Flatmate Finder UI – 'Flatty'

Sebastian G. Savu

1. Introduction

The following represents a step by step developing process to deliver a mobile solution to a targeted user group (in my case millennials) in order to facilitate and promote the uprising trend of flat sharing and to ease the process through which finding a flat mate is currently being offered in the online environment by creating and designing a brand backed by research and deep insight into the field of user experience and human computer interaction.

2. Background

2.1. Research

I have begun my study research in the domain by analyzing articles and journals related to the increase of flat sharing in recent times. I was able to discover that "there is a movement rising to bring housing back to the purpose it was intended for– connection. The past five years have seen an uptick in the number of millennials moving to cities, although the sudden influx in population has created lasting ramifications within the housing market" (Millenium,2018). It appears that millennials and young adults decide to adopt the idea of flat sharing due to a number of advantageous factors:

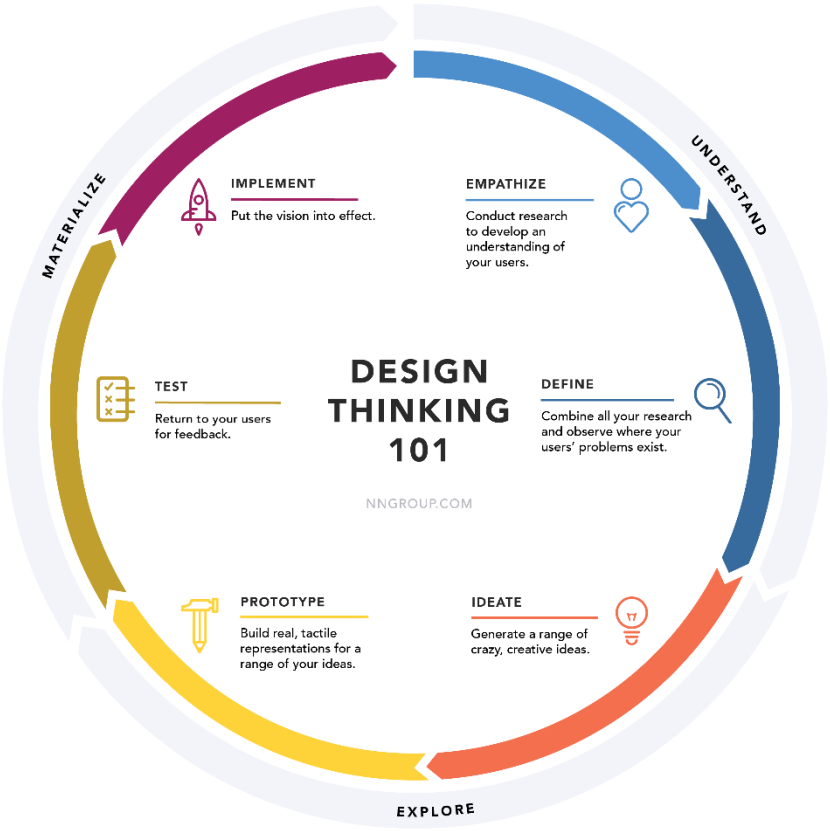
- "More Space"
  By living together, residents are able to access common areas and rooms which are way bigger than what they would be able to experience by living alone.
- "Fair Pricing"
  It is sometimes more affordable to split the cost of your flat rather than pay for one by yourself, allowing one to afford expenses which would otherwise be impossible eg. "super comfy (but expensive) sofa"
- "Environmentally Friendly"
  By using already available resources, there is no need in further expanding and meddling with the environment, indirectly discouraging the construction of new single studio flats.
- "Community-Centric"
  Living with other people "allows any individual to find a sense of belonging". It is often hard to keep communities together however, "from celebrating big wins to sharing a bittersweet moment, "home" is our central point of connection".

Further research into the topic was able to point out that "Millennials have been labelled "generation rent", as growing numbers of young people are renting their homes for longer periods of their lives than their parents' generation. Home ownership and social housing are increasingly out of reach for young people – a situation aggravated by the challenging youth labour market, rising student debt and welfare reforms, all of which make it more difficult for them to fly the nest and set up their own home" (The Conversation, 2019).

By now it is already clear that a solution for such demand needs to be implemented in order to maximize profit and deal with the uprising modern problem which millennials face – finding a flat mate.

A modern problem requires a modern solution, which is to create a medium through which millennials should be able to connect and become fellow flat mates. Thus, an online application is to be created in order to maximize popularity within the targeted user group. However, in order to create a good, reliable solution, I have conducted a study which should introduce me to key concepts and ideologies of a good user experience.

Regarding the process of design thinking I have encountered a framework explaining the design thinking process which I shall use to kick start my ideas. “The design-thinking framework follows an overall flow of 1) understand, 2) explore, and 3) materialize. Within these larger buckets fall the 6 phases: empathize, define, ideate, prototype, test, and implement” (S. Gibbons,2016).



In order to build a good, reliable design I have looked deeper into the definition and specifics of usability which “…is a quality attribute that assesses how easy user interfaces are to use. The word "usability" also refers to methods for improving ease-of-use during the design process” (J. Nielsen,2012). It is also while looking into the details of usability that I have come across an article describing how “Usability Is the Foundation for Delightful Experiences” (T. Fessenden, 2017). It has helped me understand how certain elements and factors can come together to offer a satisfying experience to the user.

“Deep delight is holistic, and is achieved once all user needs are met, including functionality, reliability, usability, and pleasurability. Deep delight only occurs when the user has reached a state of “flow” — that is, immersed productivity without much distraction from the main task. In other words, deep

delight is experienced when the interface behaves like a surgeon's knowledgeable assistant: it hands all the right instruments exactly when they are needed, without getting in the way" (T. Fessenden, 2017).

I have also had the opportunity to gain insight into the current issues raised by HCI in the modern era. "Intelligent User Interfaces is a HCI sub-field and its goal is to improve the interaction human-computer by the use of new technologies and interaction devices, as well as through the use of artificial intelligence techniques that allow exhibiting some kind of adaptive or intelligent behavior" (Alvarez-Cortes, Zárate, Uresti, Zayas, 2009). Some of the issues raised in this article where:

- "**Intelligent input technology**: It deals with the use of techniques to obtain user input to the system. These techniques include natural language processing (speech recognition and dialog systems), gesture recognition, facial expressions recognition and lip reading.
- **User modeling**: This research area includes techniques that allow a system to keep or infer knowledge about a user based on the received information as input.
- **User adaptivity:** It includes all the techniques to allow that human-computer interaction to be adapted to different users and different usage situations.
- **Explanation generation:** It deals with techniques and mechanisms that aims to explain to the user in a logical and understandable form the underlaying reasoning in an intelligent user interface.
- **Personalization:** In order to be able to customize a user interface usually most current IUIs include some kind of user's representation. User model, logs data about users behavior, his knowledge and abilities. New discovered knowledge about user can infered based on new input data and user-system historical interaction loggins.
- **Usage flexibility:** In order to remain flexible, a number of IUIs integrates user adaptation and computational learning. Adaptation is accomplished by using the knowledge stored in the user model and inferring new knowledge using the current input. Computational learning is used when knowledge stored in the user model is changed to reflect new found situations or data."

  (Alvarez-Cortes, Zarate, Uresti, Zayas, 2009)

Summarizing the elements brought in until this point, I have decided that I will be taking these factors into consideration when designing my application as to open further ways of improvement and enhancement in future development. Not only will this enable me to create an innovative design, but it will make the difference in terms of possibilities and advantages in the long term.

2.2. Guidelines and Standards

As for the rules to be used when creating my design, the range to choose from contains numerous principles, ranging from Shneiderman's "Eight Golden Rules of Interface Design" to Jakob Nielsen's heuristics from "Usability Engineering". Through my deep research in this topic, I have been able to identify and point out the key points which stand for the creation of a well-designed app:

1. Simplicity

“While the look and feel of your app is important, most visitors aren't coming to evaluate how slick the design is. Instead, they're coming to your app to complete some action, or to find some specific piece of information” (E. Devaney, 2016). Some examples of simplicity can be included in the way colors, typefaces and graphics are handled. Adding too many colors, cluttering, illegible typefaces are just some of the drawbacks users encounter in applications lacking simplicity.

2. Visual Hierarchy

Similar to simplicity, “visual hierarchy entails arranging and organizing app elements so that visitors naturally gravitate toward the most important elements first” (E. Devaney, 2016). For example, certain elements can be defined and adjusted in such a way that it will draw the user’s attention unconsciously.

3. Navigability

“Having intuitive navigation on your site is crucial for ensuring visitors can find what they're looking for. Ideally, a visitor should be able to arrive on your site and not have to think extensively about where they should click next -- moving from point A to point B should be as pain-free as possible” (E. Devaney, 2016). Some of the good practices which involve navigability are: keeping navigation to a maximum of three levels deepness, using breadcrumbs and trails so that users are informed of their navigation path, etc.

4. Consistency

Preserving a consistent design across all of your pages and tabs is at the core of a well-designed app. “Backgrounds, color schemes, typefaces, and even the tone of your writing are all areas where being consistent can have a positive impact on usability and UX” (E. Devaney, 2016).

5. Minimize data input to improve mobile app usability

“Mobile app designs should generally require the minimum possible data input from users. The main usability reasons for this are that data entry is – on most mobile devices – not very easy and requires significant time and attention. …some of the main defining characteristics of mobile devices mean that mobile apps are likely to be used within contexts where users’ time and attention will be in limited supply” (B. Logan, 2012). One such way that reduces user input is to offer the possibility of selecting items from a predetermined list instead of using text fields.

6. Break tasks into bite-sized chunks

“If a task contains a lot of steps and actions required from the user’s side, it’s better to divide such tasks into a number of subtasks. This principle is extremely important in mobile design because you don’t want to create too much complexity for the user at one time” (N. Babich, 2018).

7. Keep interactive elements familiar and predictable

“Predictability is a fundamental principle of UX design. When things work in the way users predict, they feel a stronger sense of control. How do users understand an element as a button? Form should follow function: The way an object looks tells users how to use it.” (N. Babich, 2018).

Out of the many points and guidelines to take into consideration while conducting this research, I have decided that I will be focusing my attention on implementing the ones I have already explained in detail above, as they represent key, distinct factors for the creation of a well-designed solution. Along with Shneiderman's "Eight Golden Rules of Interface Design" and Jakob Nielsen's heuristics from "Usability Engineering", the design principles I have managed to collect shall become standards for my application, clearly setting out the steps through which I will be reaching my goals.

