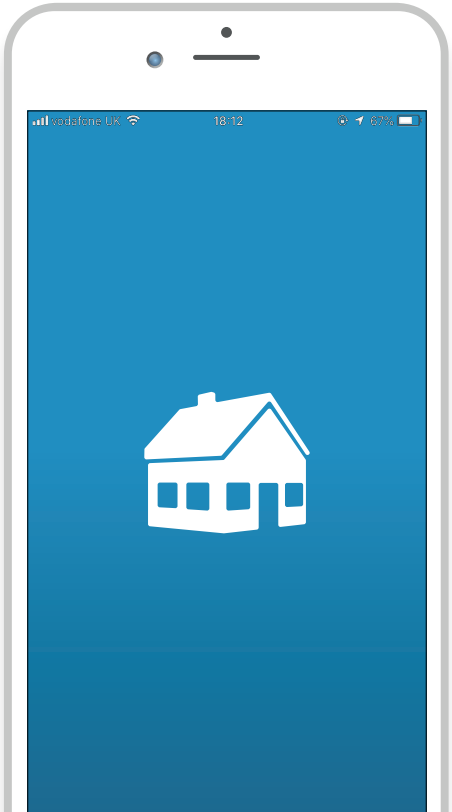
Asap Condensed Regular

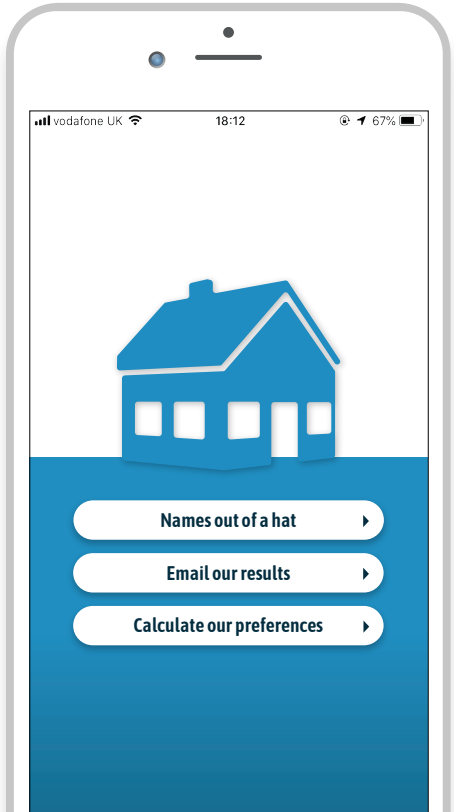
Asap Condensed SemiBold

#083041 #12688E #168fc2

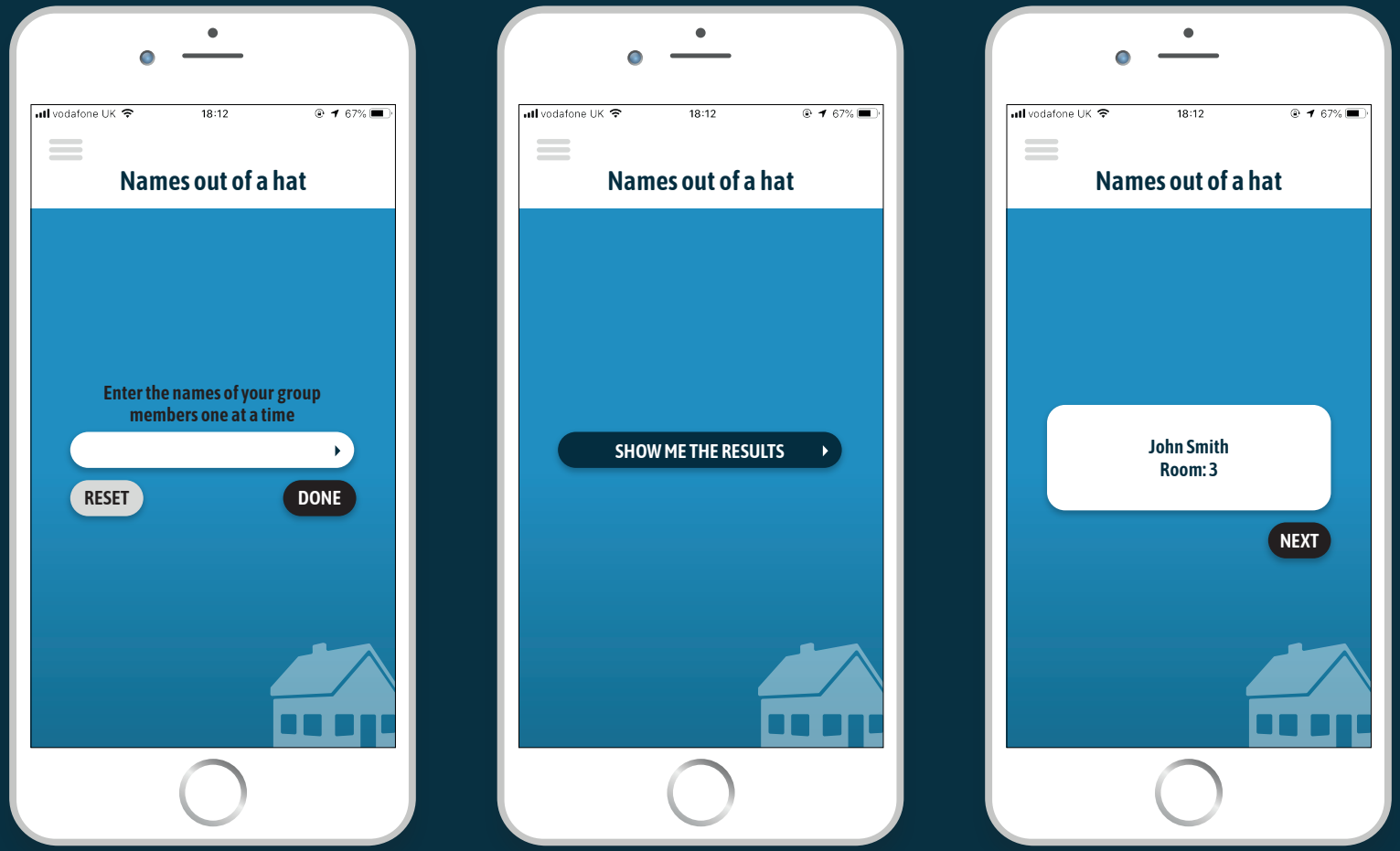
#e0e0e0 #ffffff



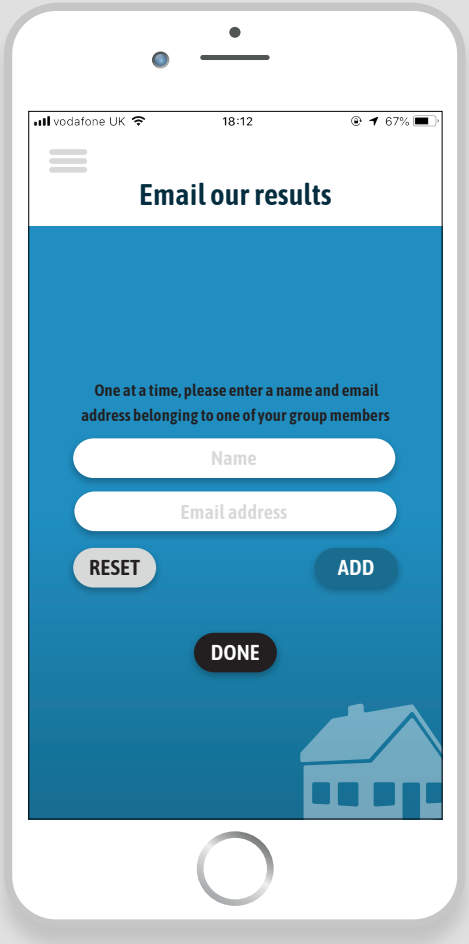


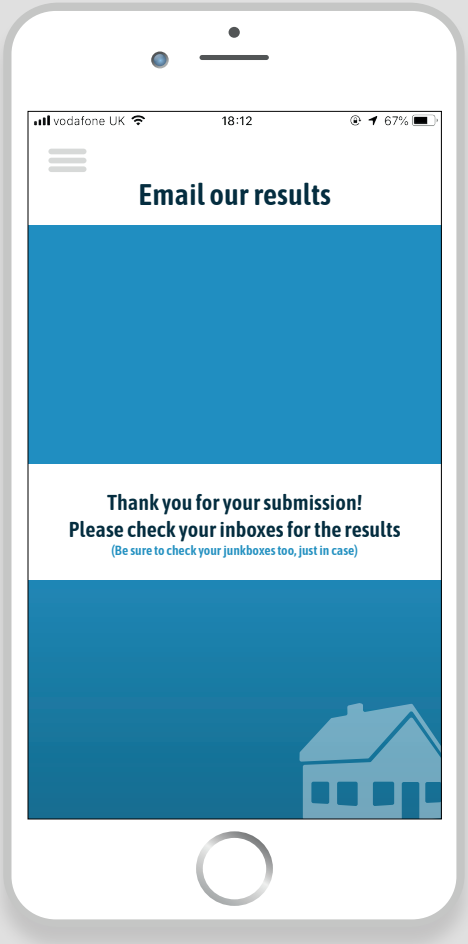


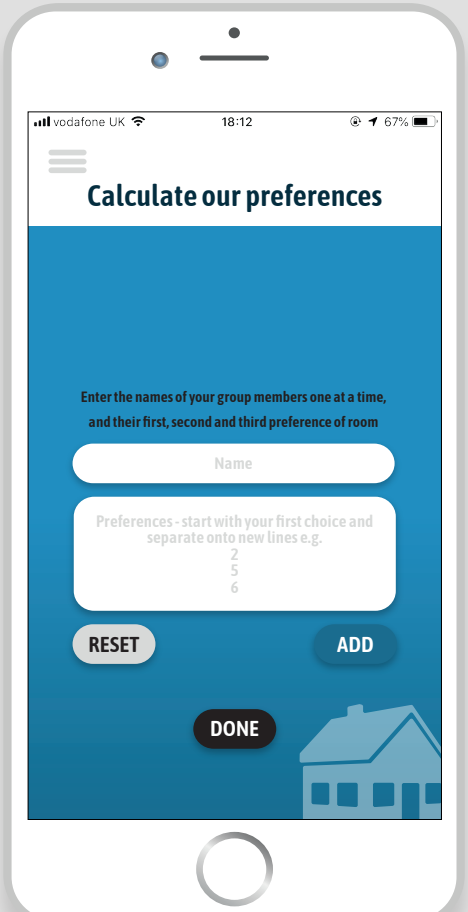
Design OPTION 1

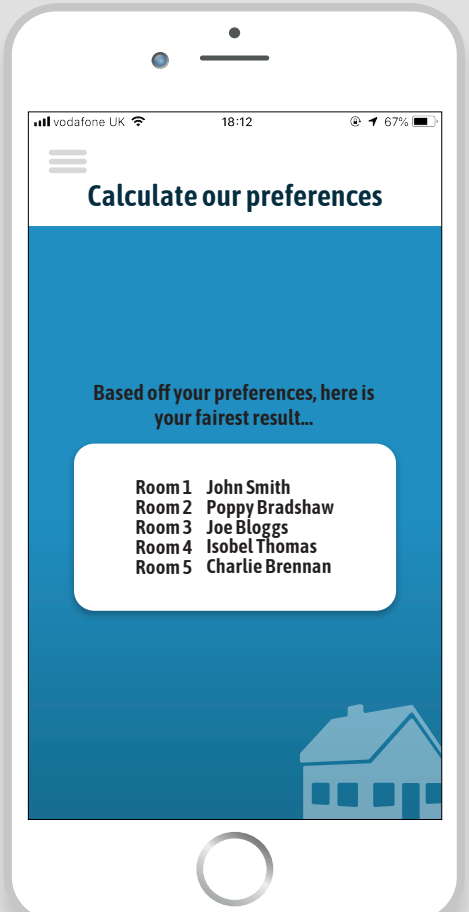


Design OPTION 2







