

# Human Computer Interaction – Bubbli

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## UX Design Research and Integration

I often find myself sitting down and fully observing my surroundings, after living many years in Amman I recognize the population growing, the city going through extensive urbanization and industrialization; growth is something beautiful however there are risks involved. With that being said, more apartment complexes and houses are being built as well as increasing traffic jams; the number of vehicles in Jordan increased annually by 3.2% in the last five years<sup>[1]</sup>. There are many issues in industrialization one of which that stands out is the **decreasing quality of life living in the city**. We are constantly surrounded by sound; noise pollution has become inevitable and getting a moment of silence has become impossible. How can we integrate UX research processes to create a product that will stand out and give users an immersive, special experience?, the main UX research pipeline consists of:

Assess → Design → Build

1. **Research:** in this step we will define what our problem is, establish our goals and what our desired UX product is, how it will cater to that problem and see if there are any products and competitors in the market that offer a potential solution. Through my research I was introduced to sound beaming technology which creates a fully immersive hearing experience to the user without the use of headphones, we see it mainly applied in gaming however I wanted to take a step further and curate it in a way that is portable and can be used at any time for self-care and wellness checks.
2. **User research:** in this step we will meet our user, this can be done through ethnographic research by observing human behavior as well as conducting research like interviews or surveys to get an idea of what user pains and needs are; I did this through google forms as well as observing the people around me to understand what technologies users currently utilize like headsets or earbuds and I also explored what users do to get a moment of peace and silence in the big city.
3. **Ideation:** after defining our problem and seeing what our user needs are, we can begin brainstorming proposed solutions to cater to user needs and pains. I did this through sketching scenarios that users go through on pencil and paper, I also utilized digital apps like Concepts on my tablet to make digital sketches
4. **End User personas:** our research in the real world will lead us to creating user personas, the purpose of establishing user personas is so that we can define who our users are, empathize with our users and so we don't lose scope of who we are catering the product and experience to.
5. **Creation:** through iterative design we can come up with a clear plan to make wireframes and prototypes of our proposed solution
6. **Visuals:** after prototyping and reaching our desired product we can focus on aesthetics and the branding of our products
7. **Testing:** in this section we conduct experiments with our user to see what their initial impressions of the solution are through usability testing; we assess their journeys and how they walk through the application/product to see if they match our proposed journey. Based on those results we can iterate our products to put the user's experience first
8. **Heuristic evaluation:** here we evaluate our application/service/product with heuristics and design principles and based on that we can iterate and test our product once (twice, three times even) more so we can establish that our product is enhancing the experience of the user .

## Noise Pollution Investigated

Noise pollution levels increase as urbanization of cities increase; just as other forms of pollution are aggravated by population density<sup>[2]</sup>, some of the 3 most common sources of noise pollution include:

Construction:



Vehicles and traffic conjunctions:



People, everywhere:



Living near airports and industrial places / construction sites:



A study on noise pollution<sup>[2]</sup> showed that there is indeed a correlation between noise, psychological and physiological effect on humans. National geographic<sup>[3]</sup> states that there are many physical and mental health hazards to noise pollution including but not limited to:

- Noise induced hearing loss
- High blood pressure which leads to heart disease
- Sleep disturbances, inability to fall asleep or stay asleep
- Increased stress levels and decreased levels of focus

all of the mentioned above are secondary research to validate the existence of noise pollution and its effects on the human psyche; based on this research I was able to understand how I can conduct primary research to gain insights about how users feel and cope with noise and see if noise pollution is a problem they face every day or not.

### Primary Research: Understanding How Users Cope with Noise Pollution

I created a google form with the title “Surrounded by Sound” to get an idea of how users are currently coping with and if they are aware of the problem of noise pollution, how often they encounter it and what the main source of noise they encounter are. I also wanted to understand this demographic so I can have a clear outline of designing the user experience of my application and product

From these insights we can utilize UX design and processes to create a futuristic and convenient tech device and application that gives the user a daily immersive listening experience. I asked the participants to answer however they felt fit and be as honest as possible, here are the questions and results:

**“Have you ever found it difficult to concentrate or relax because of the noise around you”**

**100%** of users answered **Yes**



### “How often do you encounter noise that disrupts your study/work or relaxing/sleep time?”

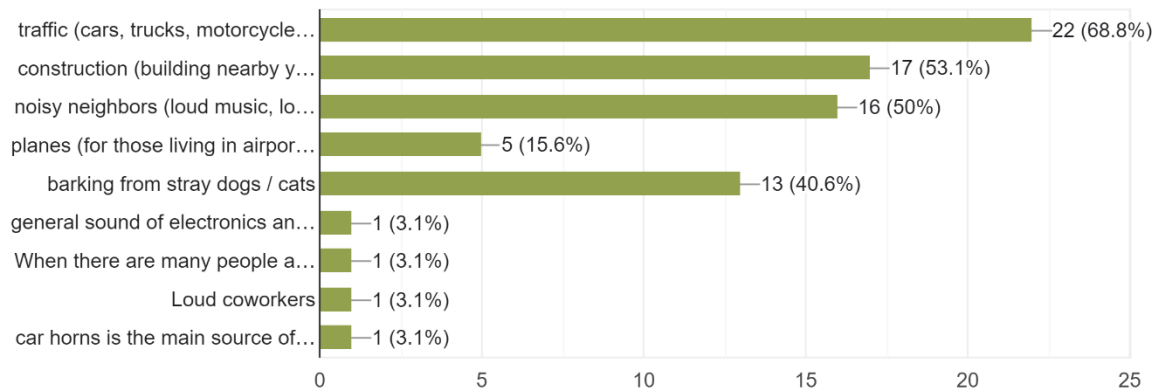
out of 32 participants, 6 answered all the time, 15 answered often, 10 answered sometimes and only 1 participant answered rarely

### “what's the most common source of noise you're surrounded by?”

These answers varied by a lot since they had an “other option”

what's the most common source of noise you're surrounded by

32 responses

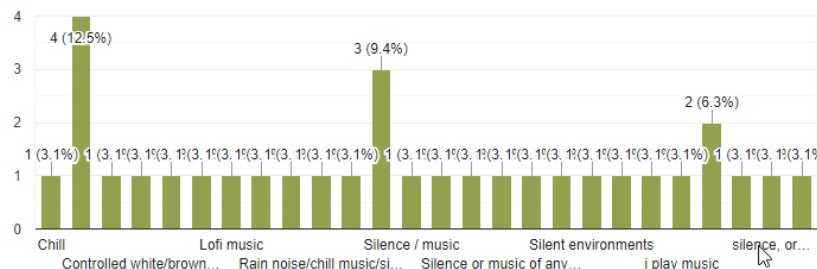


One of the answers was “car horns is the main source of noise for me beside el غسالات ثلاجات عتيقة للبيع”

Its so personalized and Ammani, which something I do think about integrating in my branding

### “When you need to focus, what kind of environment do you prefer? (e.g. silence, upbeat music, chill music, white/brown noise)”

32 responses



silence, or with quite sounds when what I do does not require full concentration, especially nature sounds

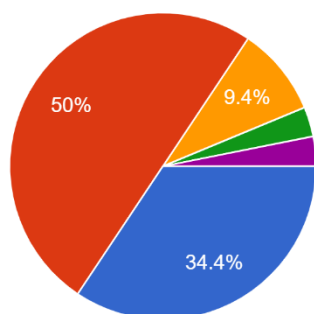
What stood out to me is people saying “depending on the task” or “what subject I’m studying” but the answers did not deviate to a specific preference, generally users like having multiple options, which rings a bell for the **user control and freedom heuristic**

I took the chance to use this research and see how people use sound to focus or to go to sleep

Next question was:

Do you find that music or white noise helps you concentrate better, or do you need complete silence?