3. User Groups

The targeted user group for this application are millennials as the requirement suggests. Through the thorough study research I have conducted into the targeted user group, I was able to identify numerous key points which regard trends, practices, traits and life orientations within the group:

- "…millennials spend 5-10 hours a day consuming copious amount of online content" (Morris Creative Group, 2019).
- "Creating a brand experience within this digital world with relevant content is the first step in captivating this generation" (Morris Creative Group, 2019).
- "Millennials want to reach a decision fast and on their own terms" (Morris Creative Group, 2019).
- "It's important to rebuild trust with relevant content and user-generated content" (Morris Creative Group, 2019).
- "This generation wants to know everything and with no arising surprises that could defer these planners from their paths" (Morris Creative Group, 2019).
- "Consider an interactive format where the audience engages with the material instead of just reading or watching" (Morris Creative Group, 2019).
- "…millennials are more impressed by stunning visuals and "highbrow" artistic advertising than other group (Ace Metrix 2014)" (C. Taylor, 2018).
- "Millennials are a social generation and they socialize while consuming (and deciding to consume) your products and services." (N. Howe, W. Strauss, 2003)

It can be generalized that millennials show interest in online applications which offer an interactive, visually appealing system that enables socializing and offers maximum transparency and feedback.

Thus, using this information I was able to create 2 distinct personas which adequately fit into the target group. For this task I am going to evaluate and take into consideration the everyday life and struggles of two millennial individuals: Ana and Jake.

Ana Smith

"Happiness is not the absence of problems, but the ability to deal with them"

Age: 20
Work: Student
Family: Single
Location: London, UK
Character: Modern

Personality

Introvert	Extrovert
Thinking	Feeling
Sensing	Intuition
Judging	Perceiving

Picky | Easily Confused | Clumsy | Hardworking | Methodical | Perfectionist | Sentimental | Ambitious | Harmonious | Fast-paced lifestyle

Goals

- Needs to find a flat and a flatmate
- Wants to finish university and find a job
- Wishes to live a calm and happy life
- Wants to be able to find a flatmate with common or similar interests as hers
- Wishes to make a good choice for her next home/flat as it means a lot to her

Frustrations

- She wants to minimize the process of searching for a flat/flatmate and all the hassle that comes with it
- It is hard for her to find a flat and a flatmate as there are little means to do so
- Available solutions are few and are not reliable
- The solutions and methods she has tried already were outdated and not modern
- She is always drawn back by the amount of information she has to remember or write down, wasting a lot of her time

Bio

Ana is a 2nd year student at the University of Greenwich. She is looking for a flatmate and a flat for her next couple of years here in London as she plans to get a job after finishing university. However it is a struggle for her to find a reasonable flatmate as most of the time the people she finds are not really to her liking. She wishes to find a flatmate with which she can share her interests and live a harmonious life. However, to find such a flatmate is very time consuming and Ana already lives a very fast-paced life. The methods she has tried have either been too time-consuming or offer little help in finding a good match to her personality (Facebook searching, etc.). Her next home means a lot to her so finding the right one is a must.

Motivation

Incentive
Fear
Growth
Power
Social

Jake Burrough

"A discovery is said to be an accident meeting a prepared mind."

Age: 21
Work: Student
Family: Single
Location: London, UK
Character: Charismatic

Personality

Introvert	Extrovert
Thinking	Feeling
Sensing	Intuition
Judging	Perceiving

Easily Discouraged | Alert | Cheerful | Demanding | Disorganized | Distractible | Impatient | Energetic | Honest | Logical

Goals

- Wants to advertise his property to find a flatmate.
- Wishes to spend as few time as possible finding a flatmate as he is living a busy life
- He wants a simple, modern solution to list his flat similar to a noticeboard in which way people would be able to message/phone him
- Wishes to list both himself and his home as a "package" so that he will attract people with things in common.

Frustrations

- Encountered too many unreliable people which would act interested but later would turn away ("ghost" flatmates).
- Has tried plenty noticeboards but believes nowadays people have lost interest in such methods as it did not bring him results.
- Most solutions he has tried have either focused too much on him or too much on his flat
- Advertising your home is a very stressful process for one to handle himself, often times feeling discouraging.

Bio

Jake is a 21 years old student in his 2nd year Management and Mathematics at King's College London. He already has a flat, however, he wishes to share this flat with another person just like him. He wants to be able to list his flat in a way similar to a noticeboard where people would see his flat and either message him or call him. Along with his flat, he wants to give a bit of information about himself as well in order to attract people with the same interests and beliefs as his. However, for him, advertising such personal information out in the public feels a bit odd so he desires a modern solution for such ideas. As he is living a very busy and stressful life he wishes to minimize as much as possible the time the user has to invest to find a reasonable match. A perfect solution for him would be to list his flat and himself somewhere and then continue with his day while waiting for people similar to him to message him.

Motivation

Incentive
Fear
Growth
Power
Social

Both Ana and Jake have a common problem which is finding a flat mate, however, they have different circumstances. Ana is in search of both a flat and a flat mate as she is about to begin her 2nd year in London at University of Greenwich. Jake is only searching for a flat mate as he already owns a flat and would like to list his flat online for others to see.

Scenarios:

❖ A. Searching for people with a flat based on preference

Technical Assumptions:

- ✓ The app has real time live access to the Google Maps API
- ✓ The app integrates Google Maps as the main navigation tool
- ✓ The app makes use of an internal database which contains various addresses of properties and flats registered by people
- ✓ The user has completely created and verified their account

Problems:

Ana wants to find a flat mate to live with, but there are few options available to her in order to find one. She decides to use Facebook search to check for people that have a spot in their flat in London.

She joins numerous flat mate finder groups, searches for plenty of people based in London who would like to share their flat but this whole process is very exhausting and time-consuming.

Ana often gives up her search for another day as she already has a busy and stressful day, but whenever she decides to pick up the search task again, she has to start over, losing valuable time.

She also dislikes the way Facebook handles personal information about people as it is time consuming and hard for her to find people with common interests. She would love a solution that also offers a way to display a bit about your personal life.

It is also really hard for Ana to find out the actual location of properties as she would have to first talk to people and ask them if they have a spot left in their flat and if they are happy to offer it to her, which takes too long and most of the time ends up being an unpleasant location for her.

Solutions:

The app allows her to quickly search for people in her city/area based on a filter she can adjust to match with various types of persons which share common interests with her.

Creating an account allows Ana to display a bit of information about herself to the other users in the app adding the personal factor to the search motor.

Ana can search for people that have listed their property and wish to have a flat mate using Google Maps as her main navigation tool within the app.

Ana can set up her interests in her account through which the app will be able to show her people with most interests in common first, allowing for a quick best fit match, maximizing quick finding possibilities.

She can either use 3D or 2D view to her preference in order to maximize searching performance and obtain a more accurate idea of where the properties are situated.

On the map she is able to see the numerous people who have listed their property. Each person is represented by a small box on the map summarizing their profile, pointing at the location on the map where the property is situated. Clicking on one's box allows Ana to see their full profile and see more information about their property, thus discovering more information about that individual and their home.

The app also allows Ana to save her favorite flat mate + property combo in a journal she can access at any time, this reduces the time she spends searching for that perfect flat she saw a couple of minutes ago.

The app also offers a built-in messaging tool which quickly allows for communication between Ana and another person.

❖ B. Listing your flat

Technical Assumptions:

- ✓ The app has real time live access to the Google Maps API
- ✓ The app integrates Google Maps as the main navigation tool
- ✓ The app makes use of an internal database which contains various addresses of properties and flats registered by people
- ✓ The user has completely created and verified their account

Problems:

Jake wants to list his flat to find a flat mate, but there are few options which will allow him to do as he pleases.

He tries using Facebook flat mate groups to list his flat online, however, he loses too much precious time doing background research on the people that message him.

The Facebook groups are also unorganized such that there are plenty people listed in the group that are no longer looking for a flat or have not logged in in a long time.

He has also thought of advertising his home by posting announcements on public noticeboards, but he did not receive enough responses, and neither were they good enough to advertise him and his flat as a package all together.

He is also afraid of posting information about himself out on public boards, thus restricting the amount of information he could offer at 1st glance. He requires a modern online solution.

Through the numerous solutions he has tried online plenty of them did not have any verification against "ghost" accounts.

Jake wants to advertise himself and his property out in the online in such a way that people would first select him out of hundreds because of a quick description which highlights important key characteristics of him and his flats.

Solutions:

The app has a verification process which adds a verified check mark to your profile if you registered your ID/Passport. This will prevent any unhappy events Jake has encountered in the past with “ghost” accounts.

Registering his property within the app will allow Jake to be discovered on the map by flat mates which are looking for both a flat mate and a flat.

Jake’s brief description box together with an arrow pointing to his flat’s location will be visible to anyone browsing for flats. This implies that people will be able to differentiate Jake’s key traits and information from others, offering competitiveness between users.

Jake does not have to waste much of his time using the app. By registering his property, he will always be displayed on the map with no other hassle involved. All he needs to do is await messages from potential flat mates.

scenario2.docx

scenario1.docx

4. Visual Design

Further research has been conducted for the choice of visual design elements which will comprise the app and its tools. The following points have been discovered through my research:

“Millennials love minimalism, but today it goes far beyond the simple black and white designs of the past. Rather than limiting color palettes or fonts, millennial minimalism combines cleanliness with uncluttered layouts, effective use of white space and symmetry. Flat design is also one of the most popular trends within minimalism. It makes bold use of bright, contrasting colors and unique typography, along with texture and shadow” (S. Tjarks, 2018).

“For many years, designers favored muted colors as they experimented with new, minimalist design options. However, vibrant colors are making a comeback and graphic designers are using them to help their brands stand out” (S. Tjarks, 2018).

“millennials love their typography. Daring typography choices could be just what you need to get your packaging design and socials noticed by this audience. Different fonts can also give structure to your packaging and provide subtle cues to direct attention towards your product’s USPs” (S. Tjarks, 2018).