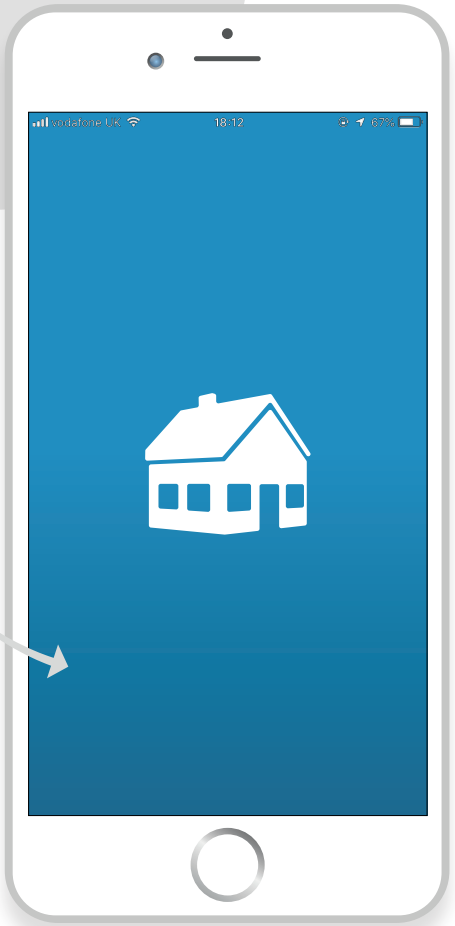


OPTION 3

Functionality

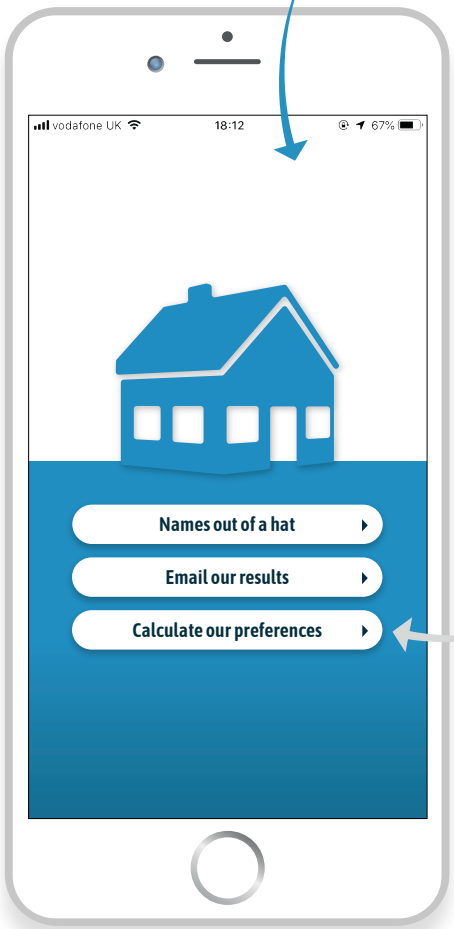
Users are not required to make a login for this app, and their data will not be stored anywhere within the app, allowing them to feel confident that their inputted information is always confidential.

Attractive splash screen for the loading period, to familiarise users with the app branding and engage them on their initial download.



Instruction screen for first-time users on the launch of the app, to enlighten them about Room Picker and what it entails.

Simple, clean and clear home screen to ensure the app is not quickly abandoned by the user for not understanding what they have to do.



Small arrow characters on the buttons to accentuate that the elements are buttons.

Functionality

Option 1 uses only JavaScript code to produce its outcome.