32 responses

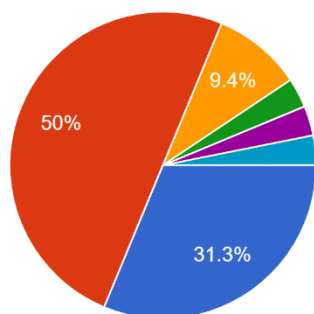


- yep, i need my silence
- nope, i like to work with music
- nope, i can work with people around
- I think that depending on the task I'm doing, sometimes I prefer working with music and sometimes I prefer working with complete silence
- When trying to understand a new topic i need complete silence. Upbeat music , white brown pink noises are the worst...

Then I incorporated the aspect of sleep:

When you're trying to sleep, do you prefer to have some sound in the background or complete silence?

32 responses



- sound in the background
- complete silence
- silence
- The sound of a fan
- Low volume music or TV
- Depends on the day / i like a mix of both

I ask users how they cope with noise and what do they do to get a moment of silence, out of 32 participants this are what stood out:

**“I try to block it mentally”** (referring to the noise)

**“I dont”** (referring to getting a moment of silence)

**“Ignore it, sadly its becoming normal”**

**“I block the noise with really loud metal music”**

**“Find a silent place”; “going somewhere silent”; “a little bit of patience, but if the noise is too much I change places”**

**“I just survive with the noise disturbing me, but it goes away when I sleep”**

75% of users answered in the pre-given options which were between headsets, earbuds, or earplugs

**22%** of participants said they use wearable **headsets**

**47%** said they use **air pods** and similar **earbuds**

And only **6%** said they **use earplugs**

What do we understand from these insights?

People are aware of the harms of noise pollution and often go to playing loud music or similar to block out noise, which is harmful for the ears and could cause underlying damage to ear drums. We also see that people can't seem to find a moment of silence and when they do, it's often by going somewhere quite outside the city, majority of people also do prefer listening to something in the background to help them fall asleep. The preference for silence is increasing and users like having their options open because it depends on the task they are doing, whether to relax, read a book, study, work on a task or fall asleep.

With all that being said, *how can we utilize UX design tools and principles to create a product that creates a daily immersive experience that counteracts noise pollution and enhances quality of living in the city?*

## The Value of UX Design

UX refers to the journey, emotions, and overall experience a user goes through with a product or a service from first impression to the last. The term UX was coined by the cognitive psychologist, human centered design guru and UX legend Don Norman in the 1990's<sup>[4]</sup>; he introduced the world to the design principles in 1988 through his book "the design of everyday things", technologies will keep on developing and emerging, but these **design principles remain timeless**, and we see them applied everywhere especially in companies today investing in UX putting the user first in every step of the way; according to a study by Forrester, every dollar invested in UX brings \$100 in return<sup>[5]</sup>; this accounts for a 9,900% ROI (return of investment). Apple spent over \$26.25 billion on research and development (UX design) in 2022 alone an astounding 84.3% increase from \$14 billion in 2018<sup>[6]</sup>

Setting a specified amount of time and budget in UX can 100% aid in the growth of our business or projects because it helps us in making informed decisions about user preferences which aids us in understanding our users on a personal level, what brand doesn't want happy and satisfied customers?

As mentioned earlier, UX takes the user's journey and impressions into account, the way this is done is through "user-centered design". According to Don Norman's "The Design of Everyday Things"<sup>[7]</sup>, **human centered design** is a design philosophy that ensures designs are curated for the needs and capabilities of the user. It is a design philosophy and is often done through observing the people around you. People often find themselves unaware of their true needs and even unaware of the difficulties they face because we are so used to being surrounded by bad designs. **Its is called human centered design** because we put the human behavior, needs, capabilities first and we implement design in a way that satisfies and accommodates to those user needs.



## UI/UX in SDLC

Consider the table below to understand the difference between user interface and user experience, often though in IT they are seen utilized together they actually cover majorly different aspects<sup>[8]</sup>.

The User Interface	The User Experience
Aesthetics and looks like colors and typography	How the application / web interface works (functionality)
Layout of the application or web interface	Considers the users' needs, goals, and navigation and empathize with them
	Prioritizes ease of use and effectiveness

More companies today are becoming aware of the value UI/UX , creating any software follows the system development life cycle, it's wise to keep in mind that poorly designs interfaces are frustrating and confusing, if we don't accommodate to users, our business fail. There are many models of SDLC from waterfall to spiral and agile; I will cover waterfall and contains 5 main steps<sup>[9]</sup>:

1. **Requirement analysis:** this is the first phase of SDLC, and it involves planning out the business and functional requirements, "what do we need to get the project going?" This could be stakeholders, hardware, or software. The way UX is applied in this phase is by doing research on users to map out their needs, their pains and empathize with the user to evaluate how to accommodate to their needs.
2. **System design:** based on the previous step we can now design an overall idea for the project, it could be a logical or a physical design, in UX, this is where iterative design is applied where we create multiple iterations of the design to reach a desired outcome whether it be for visual design and aesthetics (UI) or even functionality and interactivity with said project (UX)
3. **Implementation:** also known as the programming phase, this is where UI/UX developers lead in making the design come to fruition with a main focus on the user interface
4. **Testing:** we take our last implementation and test it with users either by focus groups or sharing the application/software and recognize their first impressions, how they walked through navigating the application and if it fits within our expectations, through testing multiple times we go back to stages 2-3 to ensure that we can move on to the next stage
5. **Deployment & maintenance:** this is where we release the application into the world and observe how users feel about our project usually through feedback, based on this good or bad feedback we maintain our application or add new updates to patch things up and make sure we're giving our user the best experience; the SDLC is an ongoing loop that we should follow if we want the best outcomes

## Evolution of headphones investigated

One of the first things we were introduced to in human computer interaction is the fact that throughout the years technology hardware has decreased in size; take computers as an example, computers used to be the size of refrigerators and today they're the size of your hand and even smaller like smartwatches and smart phones. We see a similar trend in headphones<sup>[10]</sup> and looking at the future we might completely remove the dependency of having a physical device such as headphones or earbuds.