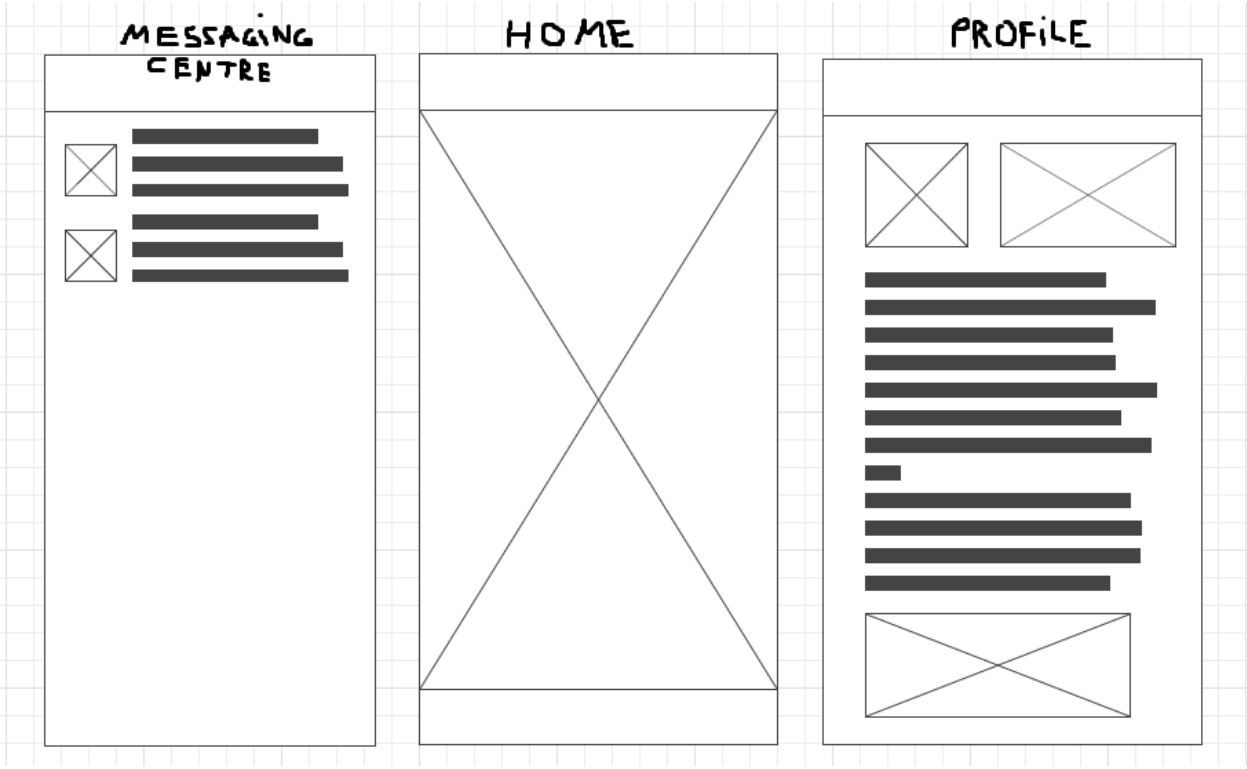
“…making sure it’s aesthetically pleasing is even more important to millennials.” (L. Box, 2019).

"…a comprehensive visual style guide can ensure your brand stays on-point, always. Creating a consistent image across all forms of communication through logo, typography, color palette, and imagery will create a cohesive package to attract your target audience" (L. Box, 2019).

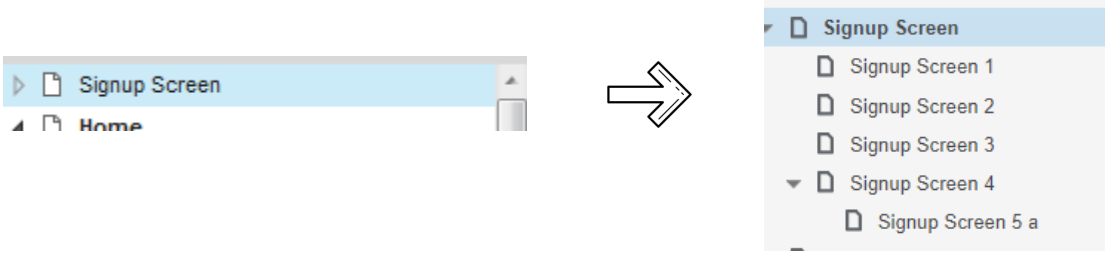
"Millennials have absolutely no tolerance for things that are slow" (D. Hennequin, 2018).

It can be noticed that a minimalistic design comprised of icons, representations and essential information is a must. Combining this information with Shneiderman's "Eight Golden Rules of Interface Design" (Ben Shneiderman, 1986), I was able to finally determine the best approach in what concerns the Visual Design for the app.

- In terms of layout, the app shall have a clean, symmetric, uncluttered design with intuitive elements such as tapping, dragging etc.

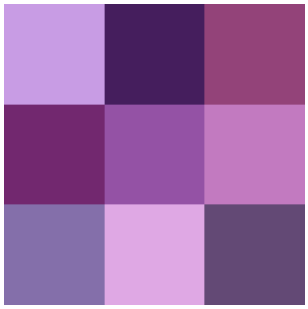


- Long pieces of information shall be split in bits and "fed" to the user in an instant gratifying approach. For example, a very long signup page shall be split into plenty category-based parts which feel faster and more satisfying in terms of gratification.



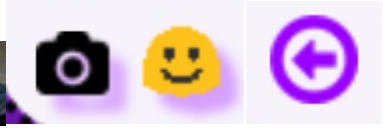
Vivid colors rather than dull ones and an aesthetically pleasing font shall be at the core of the visual design.

- The color of choice here is purple as it is a royal color, offering the app a genuine, legitimate tone. Purple is also deemed to be a soothing, mysterious color, the latter being a very good adventure mood starter for searching a flat mate. Furthermore, it is a color appreciated by both men and women.

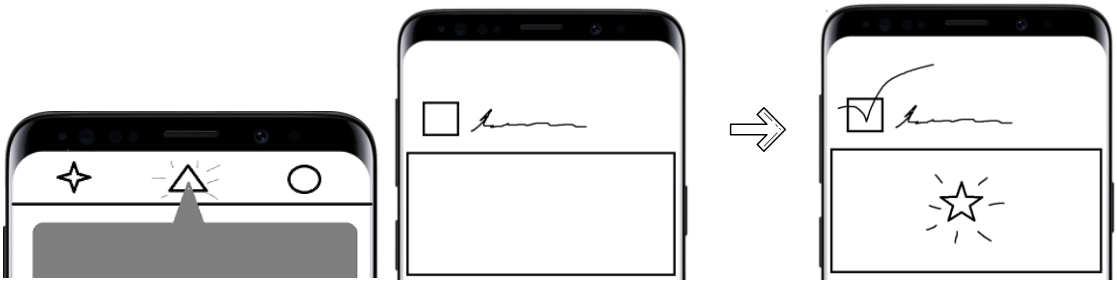


- The special font used here, Golden Hills, is a fresh, neat font which adds to the youth/millennial factor of the app. The special font used for the app's name shall also be used when dealing with an important step within the app such as clicking next or displaying your name in a more fashionable way, things which offer a bigger impact in terms of importance and style. Along with the special font, the app shall also have a second font (Gabriola) used for common/basic tasks such as marking the name of a field or displaying small notifications.

- Icons and their colors shall make use of common knowledge and easily describe what they are supposed to do as this adds to the simplicity.



- The app needs to be as responsive and transparent as possible giving the user as much feedback as needed, letting him/her know the current ongoing process within it. For example, changing an option in the settings menu shall have an immediate effect on the app. Or clicking on a tab shall let the user know his current position.



- The simplistic logo and color scheme shall further create the brand's image. The same way people associate Facebook with the color dark blue and letter "F".

5. Evaluation

Evaluation is one of the most important steps in in the process of designing a solid user interface. There are plenty methods in identifying if key aspects of a design are met, however, for this application, I have considered 3 major ones.

Focus groups are a good way to "discover what users want from the system" (Jakob Nielsen, 1997). They take the form of a group meeting of 6-9 people in which a group coordinator asks key questions regarding certain design decisions and issues. The aim of this focus group is to obtain the thoughts, preferences and ideas of those users such that the user experience might be improved in the future. A series of such groups shall be conducted in order to maximize the pool of ideas towards the design. Though this represents a good method through which the user can express his ideas with certain choices the designers have made, it is not enough to assess key characteristics of the app in its early stages of development. This method can be applied at a later time to further improve an already well-designed user interface.

Cognitive walkthrough, according to Blackmon, Polson and Muneo (2002), is a good method through which a design's usability can be thoroughly tested. It is achieved in such a way that a user is given the ability to carry out the tasks the app is supposed to do. The ease with which the user was able to complete certain tasks or the order in which they have done so is recorded and taken into consideration. This is a cost-effective method which can be carried out in the early stages of development before implementing the actual application through coding.

Heuristic Evaluation is evaluated by experts. Unlike focus groups and cognitive walkthrough, heuristic evaluation is rather focused if the design meets certain criteria. This is judged by usability experts who take into account key heuristics such as:

1. **"Visibility of system status**: The system should always keep users informed about what is going on, through appropriate feedback within reasonable time.
2. **Match between system and the real world**: The system should speak the users' language, with words, phrases and concepts familiar to the user, rather than system-oriented terms. Follow real-world conventions, making information appear in a natural and logical order.
3. **User control and freedom:** Users often choose system functions by mistake and will need a clearly marked "emergency exit" to leave the unwanted state without having to go through an extended dialogue. Support undo and redo.
4. **Consistency and standards**: Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform conventions.
5. **Error prevention:** Even better than good error messages is a careful design which prevents a problem from occurring in the first place. Either eliminate error-prone conditions or check for them and present users with a confirmation option before they commit to the action.
6. **Recognition rather than recall:** Minimize the user's memory load by making objects, actions, and options visible. The user should not have to remember information from one part of the dialogue to another. Instructions for use of the system should be visible or easily retrievable whenever appropriate.
7. **Flexibility and efficiency of use:** Accelerators—unseen by the novice user—may often speed up the interaction for the expert user such that the system can cater to both inexperienced and experienced users. Allow users to tailor frequent actions.
8. **Aesthetic and minimalist design:** Dialogues should not contain information which is irrelevant or rarely needed. Every extra unit of information in a dialogue competes with the relevant units of information and diminishes their relative visibility.
9. **Help users recognize, diagnose, and recover from errors:** Error messages should be expressed in plain language (no codes), precisely indicate the problem, and constructively suggest a solution.
10. **Help and documentation:** Even though it is better if the system can be used without documentation, it may be necessary to provide help and documentation. Any such information should be easy to search, focused on the user's task, list concrete steps to be carried out, and not be too large."

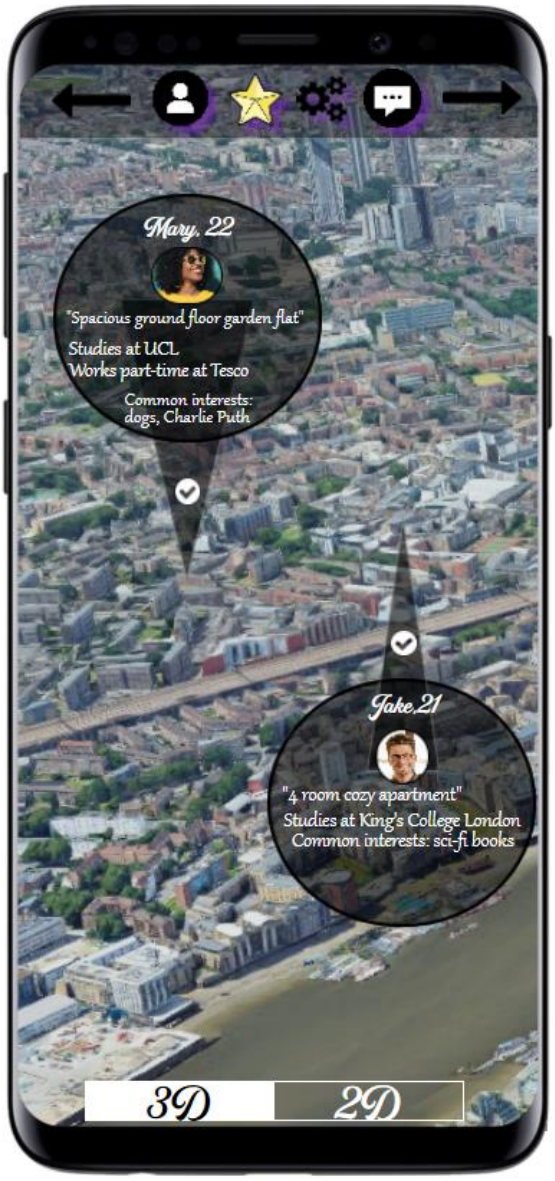
(Dawn Schlecht, 2019)

In the early stages of development cognitive walkthrough shall be used to obtain a rough idea of the core design. After numerous iterations of cognitive walkthrough, when a solid design has been met, a heuristic evaluation shall be conducted in order to test if the app meets all of the principles Jakob Nielsen lists in his book "Usability Engineering". If the design manages to pass the afore mentioned tests, a focus group shall be conducted in order to discover the user's preference for certain aspects in the current design.