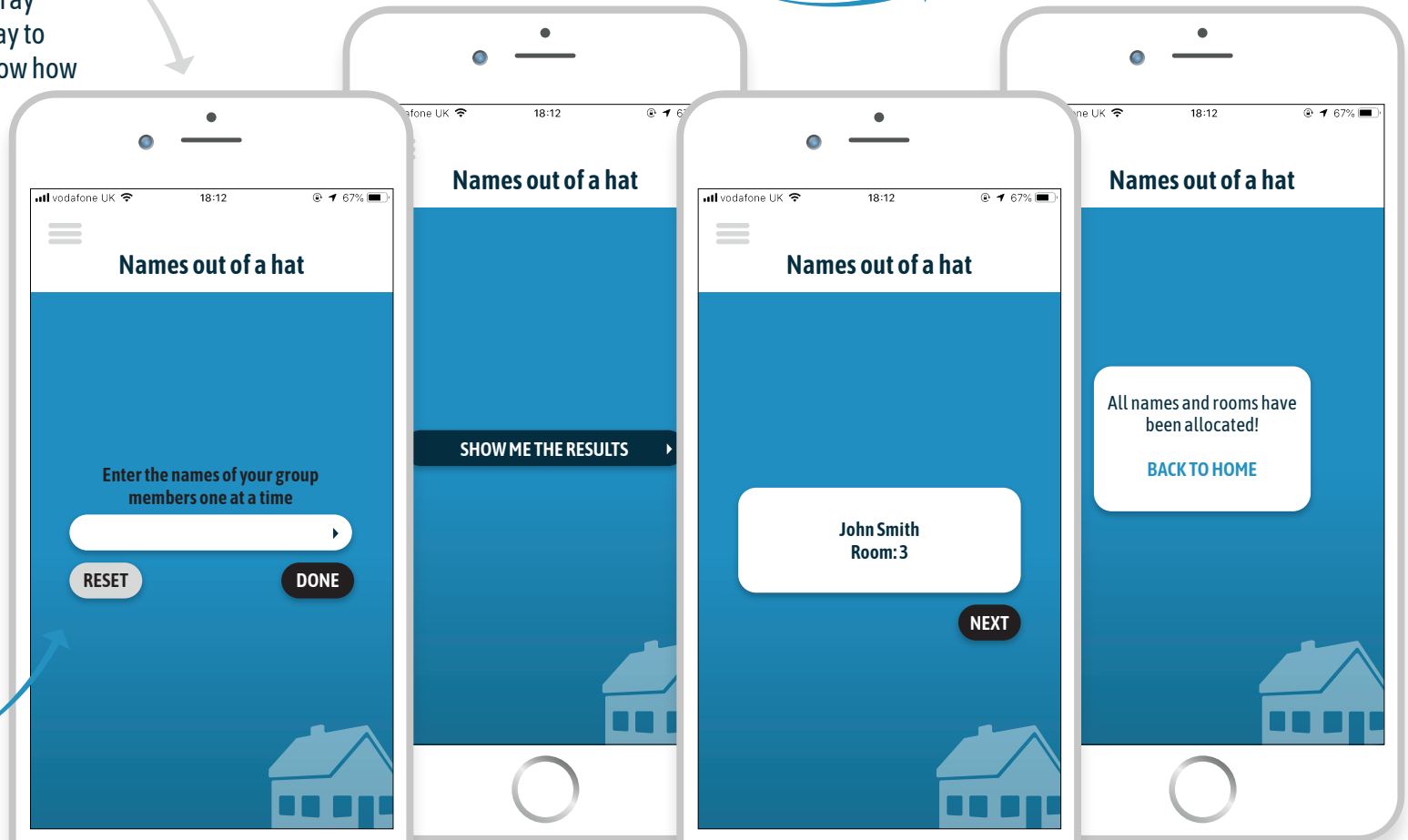
There are several apps available to replicate a randomisation process. However, these apps do not eliminate numbers that have already appeared, you may 'pick' the same name twice. Room Picker does not do this, it takes out the names that have already appeared, to ensure that there are no repeats, biases or errors in the results!

Names are inputted by the user, then once the user is finished and presses the 'Done' button, JavaScript code counts the number of names in the array and produces another array to replicate the length, to know how many rooms there are.

From the two arrays, a random name is then matched with a random number and displayed on the screen in the results section.

The name and number are then filtered out of the array, so that eventually when all names and numbers have been paired, the process stops.

'Reset' button if the user makes a mistake when entering their values to clear the array and start again.



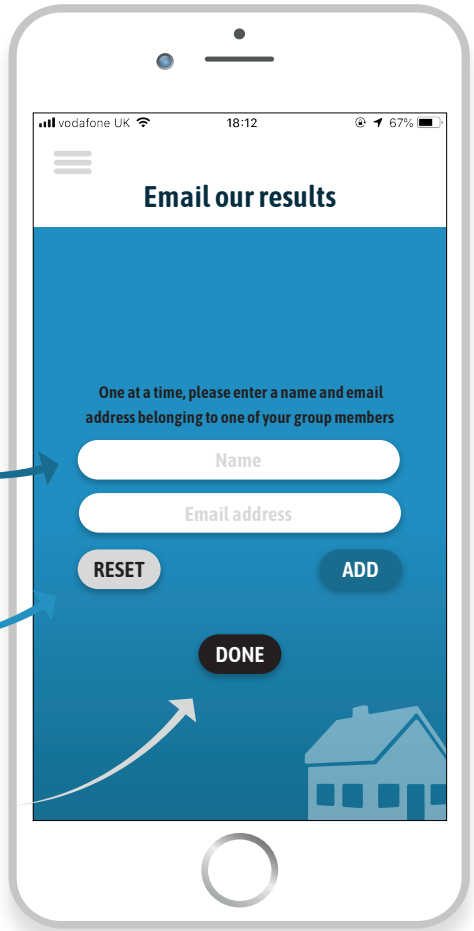
Functionality

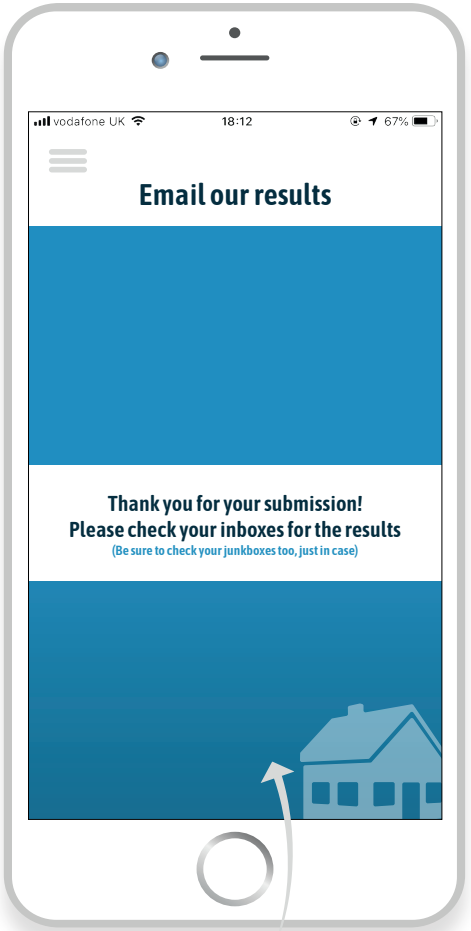
One user inputs the names and email addresses of the group members individually, which are then pushed into two separate JavaScript arrays.