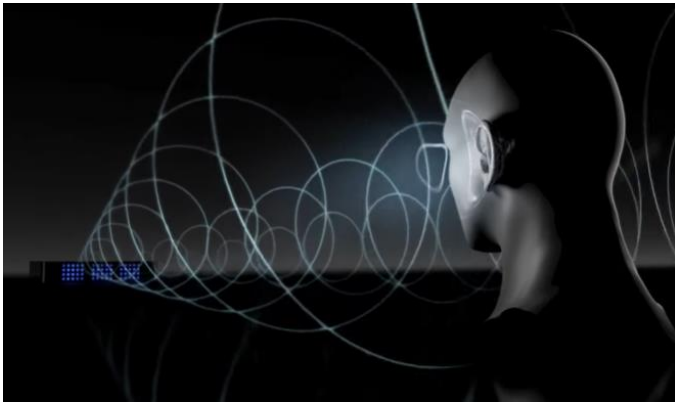
And through my investigation I came across this meme<sup>[11]</sup> that I had to share in this report:



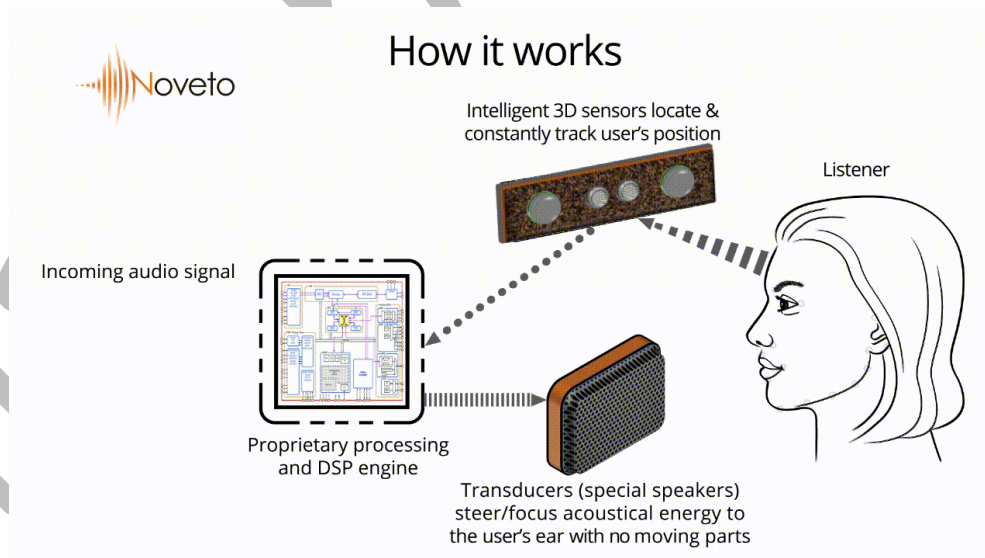
In all seriousness though, this tells us that people are noticing a slow yet real paradigm shift in headphones.

## What are the current solutions available?

The current available 3D sound beaming technology is known as Noveto™, it is an unbelievably life altering technology that tracks the human's face and ears through a 3D sensing module and sends sound directly to them through ultrasonic waves, a one-of-a-kind sound output unlike headphones or regular speakers. So basically what that means is that the sound reaches your brain which creates sound pockets of ultrasonic wave energy just outside your ears, you hear the audio while others don't without the need of headphones. This is done by constantly tracking the person's ears and face which allows "the sound to follow you" making any encounter with sound whether in a conference or watching a TV show immersive and engaging<sup>[12]</sup>.



A GIF for demonstration



I highly recommend you watch this video to get an understanding of just how amazing this technology is:

<https://www.youtube.com/watch?v=IUb7H71kLRE>

The Noveto currently looks like this:



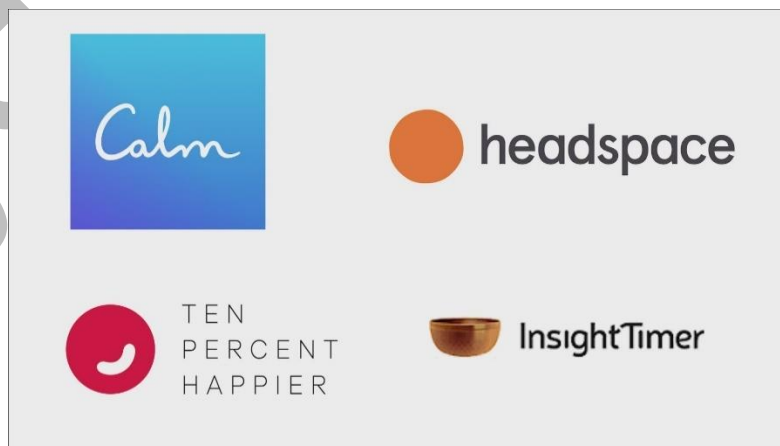
And what I want to do is utilize 3D audio beaming technologies into something **portable** and acts as what we know today, wireless earbuds of course minus the earbuds, shifting the entire paradigm of audio devices we know today.

I want to make this product paired with an app that has these main features:

1. to pair connection with the new-generation device
2. offers pre-recorded audios especially made for spatial audio experiences
3. a main focus on the following genres: nature sounds, guided meditations, enhanced focus, and sleep talkdowns.

What about wellness, meditation, and focus apps?

Apps like Calm and Headspace offer services in areas like **mindfulness** and meditations, but for **focus** I mainly saw app time trackers and habit trackers, apps for sleep were mainly sleep trackers and schedules and I saw no apps that offered customizability and downloads or even the 3D spatial audio mechanisms.