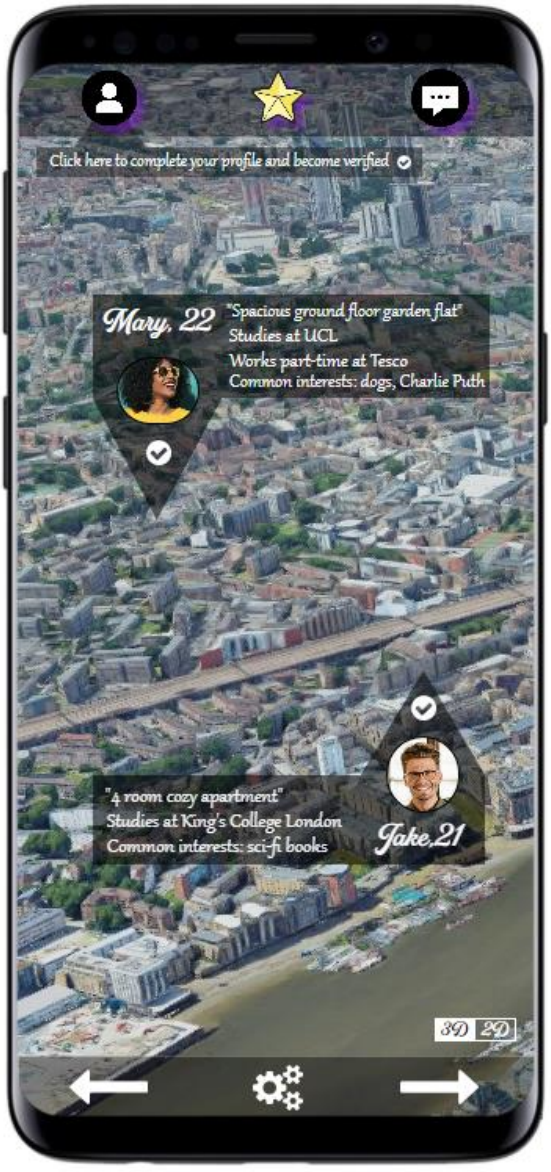
6. Design of the prototype
    a. Mid-Level Prototypes
        I. 2 Mid-Level Prototypes

Home

1



2



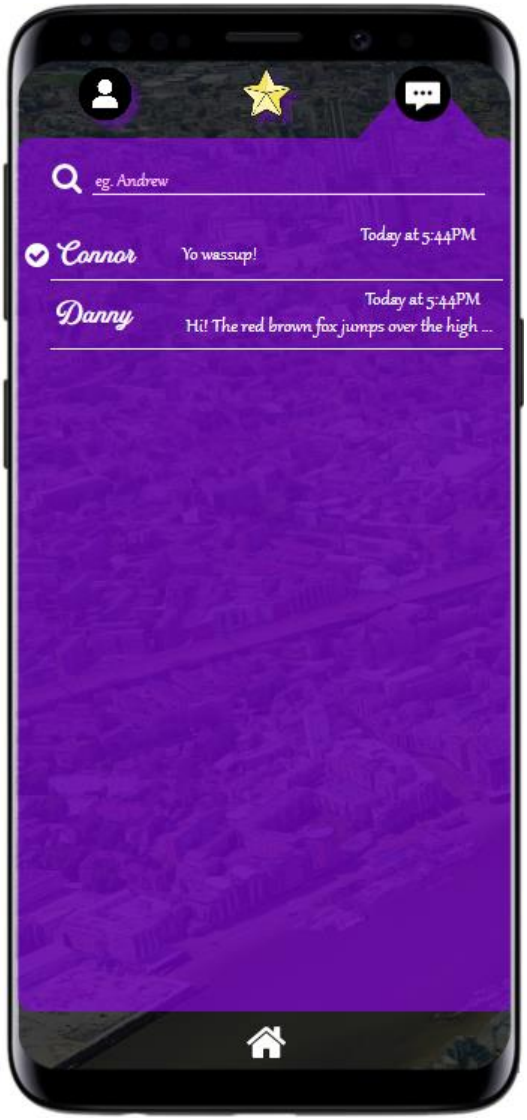
Messaging

1

2

Messaging Center/Contact List

1



2

Profile Page

1

2

Favorite

1

eg. Andrew
Mary, 22
Lu, 25

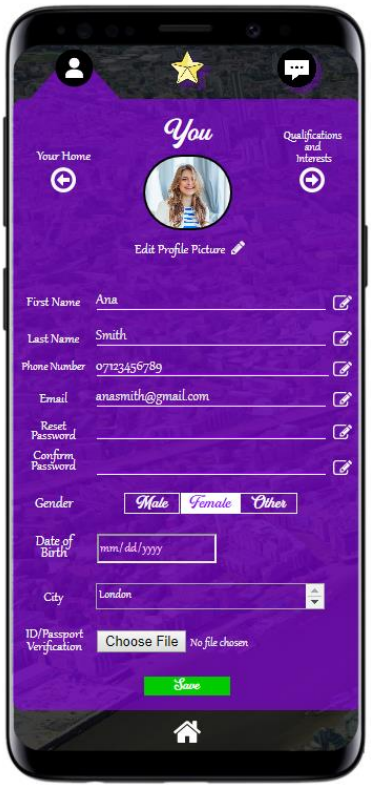
2

eg. Andrew
Mary, 22
"Spacious ground floor garden flat"
Studies at UCL
Works part-time at Tesco
Common interests: dogs, Charlie Puth
Lu, 25
"Modern top floor flat"
Works full-time manager at M&S
Common interests: jogging

Profile Settings

1

2



Property Settings

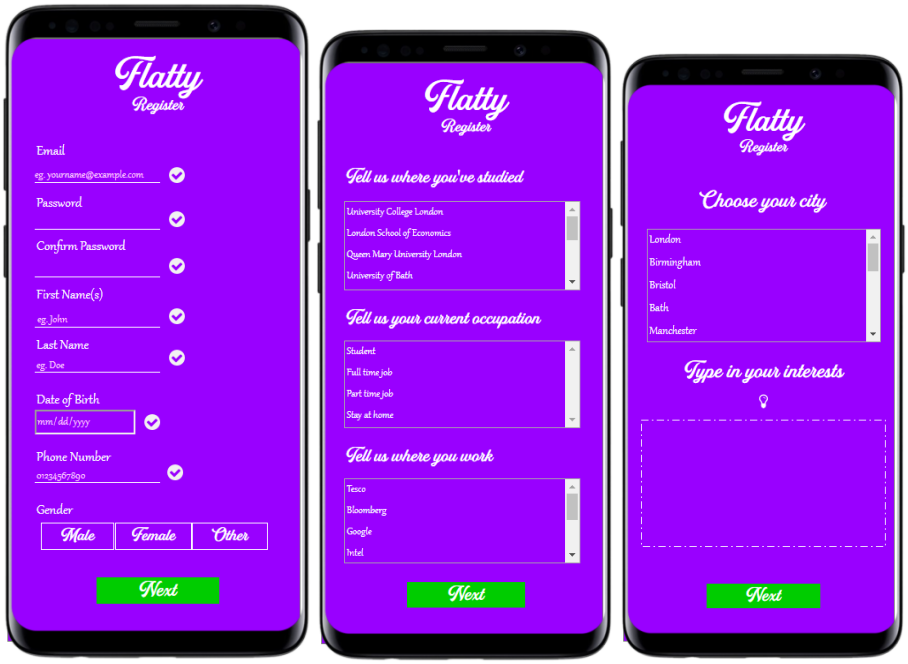
1

2

Signup Screen

1

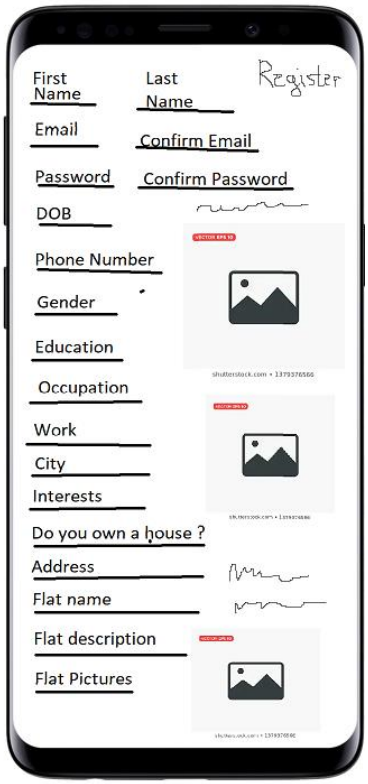
2

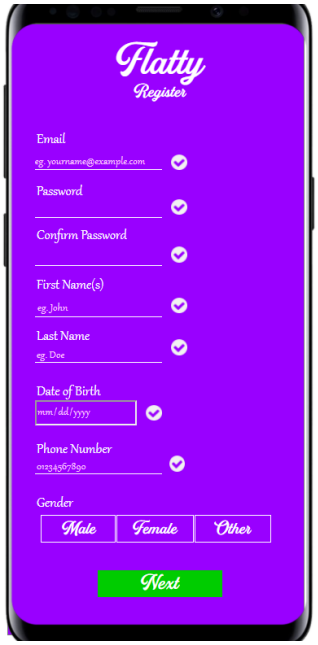


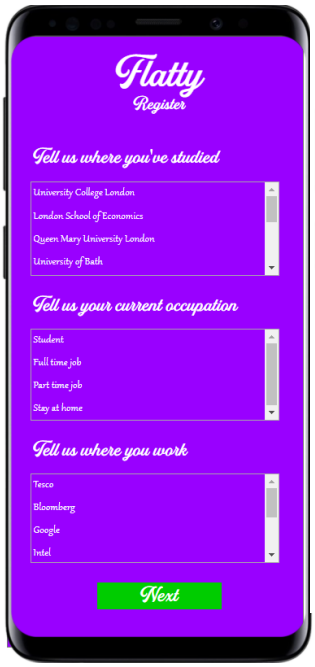
II. Selection Process

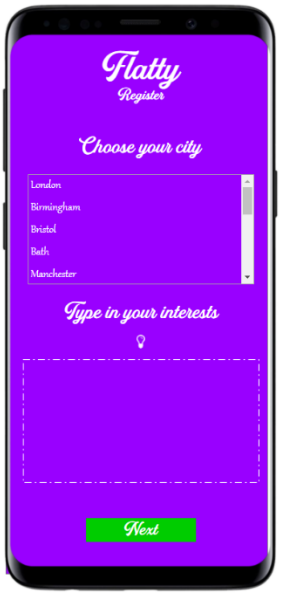
The selection criteria for choosing the best prototype out of the 2 displayed above, is based on all the principles selected and explained within this document. In order to put those into practice cognitive walkthrough has been used, as explained in the Evaluation section, which will provide a cost-effective efficient and decisive mechanism to select the best design. I have decided to continue developing this application with design prototype number 2. The reason for this is because, overall, design number 1 is deficient in consistency and often times offers either too much or too few information to the user. This can be observed throughout every single page comparison, for example, the home screen on the first design clutters too many icons and functions together on the top bar while on the second the amount is evenly split between the top and the bottom bar, or the profile settings page which on the 1st design provides too much information to the user, in the 2nd it has been split into more pages and the layout has been improved to adapt to this information split offering consistency. The same can be said about the rest of the comparisons which consist of similar situations.