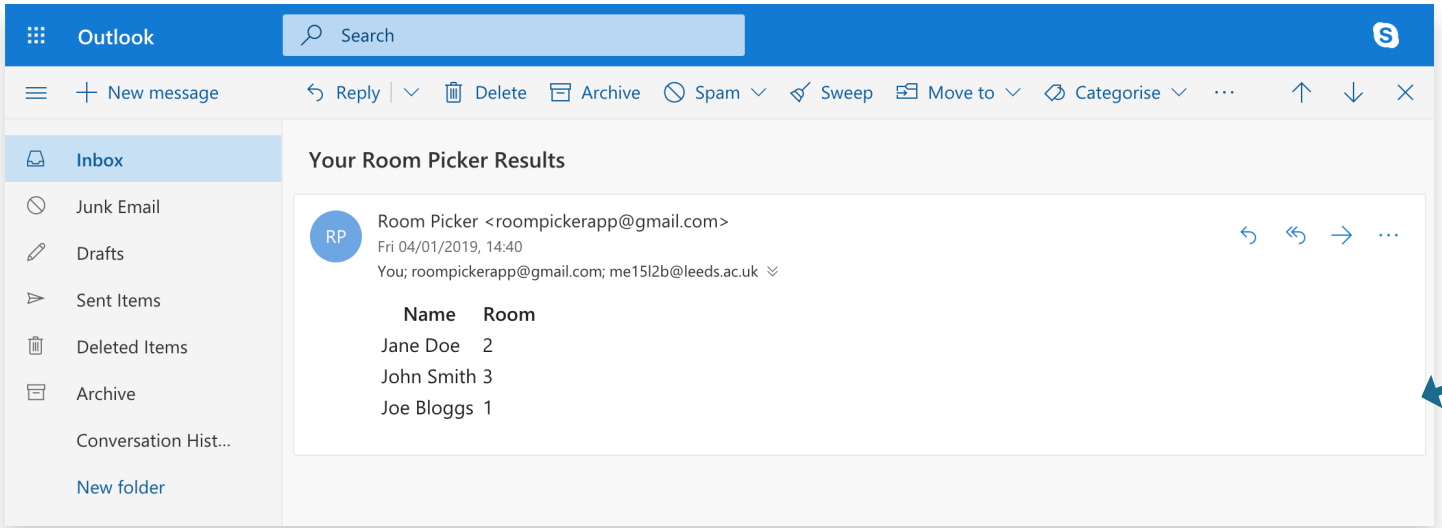
Users are able to clear their entries by using the 'Reset' button if they need to.

Fetch URL would need to be altered when hosted onto a new or live server.

The 'Done' button replicates the number of entries made into another array to know how many rooms there are. In a new function, it uses a Fetch API request on MAMP's local server to convert the JavaScript arrays into JSON, that can then be passed into the PHP file.







An email is sent to the recipients, using PHP through the GMail SMTP Server.