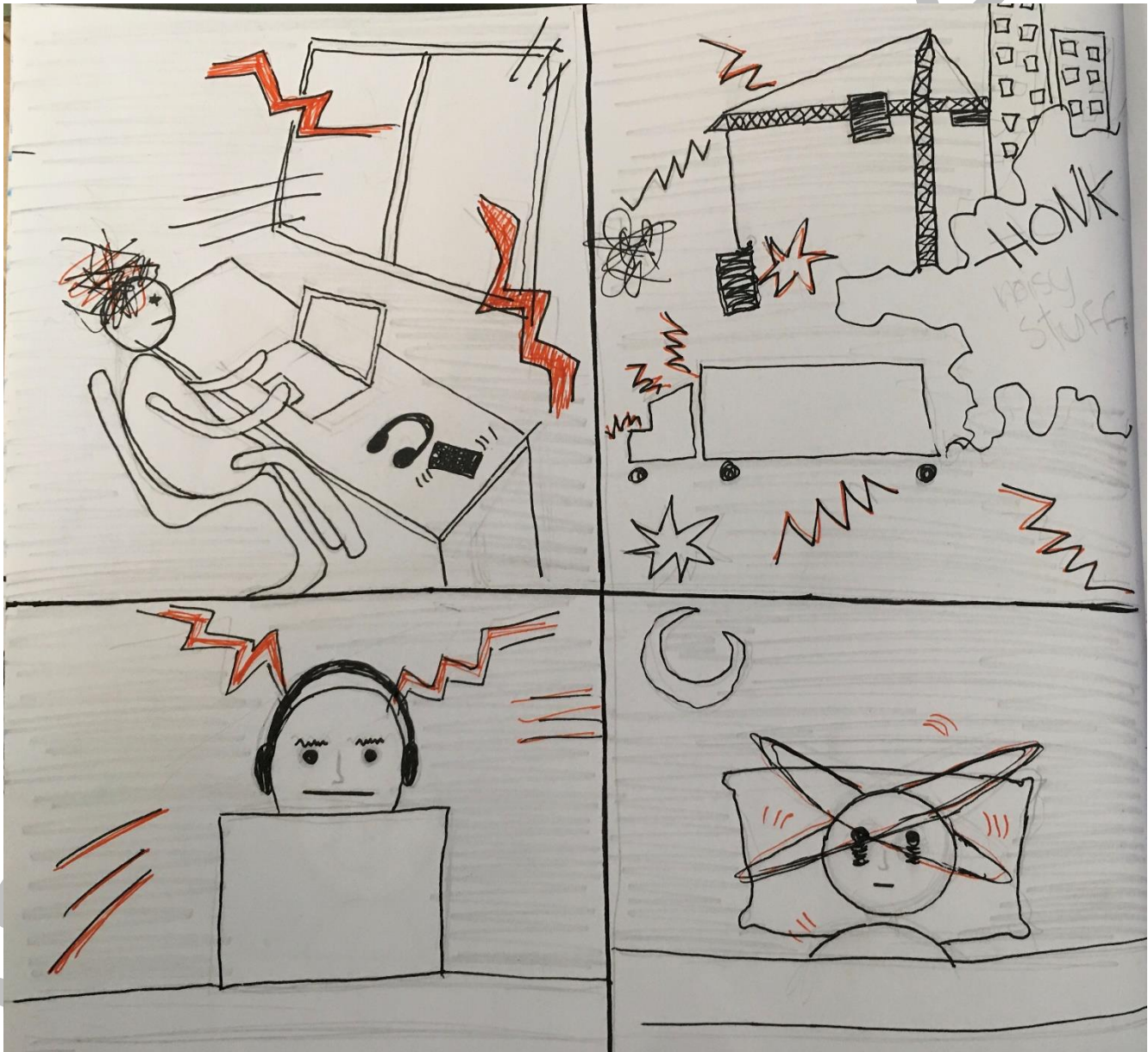




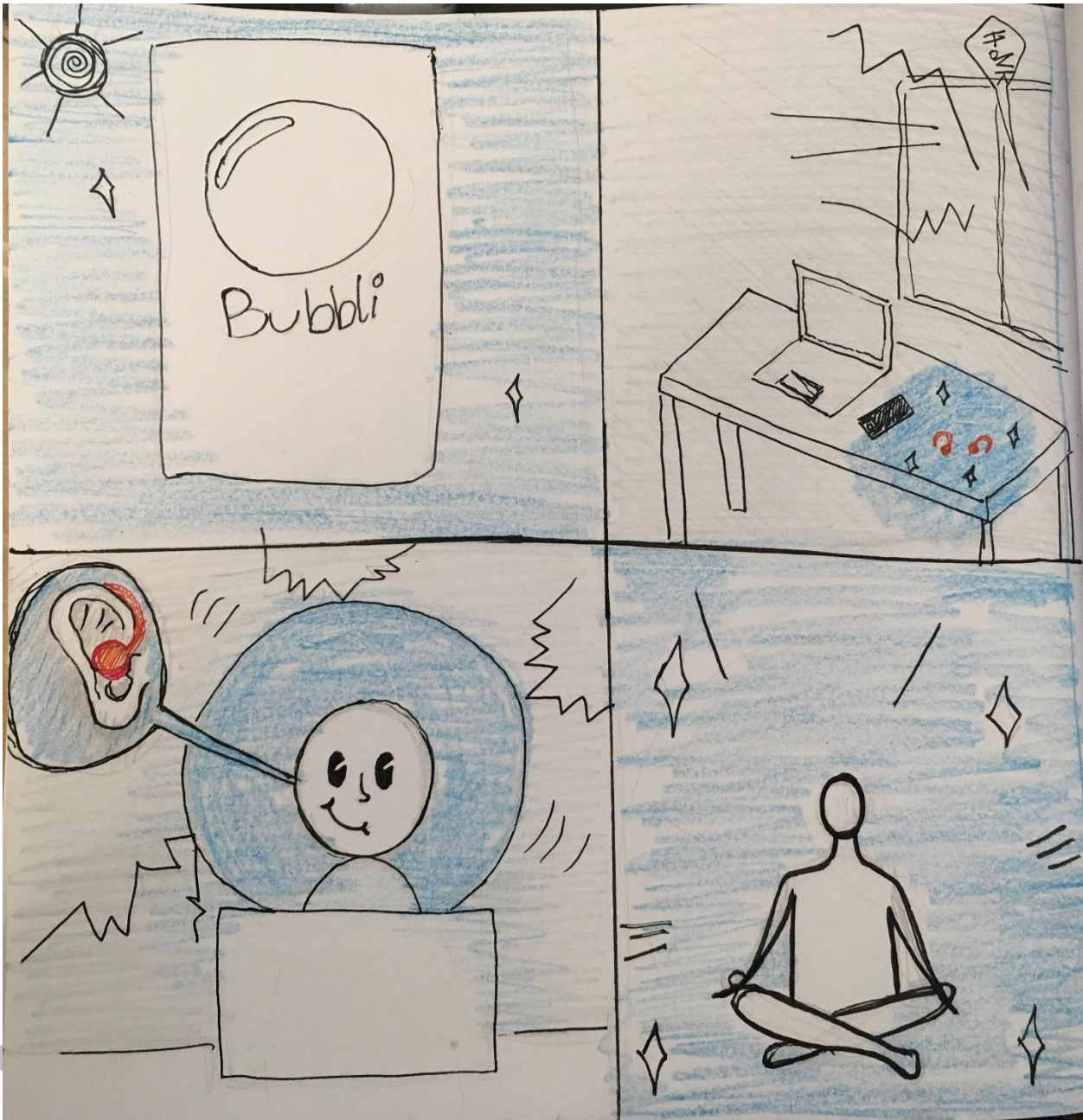
## Allow me to introduce you to the Bubbli

Bubbli refers to "My Bubble" in slang Arabic, the idea behind the name came from the phrase, personal bubble which is used to describe someone's personal space. The main point of Bubbli is to mediate users into finding comfort within their own space at any time, any place. Utilizing sound beaming technologies Bubbli will provide a daily immersive experience enhancing the quality of life in the big city.