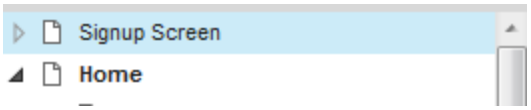
b. Final Prototype Design

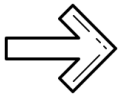

First Name
Last Name
Register
Email
Confirm Email
Password
Confirm Password
DOB
Phone Number
Gender
Education
Occupation
Work
City
Interests
Do you own a house ?
Address
Flat name
Flat description
Flat Pictures

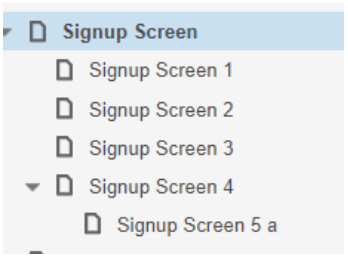

Flatty
Register
Email
eg. yourname@example.com
Password
Confirm Password
First Name(s)
eg. John
Last Name
eg. Doe
Date of Birth
mm/dd/yyyy
Phone Number
01234567890
Gender
Male
Female
Other
Next

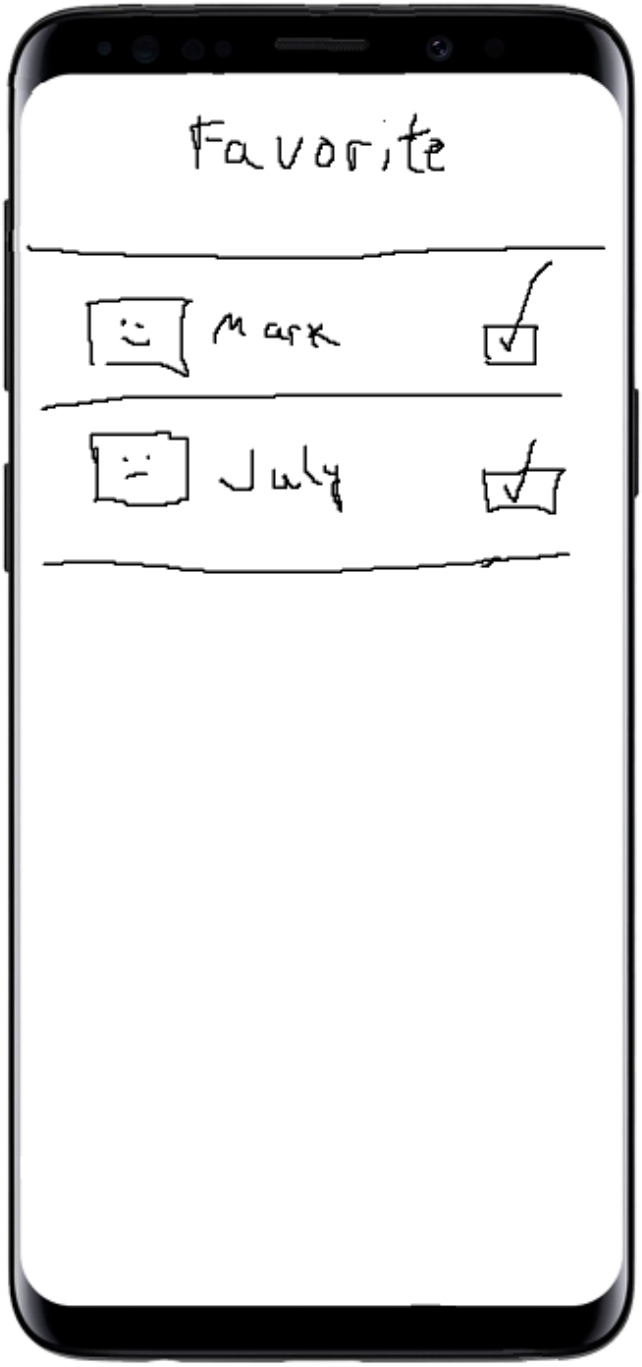

Flatty
Register
Tell us where you've studied
University College London
London School of Economics
Queen Mary University London
University of Bath
Tell us your current occupation
Student
Full time job
Part time job
Stay at home
Tell us where you work
Tesco
Bloomberg
Google
Intel
Next


Flatty
Register
Choose your city
London
Birmingham
Bristol
Bath
Manchester
Type in your interests
Next