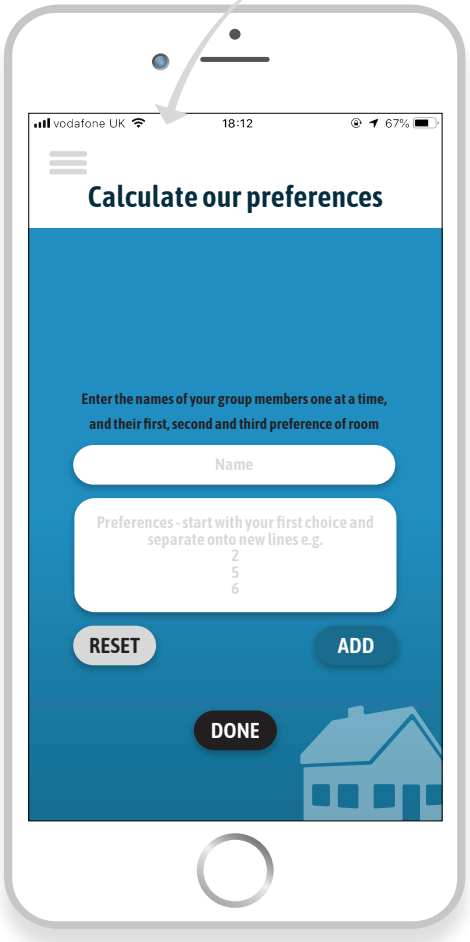
Functionality

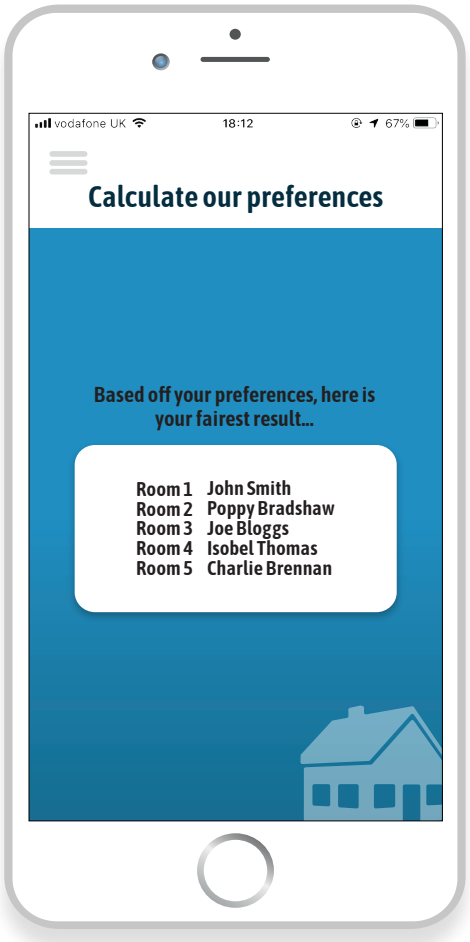
```
RoomPicker — -bash — 80×24
:app:processDebugJavaRes NO-SOURCE
:app:transformResourcesWithMergeJavaResForDebug UP-TO-DATE
:app:validateSigningDebug
:app:packageDebug UP-TO-DATE
:app:assembleDebug UP-TO-DATE
:app:cdvBuildDebug UP-TO-DATE

BUILD SUCCESSFUL in 1s
48 actionable tasks: 1 executed, 47 up-to-date
Built the following apk(s):
        /Applications/MAMP/htdocs/RoomPicker/platforms/android/app/build/outputs
/apk/debug/app-debug.apk
ANDROID_HOME=/Users/leilah/Library/Android/sdk
JAVA_HOME=/Library/Java/JavaVirtualMachines/jdk1.8.0_191.jdk/Contents/Home
No emulator specified, defaulting to Nexus_5X_API_27
Waiting for emulator to start...
emulator: Requested console port 5584: Inferring adb port 5585.
Failed to execute shell command "getprop,dev.bootcomplete"" on device: Error: ad
b: Command failed with exit code 1 Error output:
error: device still authorizing
Leilahs-MBP:RoomPicker leilah$ emulator: Saving state on exit with session uptim
e 32555 ms

Leilahs-MBP:RoomPicker leilah$
```

Apache Cordova utilised through terminal to wrap up the HTML, JavaScript/jQuery and PHP files to convert into a hybrid app for IOS and Android.

Java would be used to programme this sophisticated algorithm.

JavaScript fold out navigation bar so that users are able to select a different option, or go back to the home page if they wish.



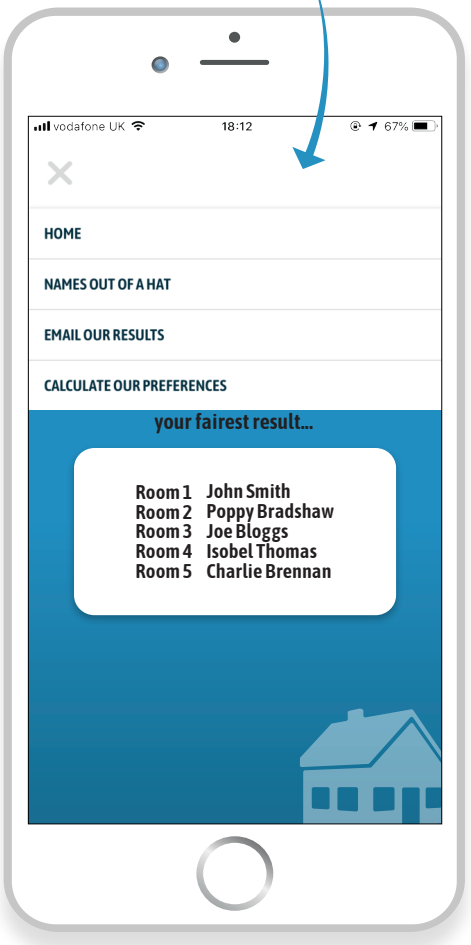


Known as the 'stable marriage problem' in mathematics, the 'Gale-Shapely' algorithm guarantees that for an equal number of items in separate categories, matches can be based on preferences.

"An instance of the stable marriage problem consists of a set U of N men, a set V of N women, and a preference list for each person, that is a weak linear order (ties are allowed) on some members of the opposite gender" (Király, 2011, p.4)

However, the Room Picker's algorithm would be an extension of this. Alike to the lesser-known 'Hospitals/Residents problem', where only one of the groups has a preference (the users). The other group (the rooms) would have an equal preference.

Rooms can then be distributed considering the order of user preference.