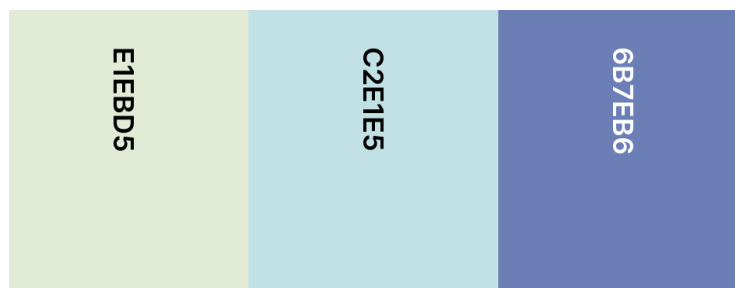
for us to understand what experience the Bubbli encompasses, allow me to take you through a journey I like to call **"Life Without Bubbli"** (these were initial sketches for the story board and idea behind the Bubbli)



# "A Life With Bubbli"



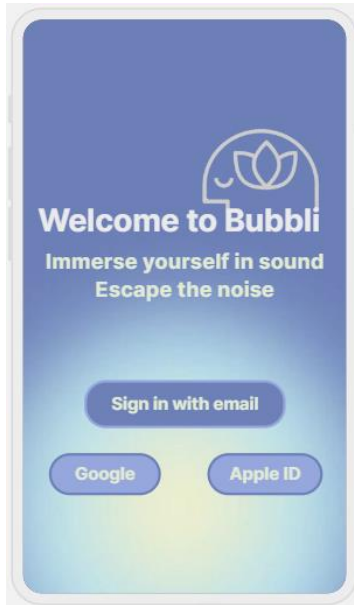
Blue is the color of safety and stability which is why you'll see I use it a lot throughout the process, this is my 3 colors palette and ill use variety of them and also utilize dark mode in my app



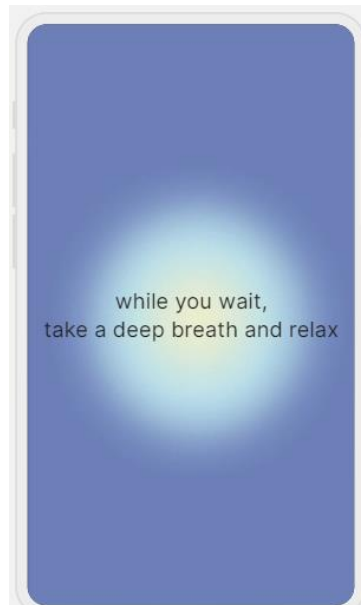


## Prototype for Bubbli App

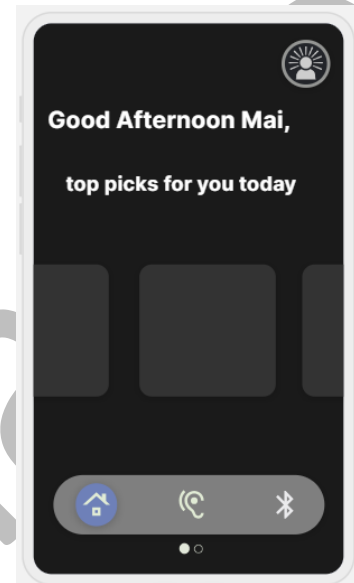
I utilized the website Uizard to create this initial prototype for the Bubbli App, and I used Icons8 to make some custom icons that I couldn't find in Uizard you will see in these screen shots part of the branding, as you go through the screen shots ill describe the different path the user can take within the app.



*Welcome Page: users have the ability to sign up / sign in with pre-existing emails like Gmail or apple ID*



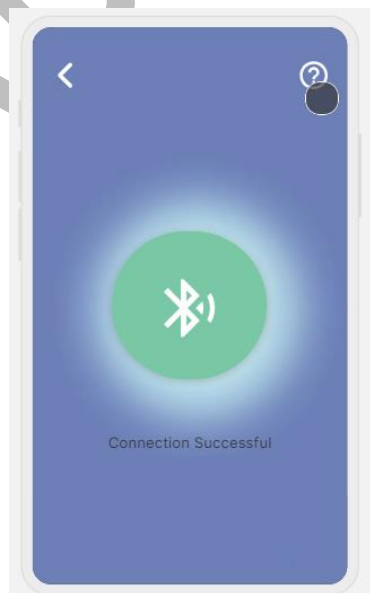
*Loading Page: while user's account is being set up*



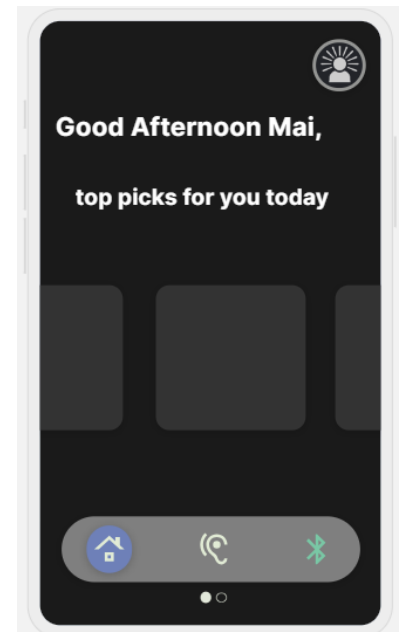
*Home Page: Nav Bar lets user know where they are, assume we press the Bluetooth icon*



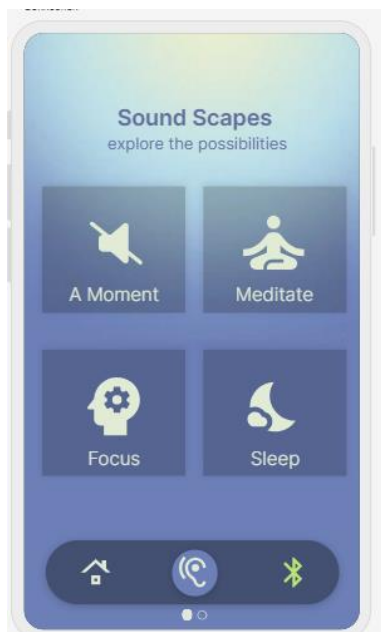
*Connect page presses the huge button in the middle avoiding any errors*



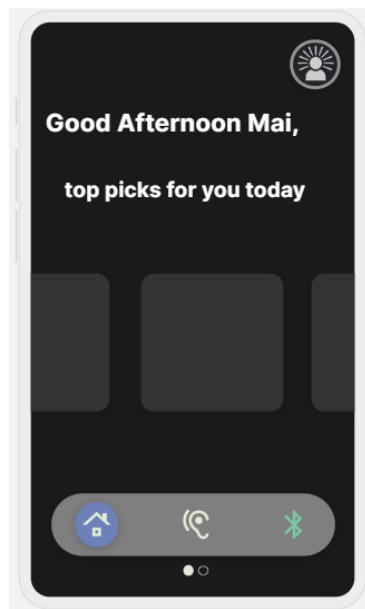
*Connect Successful: iPhone vibrates, and button turns green, assume we press back*