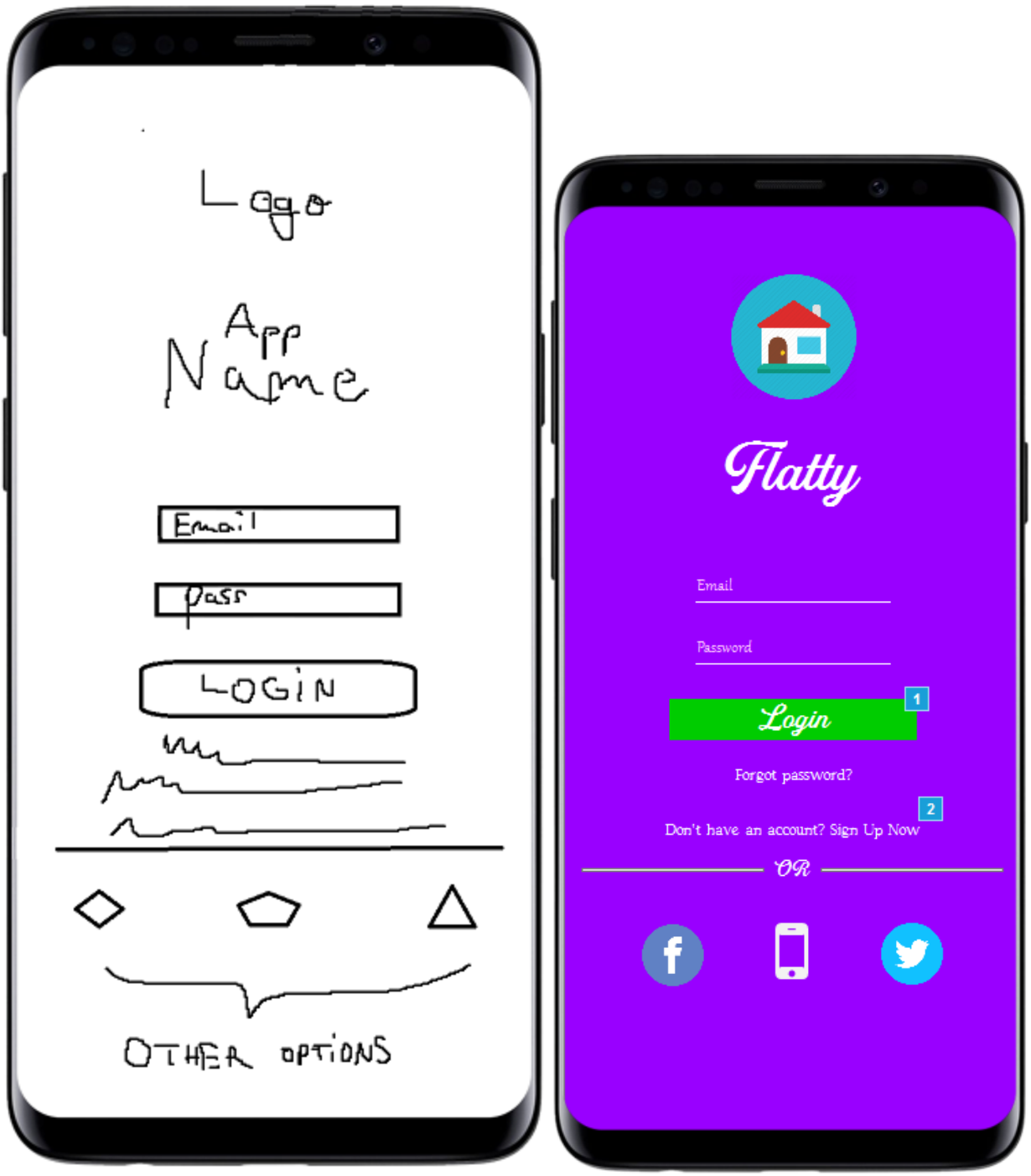

Signup Screen
Home

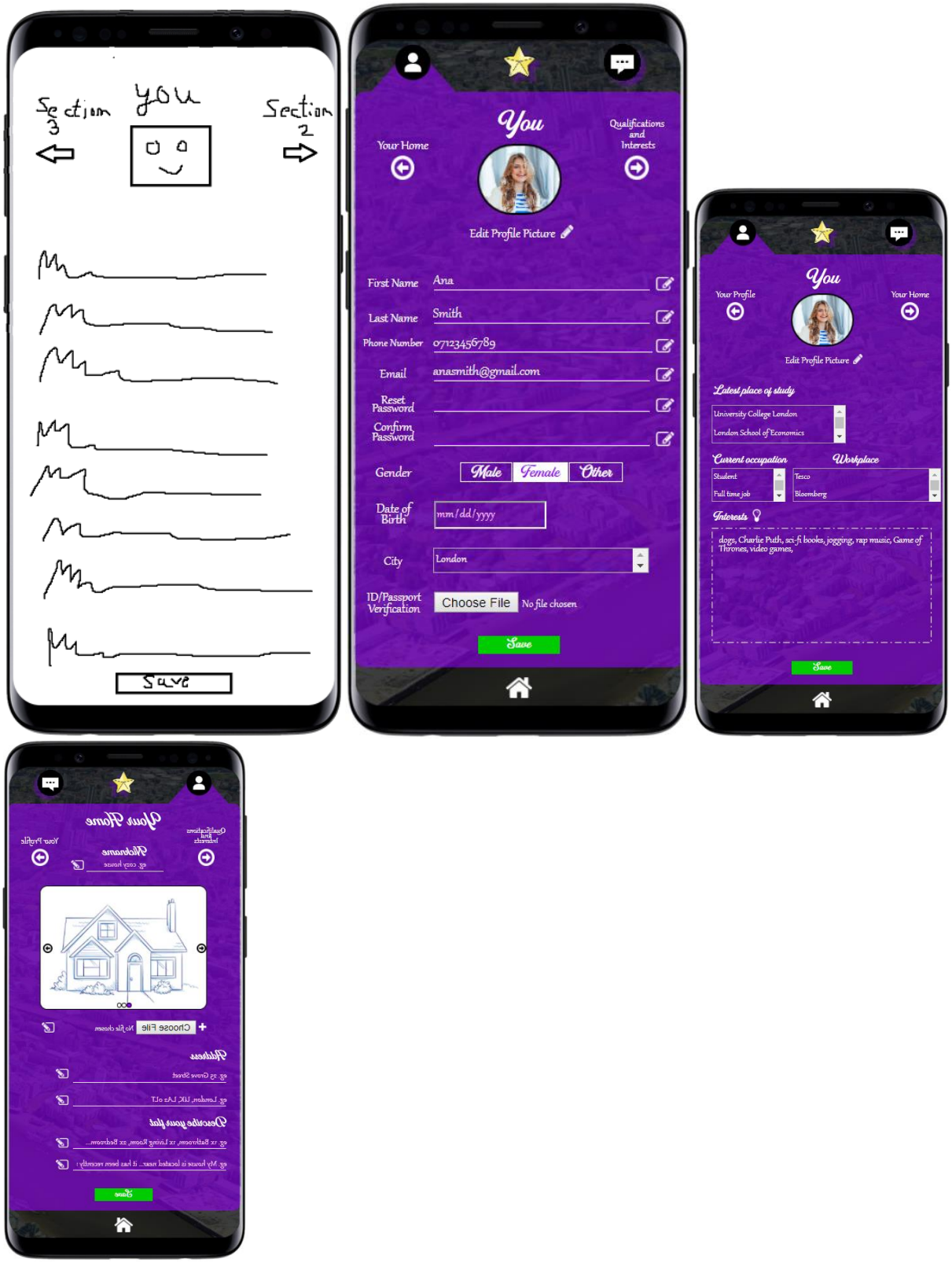


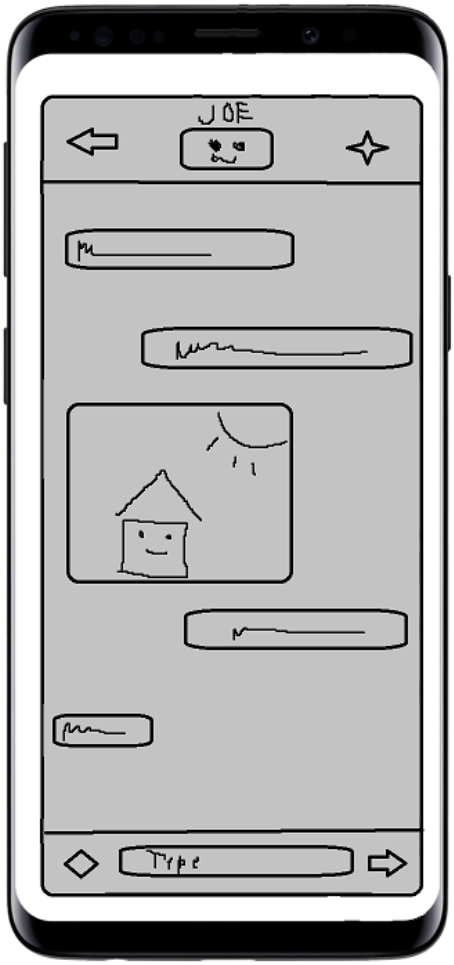

Signup Screen
Signup Screen 1
Signup Screen 2
Signup Screen 3
Signup Screen 4
Signup Screen 5 a


Favorite
mark
July

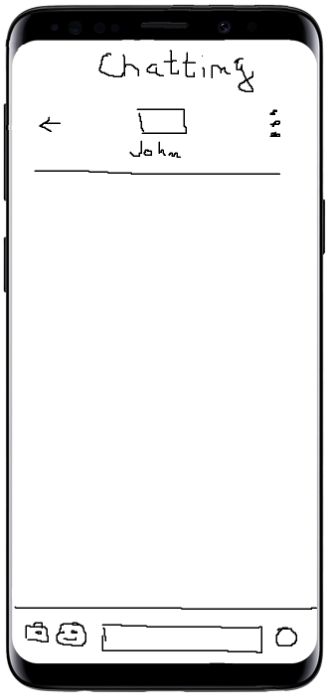
1
3
2
eg. Andrew
Mary, 22
"Spacious ground floor garden flat"
7
Studies at UCL
Works part-time at Tesco
Common interests: dogs, Charlie Puth
5
Lu, 25
"Modern top floor flat"
10
Works full-time manager at M&S
Common interests: jogging
8
4


Logo
App Name
Email
Pass
LOGIN
OTHER OPTIONS
Flatty
Email
Password
Login
1
Forgot password?
2
Don't have an account? Sign Up Now
OR

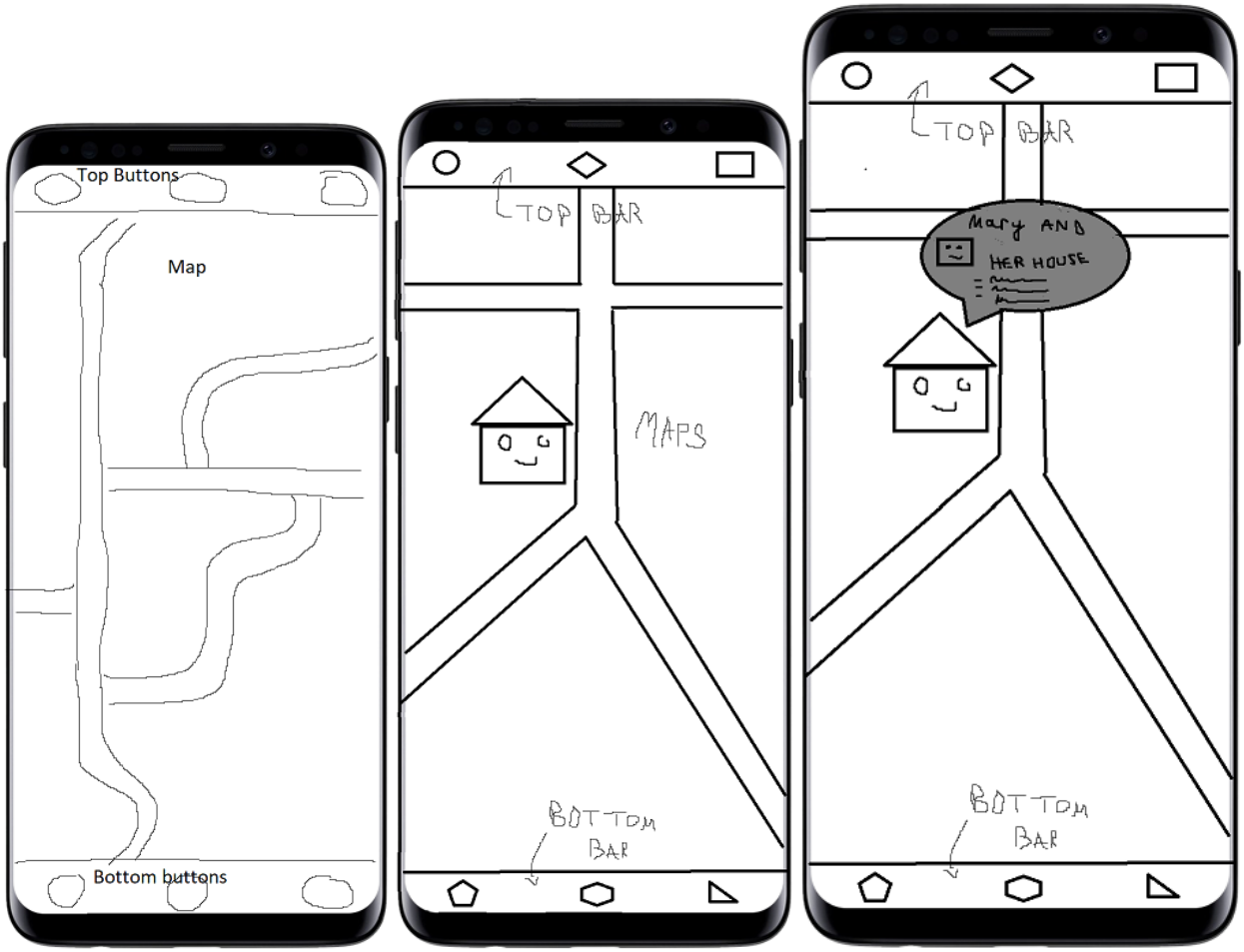

Section 3
You
Section 2
Save
You
Your Home
Qualifications and Interests
Edit Profile Picture
First Name
Ana
Last Name
Smith
Phone Number
07123456789
Email
anasmith@gmail.com
Reset Password
Confirm Password
Gender
Male
Female
Other
Date of Birth
mm/dd/yyyy
City
London
ID/Passport Verification
Choose File
No file chosen
Save
You
Your Profile
Your Home
Edit Profile Picture
Latest place of study
University College London
London School of Economics
Current occupation
Workplace
Student
Full time job
Tesco
Bloomberg
Interests
dogs, Charlie Puth, sci-fi books, jogging, rap music, Game of Thrones, video games,
Save

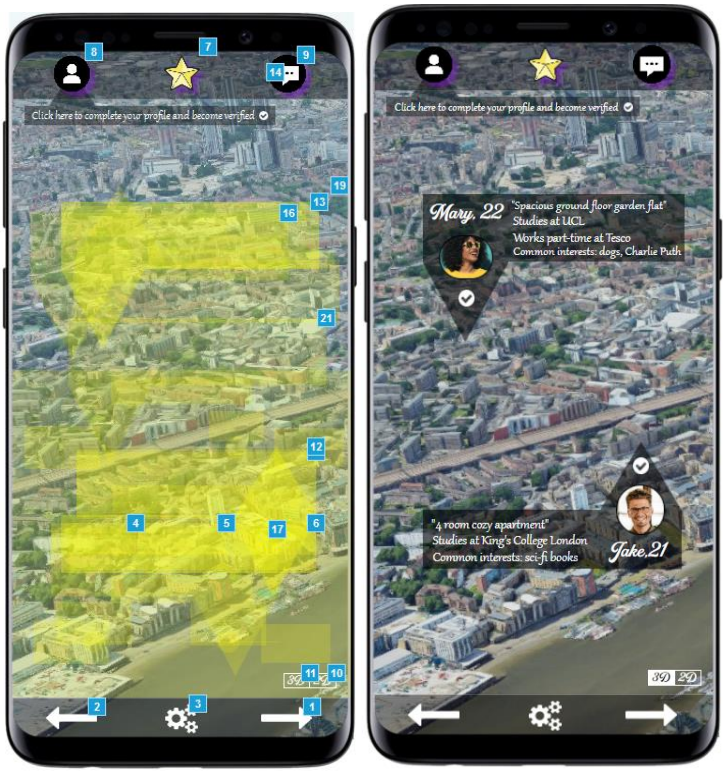

JOE
Type

Mary
Today at 2:49PM
Me
Heyy, OMG you have a dog? He's so cute!
Mary
Haha, thank you! He's actually a she
Me
I always wanted a dog but I could never afford one. Mind if I move in with you? Let's discuss this.
Mary
Yea sure, whenever you've got time!
Me
Great!
Text Message