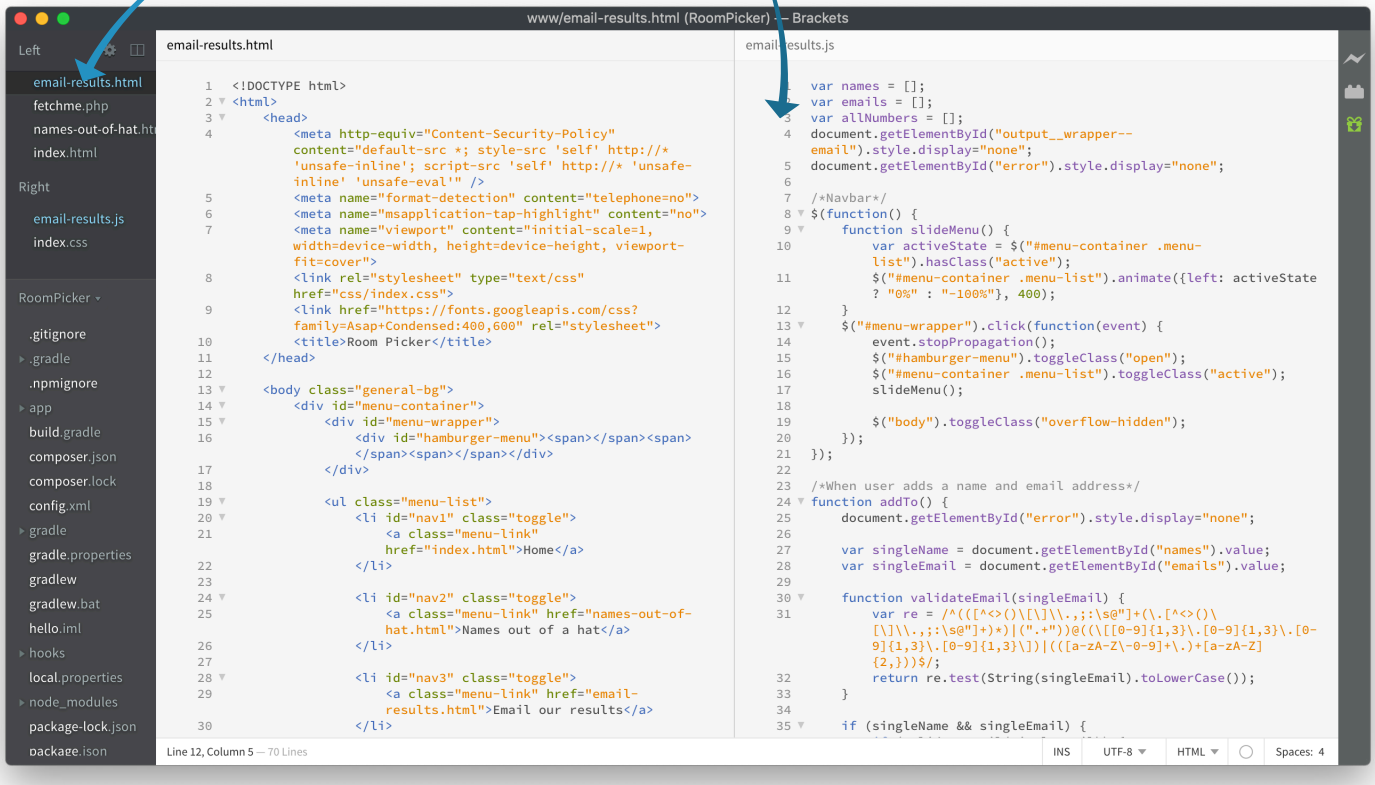


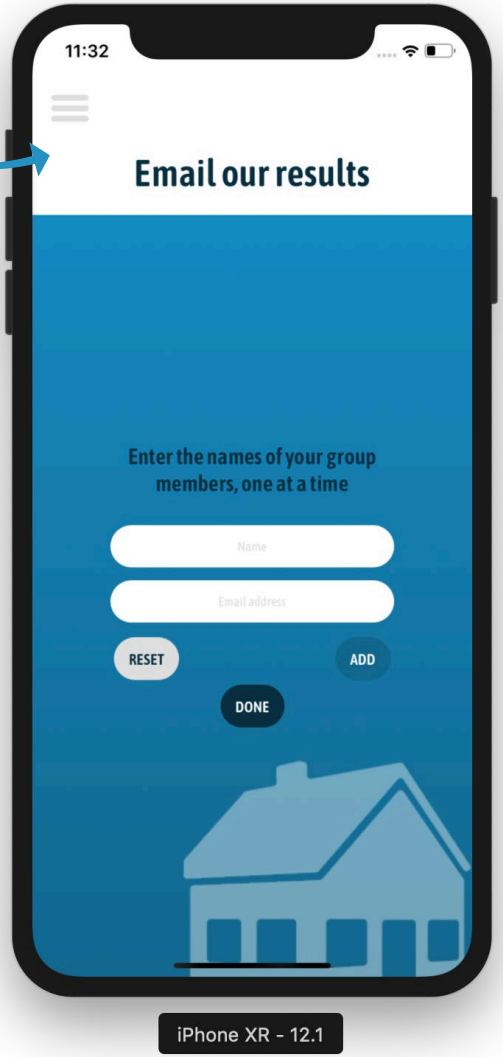
Functionality

Adobe Brackets used to write the HTML, CSS, JavaScript/ jQuery and PHP code for all platforms.

Example of the working code for option 2 of choosing names out of the hat, using HTML, CSS, JavaScript/jQuery and PHP.