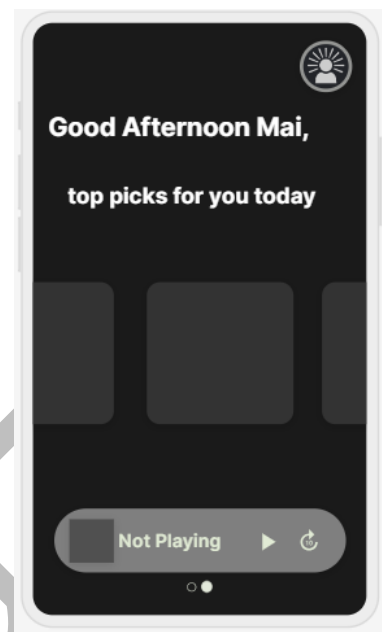
*Returns to Home Page and Bluetooth button is now green, assume we click the ear icon*



*Soundscapes Page: consists of 4 main modes as seen above, the icons are indicators for each genre, circle around the ear icon in Nav Bar lets the user know where they are right now*



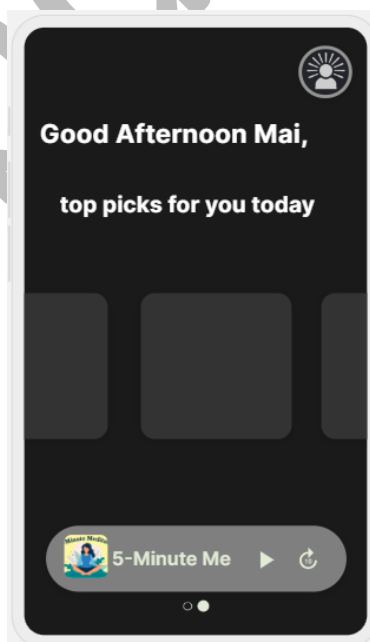
*Assume we go back to home and user swipes Nav Bar, the two little dots I made are indicators for whether they swiped or not*



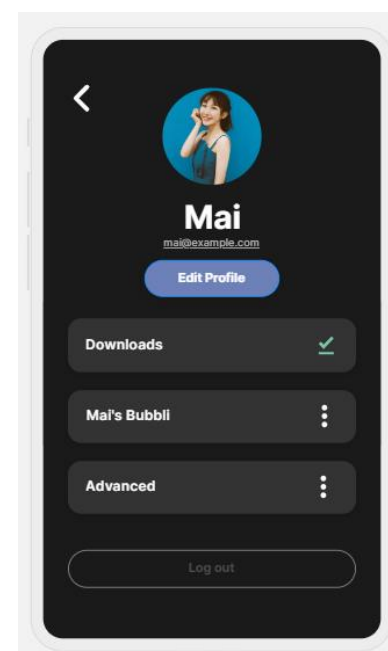
*User can see if anything is playing and to avoid errors with swiping the nav bar I made it just show a pause/play and a skip 10 secs*



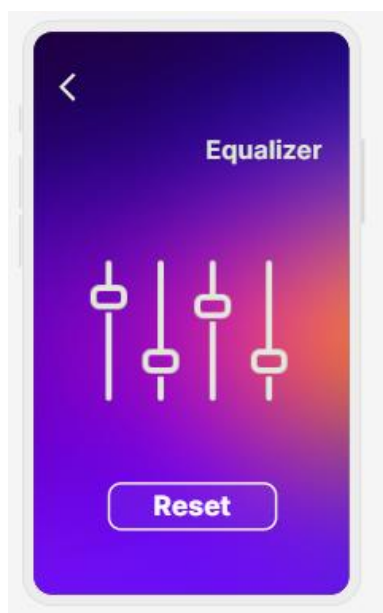
*Assume user presses on the image to see what's playing, it takes them to this very straightforward screen with volume adjustment, skip ahead 30 secs or go back 15 (half of thirty seconds in case user misses anything while skipping) and also an option of scrolling through the audio which also shows how long the audio is. The horizontal line on top gives the feeling to swipe down and when you swipe down →*



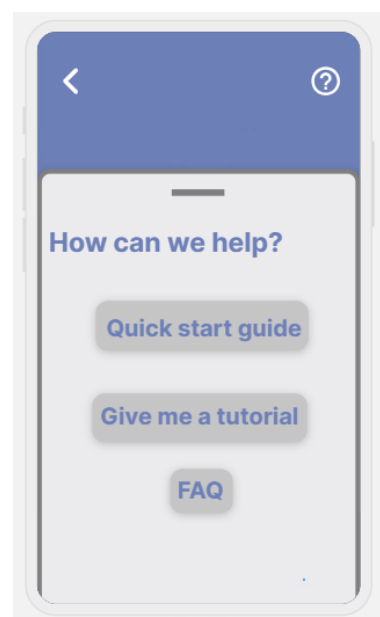
*→ You are back at the home page, or whatever page you were on when you pressed the audio image. Assume user wants to see their profile*



*Profile Page: user can edit profile, view / play downloads, Change Bubbli name or change the LED color on the Bubbli, see advanced settings or even logout*



Equalizer Page: allows advanced users (or those that want to experiment) in tuning their environment, I purposefully put the equalizer in the advanced settings, and for error prevention I put a reset button incase a novice user decided to experiment with the spatial audio but wants it back to original, the different colored screen also gives a feeling that this is stepping into new territory



Last thing I want to point out is the help tab you can find while connecting to the device

For the UI, I took some inspiration from Apple's Podcasts and somewhat from Spotify, the user does not need a tutorial to get started since the UI was set in place to allow the user to discover where everything is, if you swipe the nav bar you can see if you're playing anything and if you swipe back it takes you back to the nav bar. I made significant use of icons and as little words as possible since I wanted this app to feel inviting and not chaotic with a lot of information. Users have the ability to download tracks so they can be able to listen anywhere, like on road trips or on a plane where there is no Wi-Fi access. To make the app feel as inviting and has a "human feel" I created the loading screens to have specific messages like "while you wait, take a deep breath and relax"

The principles and heuristics of design applied in my user interface are:

- **Aesthetic Design:** the brand feel, and identity can be clearly seen throughout the UI
- **Consistency and Simplicity:** all pages in the app follow the same color scheme, the relaxed and easy on the eyes interface is inviting to users and allows them to feel comfortable even though the tech involved is high level and could seem intimidating, the application can be used by all kinds of users, novice, or expert.
- **Feedback:** when phone connects to Bubbli, the app will give confirmation that the device is connected, and the phone will vibrate to assure the user that device is ready for use. In the screen, a grey button describes that there's no connection and when it turns to pastel-green the connection is found. The device also has two colors to indicate connected, or not connected a white blinking led means the device is looking for a connection and a green indicator lets us know device is connected, the LED can be turned off from the application.