Chatting
John

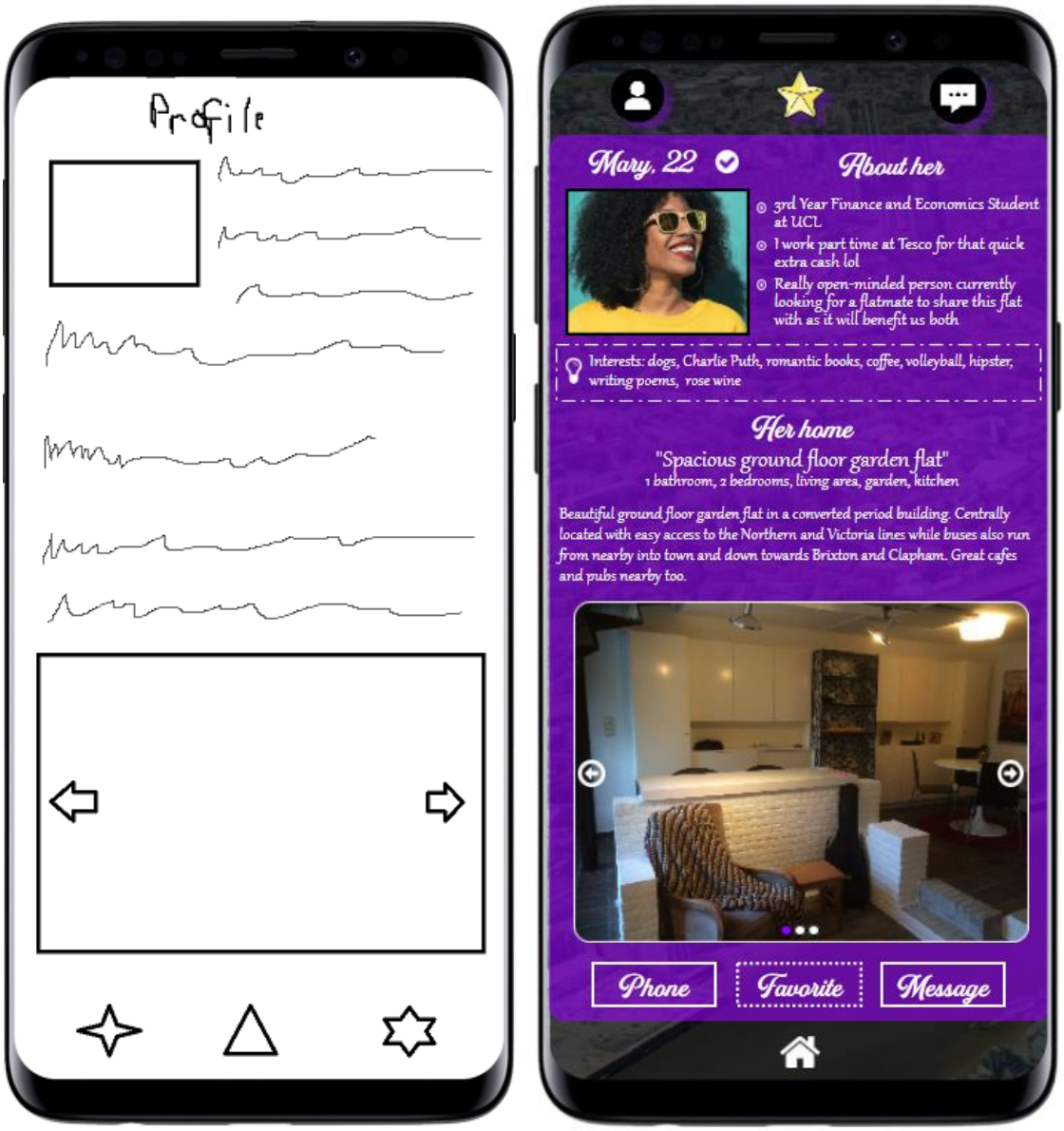
Daniel
Say Hi! to Daniel :)
Text Message

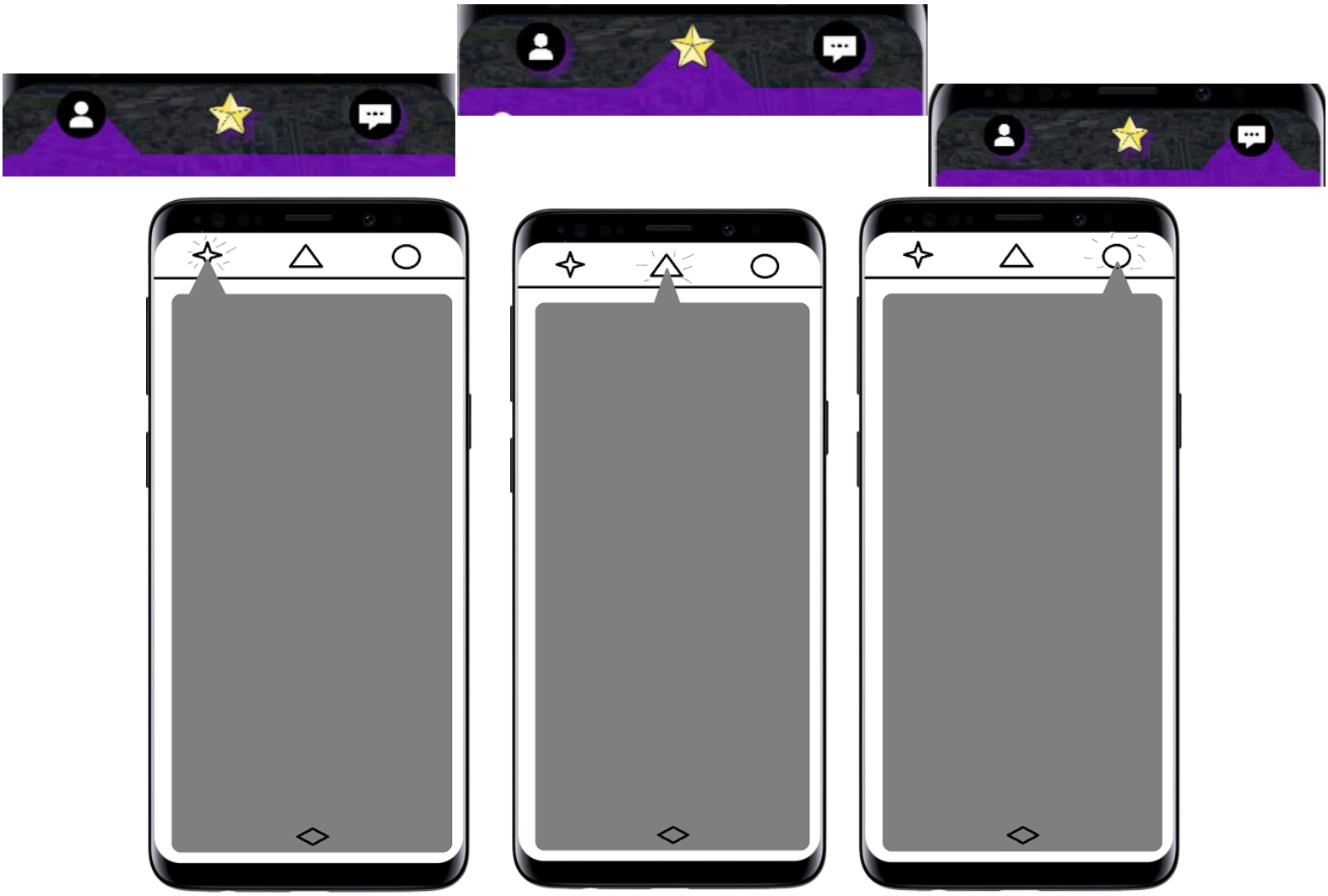

Top Buttons
Map
Bottom buttons
TOP BAR
MAPS
BOTTOM BAR
TOP BAR
Mary AND HER HOUSE
BOTTOM BAR


Click here to complete your profile and become verified
Click here to complete your profile and become verified
Mary, 22
"Spacious ground floor garden flat"
Studies at UCL
Works part-time at Tesco
Common interests: dogs, Charlie Puth
"4 room cozy apartment"
Studies at King's College London
Common interests: sci-fi books
Jake,21

Navigation Options
A
B
C
D
1
10
Click!

Discover Range
90km
0km
100km
Gender Preference
Male
Female
Other
Common interests: sci-fi books
Age Range
18
26
18
30
3D
2D


Profile
Mary, 22
About her
3rd Year Finance and Economics Student at UCL
I work part time at Tesco for that quick extra cash lol
Really open-minded person currently looking for a flatmate to share this flat with as it will benefit us both
Interests: dogs, Charlie Puth, romantic books, coffee, volleyball, hipster, writing poems, rose wine
Her home
"Spacious ground floor garden flat"
1 bathroom, 2 bedrooms, living area, garden, kitchen
Beautiful ground floor garden flat in a converted period building. Centrally located with easy access to the Northern and Victoria lines while buses also run from nearby into town and down towards Brixton and Clapham. Great cafes and pubs nearby too.
Phone
Favorite
Message



7. Critical reflection

During the process of designing this mobile application I have gained deep insight into the principles of user interface through both research and first-hand experience which I believe I will be using as a thorough set of basic knowledge when dealing with further tasks which involve a similar topic. Personally, I am delighted with the progress and results I have managed to develop and produce, reason for which I am looking forward to taking this university project further out of its bounds and limits, more specifically, to create and build a final high-level product out of it for my own personal portofolio.