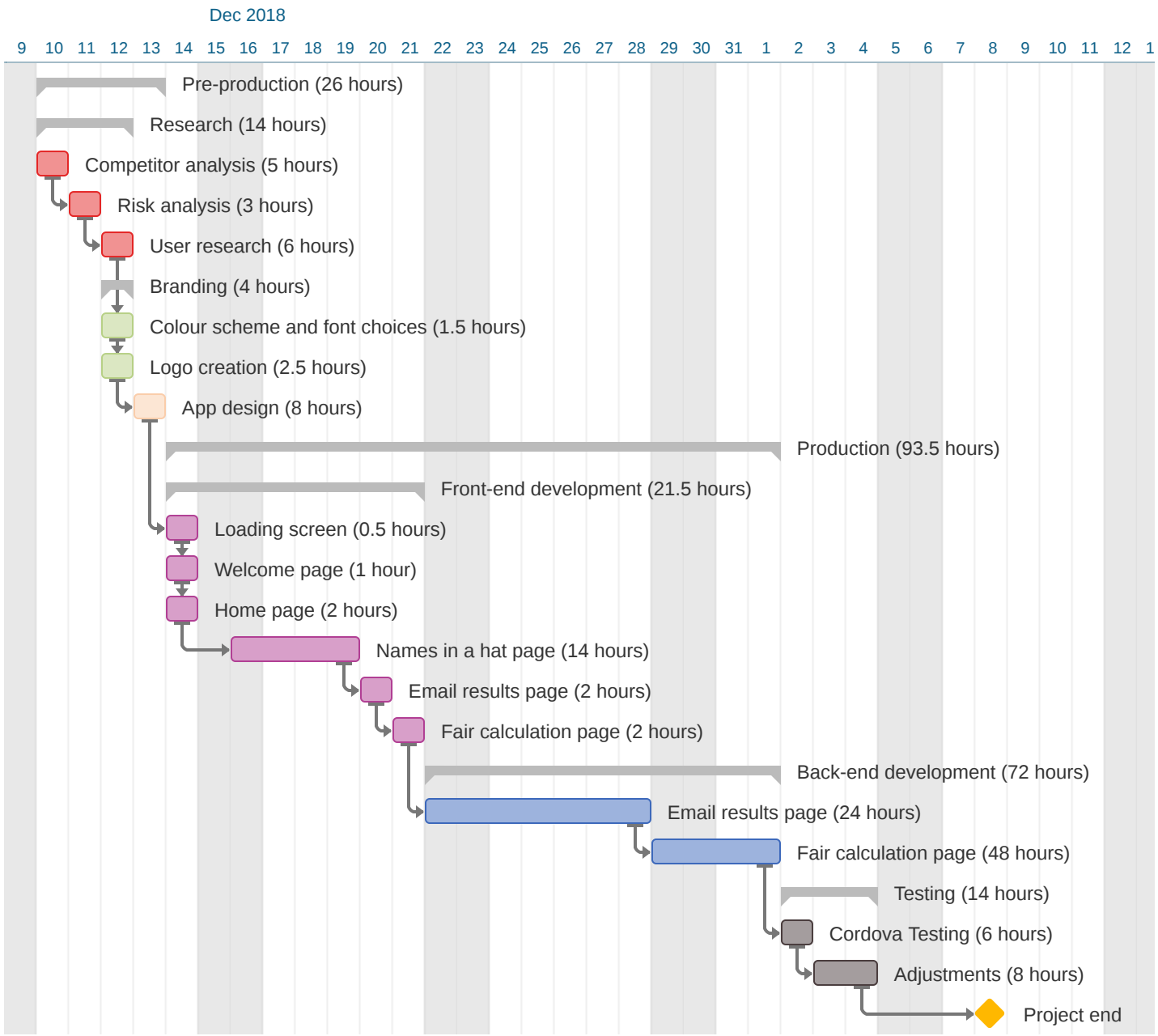
Simulator then utilised through Xcode for IOS device, and via the command line for Android, to envisage the app.





iPhone XR - 12.1

Gantt Chart


Dec 2018
9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 1 2 3 4 5 6 7 8 9 10 11 12 1
Pre-production (26 hours)
Research (14 hours)
Competitor analysis (5 hours)
Risk analysis (3 hours)
User research (6 hours)
Branding (4 hours)
Colour scheme and font choices (1.5 hours)
Logo creation (2.5 hours)
App design (8 hours)
Production (93.5 hours)
Front-end development (21.5 hours)
Loading screen (0.5 hours)
Welcome page (1 hour)
Home page (2 hours)
Names in a hat page (14 hours)
Email results page (2 hours)
Fair calculation page (2 hours)
Back-end development (72 hours)
Email results page (24 hours)
Fair calculation page (48 hours)
Testing (14 hours)
Cordova Testing (6 hours)
Adjustments (8 hours)
Project end

Risk Analysis

Project Management

Risk	Impact	Problem	Solution
Overrun on the scheduled time for tasks.	●●●○○	Delays may occur and the app is not released on time.	Utilise the Gantt Chart and ensure that strict timings are adhered to.
Unrealistic schedule.	●●●●○	Going over the planned itinerary would result in an increase of costs.	Similarly, be strict on timings. If timings are exceeded, then consider cutting costs elsewhere.

User Risks

The app is not used and psychical solutions are resorted to.	●●●●●	The product is not embraced by the target audience.	Promote the app well through various means, and ask for reviews to rank highly in app stores.
The app would not be used regularly as it may only be a decision that people need to make annually.	●●●●●	Waste of development time and money.	Appreciate that it is a disposable app, so keep costs to a minimum and consider implementing advertisements to make money back from the app.

Risk Analysis

Design Risks

Risk	Impact	Problem	Solution
Users do not like the interface design.	●●●○○	App design is important for attracting app downloads and keeping users on the app.	Produce a clear and clean design that users can easily understand, whilst making it look modern, as users can quickly abandon apps that do not look up-to-date.

Technical Risks

App not approved by Apple App Store.	●●●●●	A large proportion of people would not be able to access the app.	Ensure that the standards that Apple require are complied with.
Lagging and bugs across the app.	●●●●●	The app would be no better than competitors. It could also result in a loss of users due to frustration.	Thoroughly test the app before launching.

Fee Breakdown

Equipment

£596.33 Adobe Creative Cloud
£240.00 Hosting by Google Firebase
£1,200.00 Apple MacBook Pro

= £2,036.33

Software Developer

£30.00 an hour
93.5 hours

= £2,805.00

Graphic Designer

£20.00 an hour
12 hours

= £240.00

Testing

£7.92 an hour from AWS
14 hours

= £110.88

TOTAL

£5,192.21

References

Királ, Z. 2011. Better and Simpler Approximation Algorithms for the Stable Marriage Problem. *Algorithmica*. **60**(1), pp.3-20.

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Wyk, A.v. 2014. Business Apps Are Becoming Disposable. 27 February. *Information Week*. [Online]. [Accessed 31 December 2018]. Available from: https://www.informationweek.com/mobile/mobile-applications/business-apps-are-becoming-disposable/d/d-id/1113952