- **User control and freedom:** the sound scape page allows the user to choose what genre they would like to listen to, whether it is a guided meditation, focus, sleep talk down or noise cancelling option (a moment of silence). The user can also go to the equalizer menu and adjust the spatial audio according to what they feel like.
- **Help & documentation:** can be found when connecting to Bubbli device in case any user finds themselves lost or if they want to understand how the app works through a tutorial. The point here is that there is a **choice** to get a tutorial and not forced when the user first launches the app

## How I applied Fitts's Law

Fitts's law states that "the amount of time required for a user to get to a target area is a function the distance to the target divided by the size of the target"<sup>[13]</sup>, the larger the target, the less time needed to find it keeping interaction costs at a minimum. I applied it in the Bluetooth page that has one large button to connect to Bubbli device, 2 clicks from home -> Bluetooth->connect


Reaching sound scrapes also requires one tap, the sound scrapes menu contain 4 large main targets that users can explore, this limits from having too many options which could make users confused or indecisive.

I purposefully made reaching the advanced equalizer menu and back to home with a bit more steps

Home -> profile -> advanced -> equalizer-> back button -> back button -> home

## User Personas

The reason we create user personas is to help us in building a story within our product, with a focus on the user's journey. It's a major part in any product / service design and research as well as in UX design and research. This helps designers and developers to empathize with users, gain their perspective and recognize what needs users have so we accommodate to them accordingly. I feel like for my user personas its not someone in specific but for anyone however there are specific pains and challenges my product tackles and that's the focus here, consider these 3 main user personas.



⌘ **Mai**

Age: 28

STEM professional

Lives with her family

⌘ **About Mai**

Mai is a hard working woman who cant seem to find any time for her self, she's noticed that work has left her feeling burnt out whether its dealing with her boss or coworkers or dealing with all the traffic on the way home which she shares with her family of 6. Mai feels guilty when she takes time off or engage in self care; she is looking for new ways to take care of herself and her well being and wants to feel like she has a comforting space she can come back to, however she isn't sure where to start

⌘ **Drivers and motivators**

- Prove herself to her boss and co-workers, always on her A-game
- looking for a safe space where she can let go and relax
- already very involved with technology

⌘ **Fears and challenges**

- Fears that she will be burnt out from building her career and achieving her high set goals
- cannot find the time for self care and relaxing
- bombarded by noise and people all week around and its taking a toll on her



## :: Leith

24

Tech-Geek and Gamer

BSc in computer  
engineering

### :: About Leith

Leith is a person who works from home, his job is abroad and he's the top and the boss's go-to for difficult and last minute tasks. when he has the time, he treats himself to new tech product in the market and tests them out to see if they're worth purchasing or not and is a big fan of writing feedback to these companies. He does have a general understanding of UX since he is interested in the gaming world. Constantly looking for new ways to gain a more immersive experience, we have what Leith is looking for

### :: Drivers and motivators

- Driven by new tech in the market and is always caught up with tech news.
- Looking for a tech product that would actually provide him with the immersiveness he's looking for

### :: Fears and challenges

- For his age, he's the top in his company and often find himself working extra hours unlike his coworkers.
- Working remotely requires a huge amount of self discipline and focus to stay productive
- Struggles in finding ways to disconnect and get in touch with nature since he's bombarded by work and always at home in the big city



## :: Salwa

Age: 36

Yoga Practitioner

Mum of two

### :: About Salwa

Salwa is a loving and caring mother of two who gives yoga classes to other women. She's constantly looking for communities and people that share the same spiritual interests as her and likes educating people on how to preform yoga for all purposes and has recently found an interest in incorporating meditation into her routines.

### :: Drivers and motivators

- driven by her passion for yoga and helping others improve their physical and mental health.
- She is motivated by the sense of community and connection that comes from practicing yoga and sharing her knowledge with others.
- Salwa is looking for tools and resources to help her deepen her own practice and incorporate meditation into her routines.

### :: Fears and challenges

- Salwa's challenges include finding time to balance her family life with her yoga practices and teachings
- Finding tools and resources to help her deepen her meditation practices
- Finding ways to create a safe and immersive experience for her yoga students

## Testing Plan

Since I don't have the money to create a Bubbli device from scratch I will test it by giving users a description of the product and seeing their feedback on it. My favored way of testing is through observation, honestly because I feel like I can get a full understanding of the users emotions throughout the test, its more personal, I consider myself a socially smart person and can pick up on social queues so I can see what the user feel throughout. Of course we have the tech to create new tests however the "human feel" or "human touch" in a UX design must be investigated through a person. If the test was about collecting numbers and data I would go for something like eye tracking just so I can see what catches the person's eyes first.

As for the user interface, I will show it to 3 test subjects and see how they navigate through it and if it fits the journey I had in mind and like we saw in the previous sections. To clarify, the scenario are:

1. Sign up, will they do it manually or use google / apple ID?
2. Navigation, is the navigation clear and can they understand how the app works without the need of a tutorial
3. See how people feel about the navigation bar swipe also being the "now playing" section, do they find it confusing or inconvenient or something new and interesting?
4. Finally I will ask the test subjects what they think about the overall idea, branding and image that I'm trying to get across

## Results

My test subject included 3 people, a 25 yr old female who is interested in meditation and actually just found out about her that she is deaf in one ear (new user persona perhaps?). the 2<sup>nd</sup> user a female 19 yr old that's solely dependent on her beats headsets and that usually listens to chill music or white noise while studying. My 3<sup>rd</sup> subject was a 19 yr old guy who's super into gaming and new tech. I took some notes about their overall experience.

About the UI:

- The girls thought the app was really visually pleasing and they liked the simple interface
- They all liked the navigation and felt that it was clear and concise
- The 19 yr. old girl liked the idea of nav bar doubling as a "now playing"
- The other two subjects would prefer if it was like the traditional nav bar alone and now playing alone section
- All subjects loved the soundscape page and liked that the options are specific and to the point
- The 25 yr. old suggested that some users (like experts in guided meditations and such) take a part in the app and upload their work, she also likes podcasts and felt that we can a grow a community through this app
- The 19yr old girl asked if they could use the app even if you don't have a Bubbli device.



About the Bubbli Device, I showed them a sketch of how I want the Bubbli to look like:

- The design of bubbli is too small, one of the feedbacks was, so what if I lose it? How do I charge it, can I answer phone calls with it, and all are valid questions.
- The 3 subjects really liked the idea since they all live near construction and close to traffic (Khalda and Garden's)
- They said they'd be really impressed if this product could come to real life, after I showed them the Noveto video which they found really impressive and weren't aware that there is technology this advanced today
- A feature the 19 yr. old guy suggested is the compatibility with Spotify and it not being just limited to the application
- They loved the name Bubbli since it does feel like an experience in a personal Bubble.
- The 19-year-old girl said she wouldn't use Bubbli all the time because she likes her headsets more and says that she's used to using them all the time.