8. References

Section 2

- Bungalow (2018). Living with Housemates: A Growing Trend for Millennials. [online] Medium. Available at: https://medium.com/@Bungalow/living-with-housemates-a-growing-trend-for-millennials-48bf1fbc0301 [Accessed 3 Dec. 2019].
- McKee, K. (2019). Generation rent is a myth – housing prospects for millennials are determined by class. [online] The Conversation. Available at: https://theconversation.com/generation-rent-is-a-myth-housing-prospects-for-millennials-are-determined-by-class-108996 [Accessed 3 Dec. 2019].
- Nielsen Norman Group. (2016). Design Thinking 101. [online] Available at: https://www.nngroup.com/articles/design-thinking/.
- Nielsen Norman Group. (2012). Usability 101: Introduction to Usability. [online] Available at: https://www.nngroup.com/articles/usability-101-introduction-to-usability/.
- Nielsen Norman Group. (2017). A Theory of User Delight: Why Usability Is the Foundation for Delightful Experiences. [online] Available at: https://www.nngroup.com/articles/theory-user-delight/.
- Alvarez-Cortes, V., H., V., Ramirez Uresti, J.A. and E., B. (2009). Current Challenges and Applications for Adaptive User Interfaces. Human-Computer Interaction. [online] Available at: https://www.intechopen.com/books/human-computer-interaction/current-challenges-and-applications-for-adaptive-user-interfaces [Accessed 3 Dec. 2019].
- Mediumwell.com. (2015). Responsive vs Adaptive Design – Which is Best for Mobile Viewing of Your Website? | Medium Well. [online] Available at: http://mediumwell.com/responsive-adaptive-mobile/ [Accessed 3 Dec. 2019].

Section 2.2

- Devaney, E. (2014). 8 Guidelines for Exceptional Web Design, Usability, and User Experience. [online] Hubspot.com. Available at: https://blog.hubspot.com/blog/tabid/6307/bid/30557/6-guidelines-for-exceptional-website-design-and-usability.aspx.
- Spotless. (2012). Mobile apps – Some usability guidelines | Spotless. [online] Available at: https://www.spotless.co.uk/blog/mobile-apps-usability-guidelines/ [Accessed 3 Dec. 2019].
- Babich, N. (2018). A Comprehensive Guide To Mobile App Design — Smashing Magazine. [online] Smashing Magazine. Available at: https://www.smashingmagazine.com/2018/02/comprehensive-guide-to-mobile-app-design/.

Section 3

- Morris Creative Group. (2017). Personality Traits of Millennials: How to Market to this Generation | Morris Creative Group. [online] Available at: https://www.morriscreative.com/personality-traits-millennials-market-generation/.
- Taylor, C.R. (2018). Generational Research and Advertising to Millennials. International Journal of Advertising, 37(2), pp.165–167.

- Howe, N. and Strauss, W. (2003). Millennials Go To College. [online] Available at: https://michiganscouting.org/wp-content/uploads/2017/11/Five-Characteristics-of-Millennials.pdf.

Section 4

- Steen Tjarks (2018). Designing for Millennials. [online] Packagingstrategies.com. Available at: https://www.packagingstrategies.com/articles/94463-designing-for-millennials [Accessed 3 Dec. 2019].
- Box, L. (2019). 6 Ways Visual Branding Can Attract Millennials | EyeEm. [online] Available at: https://www.eyeem.com/blog/6-ways-visual-branding-can-attract-millennials [Accessed 3 Dec. 2019].
- Hennequin, D. (2018). How to Design UX for Millennials. [online] Envato. Available at: https://envato.com/blog/how-to-design-ux-for-millennials/ [Accessed 3 Dec. 2019].
- Washington.edu. (2019). Shneiderman's Eight Golden Rules of Interface Design. [online] Available at: https://faculty.washington.edu/jtenenbg/courses/360/f04/sessions/schneidermanGoldenRules.html.

Section 5

- Nielsen Norman Group. (2019). Focus Groups in UX Research: Article by Jakob Nielsen. [online] Available at: https://www.nngroup.com/articles/focus-groups/.
- Blackmon, M., Polson, H. and Muneo, P. (2002). Cognitive Walkthrough for the Web CHI Vol 4. 1st ed. Pp. 463-470.
- SCHLECHT, D. (2019). Your Step-By-Step Guide To Heuristic Evaluation In UX Design. [online] Available at: https://careerfoundry.com/en/blog/ux-design/what-is-a-heuristic-evaluation-in-ux/ [Accessed 3 Dec. 2019].
- Nielsen, J. (2019). Usability Engineering. 1st ed. California: Morgan Kaufman

9. Bibliography

- Shama Hyder (2017). Here's What You Need To Know About Millennials. Forbes. [online] 25 Aug. Available at: https://www.forbes.com/sites/shamahyder/2014/03/04/here-is-what-you-need-to-know-about-millennials/#2ab73d4c311d [Accessed 3 Dec. 2019].
- Bialik, K. and Fry, R. (2019). Millennial life: How young adulthood today compares with prior generations. [online] Pew Research Center's Social & Demographic Trends Project. Available at: https://www.pewsocialtrends.org/essay/millennial-life-how-young-adulthood-today-compares-with-prior-generations/.
- Linkedin.com. (2016). 11 Millennials' Traits You Should Know About Before You Hire Them. [online] Available at: https://business.linkedin.com/talent-solutions/blog/2013/12/8-millennials-traits-you-should-know-about-before-you-hire-them.
- Tanya (2018). The Ultimate List of Millennial Characteristics | Lucky Attitude. [online] Lucky Attitude. Available at: https://luckyattitude.co.uk/millennial-characteristics/.

- Dhaval Sarvaiya (2019). 10 Design Trends Millennials will Adopt in 2019. [online] Fluid UI - Unlocking the world's creativity. Available at: https://blog.fluidui.com/10-design-trends-millennial-entrepreneurs-will-focus-on-in-2019/.
- Usabilitybok.org. (2011). Cognitive Walkthrough | Usability Body of Knowledge. [online] Available at: https://www.usabilitybok.org/cognitive-walkthrough.
- IT Enterprise. (2019). IT Enterprise - Bespoke Software Development. [online] Available at: https://itenterprise.co.uk/three-types-of-software-prototype/.
- Gammell, K. (2011). Rising rents force young people into flatshares. [online] Telegraph.co.uk. Available at: https://www.telegraph.co.uk/finance/personalfinance/borrowing/mortgages/8720113/Rising-rents-force-young-people-into-flatshares.html.
- EXCEM SOCIMI SIR. (2019). What do Millennials want when looking for a flat? (Location, style…and services) | EXCEM SOCIMI SIR. [online] Available at: https://excemsir.com/en/millennials-want-looking-flat-location-styleand-services/.
- Beaty, Z. (2019). Generation rent: Stylist investigates the rising popularity of houseshares. [online] Stylist. Available at: https://www.stylist.co.uk/life/houseshares-pros-cons-having-flatmates-generation-rent/258346.
- admin (2016). How Has Flat-Sharing Impacted the UK Property Market? - Roomgo blog. [online] Roomgo blog. Available at: https://blog.roomgo.co.uk/flat-sharing-impacted-uk-property-market/.
- Nielsen Norman Group. (2019). When to Use Which User-Experience Research Methods. [online] Available at: https://www.nngroup.com/articles/which-ux-research-methods/.
- Nielsen Norman Group. (2017). UX Research Cheat Sheet. [online] Available at: https://www.nngroup.com/articles/ux-research-cheat-sheet/.
- Nielsen Norman Group. (2017). UX Mapping Methods Compared: A Cheat Sheet. [online] Available at: https://www.nngroup.com/articles/ux-mapping-cheat-sheet/.
- Google Books. (2018). Design, User Experience, and Usability: Theory and Practice. [online] Available at: https://books.google.ro/books?id=IIdjDwAAQBAJ&pg=PA431&lpg=PA431&dq=nielsen+ux+theories&source=bl&ots=eHhGBK8XU9&sig=ACfU3U0QcfRhFmQvb8IhFaS8NfASKHYhIQ&hl=en&sa=X&ved=2ahUKEwiMtu7epO3lAhXJyKYKHT7HDJUQ6AEwCnoECAgQAQ#v=onepage&q=nielsen%20ux%20theories&f=false [Accessed 26 Nov. 2019].
- Google Books. (2017). Design, User Experience, and Usability: Theory, Methodology, and Management. [online] Available at: https://books.google.ro/books?id=UgUqDwAAQBAJ&pg=PA408&lpg=PA408&dq=nielsen+ux+theories&source=bl&ots=LzVjQo34wR&sig=ACfU3U3lYdMEBQ88dNRL6N1NudgjdCqxPg&hl=en&sa=X&ved=2ahUKEwiMtu7epO3lAhXJyKYKHT7HDJUQ6AEwC3oECAcQAQ#v=onepage&q=nielsen%20ux%20theories&f=false [Accessed 26 Nov. 2019].
- Educause.edu. (2019). The 21st Century User Interface Issues in interface design for student systems in the new millennium. [online] Available at: https://www.educause.edu/ir/library/html/cmr9929/cmr9929.html.
- Hackernoon.com. (2018). 6 Bad UI Design Examples & Common Errors of UI Designers. [online] Available at: https://hackernoon.com/6-bad-ui-design-examples-common-errors-of-ui-designers-e498e657b0c4.

- Nielsen Norman Group. (2019). Top 10 Application-Design Mistakes. [online] Available at: https://www.nngroup.com/articles/top-10-application-design-mistakes/.
- Usability (2019). Guidelines | Usability.gov. [online] Usability.gov. Available at: https://guidelines.usability.gov/.
- Leavitt, M.O. and Shneiderman, B. (2006). Research-Based Web Design & Usability Guidelines. [online] Available at: https://www.usability.gov/sites/default/files/documents/guidelines_book.pdf.
- Travis, D. (2014). 247 web usability guidelines. [online] Userfocus.co.uk. Available at: https://www.userfocus.co.uk/resources/guidelines.html.
- Nielsen Norman Group. (2019). Durability of Usability Guidelines. [online] Available at: https://www.nngroup.com/articles/durability-of-usability-guidelines/.
- Nielsen Norman Group. (2019). Top 10 Guidelines for Homepage Usability. [online] Available at: https://www.nngroup.com/articles/top-ten-guidelines-for-homepage-usability/.
- Bennett, J. (2019). Usability Guidelines - Usability Geek. [online] Usability Geek. Available at: https://usabilitygeek.com/tag/usability-guidelines/.
- Clearbridge Mobile. (2018). Clearbridge Mobile. [online] Available at: https://clearbridgemobile.com/7-best-practices-to-overcome-mobile-app-usability-issues/.
- Swarnendu De (2019). 5 Mobile App Design Guidelines For Better UX | CustomerThink. [online] Customerthink.com. Available at: http://customerthink.com/5-mobile-app-design-guidelines-for-better-ux/.
- The Interaction Design Foundation. (2017). It Ain't What You Do, It's the Way That You Do It – Mobile App Usability Best Practices. [online] Available at: https://www.interaction-design.org/literature/article/it-ain-t-what-you-do-it-s-the-way-that-you-do-it-mobile-app-usability-best-practices.
- Wong, E. (2018). Shneiderman's Eight Golden Rules Will Help You Design Better Interfaces. [online] The Interaction Design Foundation. Available at: https://www.interaction-design.org/literature/article/shneiderman-s-eight-golden-rules-will-help-you-design-better-interfaces.
- Umd.edu. (2016). Ben Shneiderman. [online] Available at: https://www.cs.umd.edu/~ben/goldenrules.html.
- Washington.edu. (2019). Shneiderman's Eight Golden Rules of Interface Design. [online] Available at: https://faculty.washington.edu/jtenenbg/courses/360/f04/sessions/schneidermanGoldenRules.html.