### Future iterations based on results

According to our results, I concluded that maybe it is too soon to introduce new tech into the market, think of it this way; and its simple...people like using headphones.

It's like the feeling of whether to read from a paper book or a PDF, the most known experience is the paper book its what people are used to and actually prefer. We also notice a trend that we're going back in time like clothing styles (90's / Y2K) the majority of gen-z use headphones as an accessory; throughout the years devices are getting smaller we also see trends from the past come back, so are the people ready for Bubbli...probably not but it does cover and immersive user experience and allows people to gain a new perspective about technology and quality of sound.

However the application does have space for growth and can be utilized to create a community within Amman and connect people so we can understand how to cope with the inevitable and sad urbanization of our city.

Through iterative design we can and will reach a middle ground that caters for the user's needs and gives them an opportunity to experience new technologies. I would want to make the Bubbli app compatible with the majority of Bluetooth devices and not just Bubbli device. I would also add the feature of experienced people in the field like psychologists or those who have podcasts about wellness and mindfulness to share their wisdom with other users. And this is good because people in Amman are becoming more aware that mental health is not something to be frowned upon like the previous years. And lastly, put the navigation and playing now section separately.

## The Seven Stages of Action

The Seven Stages of action is a technique used in the UX world that helps in breaking down the user experience in 7 different stages. In human computer interaction we have the gulf of execution (actions taken to accomplish a specific goal) and the gulf of evaluation (understanding the state of the system) and they bridge between user goals or available actions in the UI and the system output and how our user perceives the output here's an example on my design:

- **The intention:** the user realizes they feel over stimulated and want a way to calm down
- **The goal:** user wants to reduce their stress and get grounded, maybe the user goes online and looks for different meditations then comes across the Bubbli App
- **Decision:** the user now decides if they want to try out Bubbli or not.
- **Selecting Action: download the application** either through the app store or when they were searching on the internet the link takes them to the app store
  - User then presses download
  - User now waits for app to finish downloading
  - User opens the app
  - User signs up (either manually or with Apple ID/Google)
  - User discovers Sound Scapes page
  - User picks meditation option
  - User views meditation options available
- **Execution:** User picks meditation accordingly and goes through the session
- **Perceiving the state of the world:** user goes through the meditation session picked
- **Evaluation:** the user now sees (evaluate) how they feel after the session, did Bubbli help him calm down and feel better? Or did this not achieve the goal he had in mind?

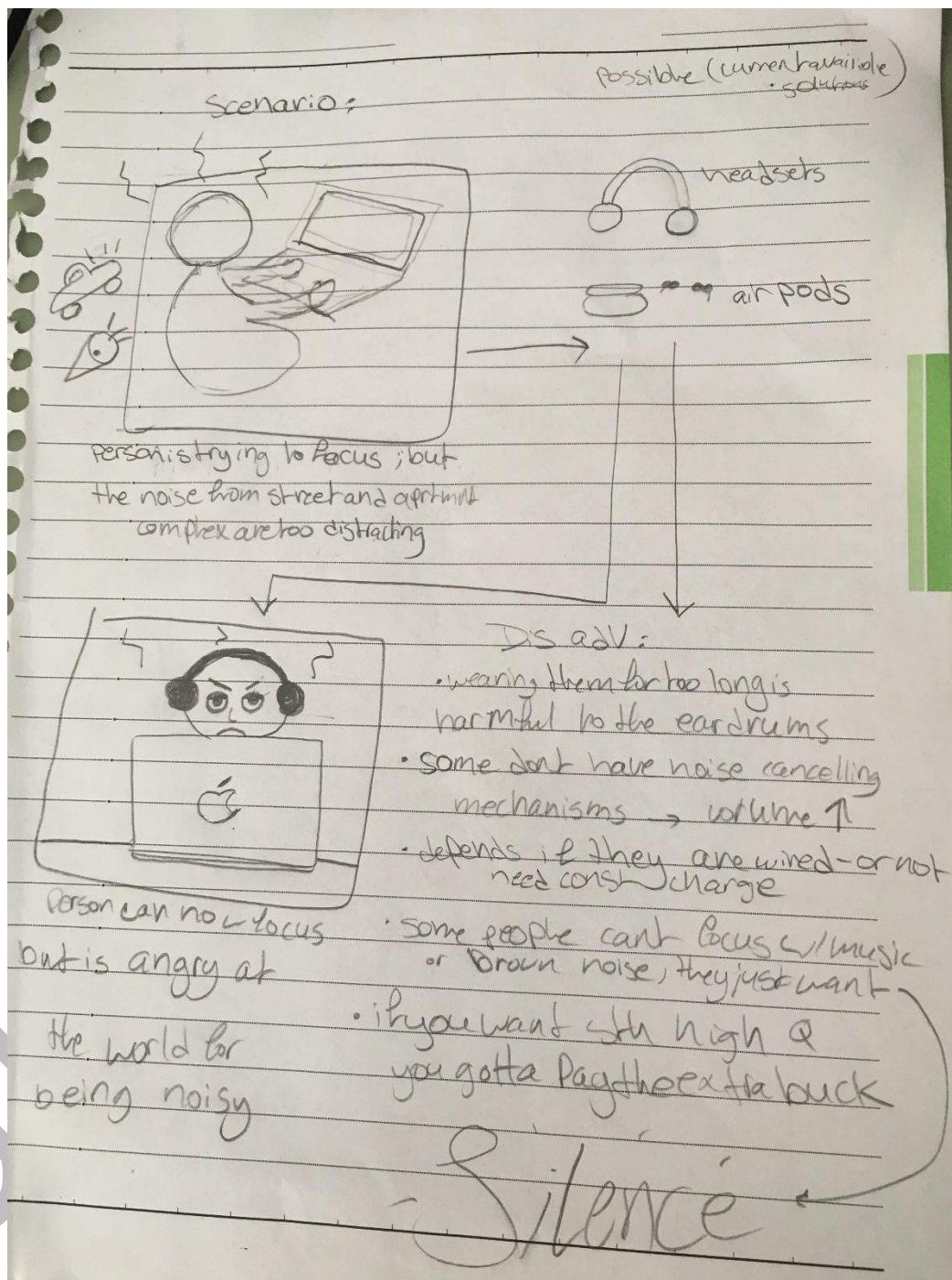
## Ideation

I will tell you my story....I moved to Khalda 5 years ago, things were fine. It was a lovely and quite place, until this year when everyone in Khalda decided to buy half of the open lands and build even more apartment and store complexes, like we didn't have enough to begin with. I got really angry because now there's construction on 3 different apartments right next to my house and by chance all of this construction and all of these cars and traffic got to me during my finals month, they weren't a problem for me and I tried to ignore them for as long as I could until it actually started interfering with my work and sleep schedules, and that's a problem. I had to believe that for sure I am not the only one who deals with this. Khalda is only one of many locations in Amman that are experiencing a disturbing urbanization, they are making these buildings for quantity not quality, just keep that in mind.

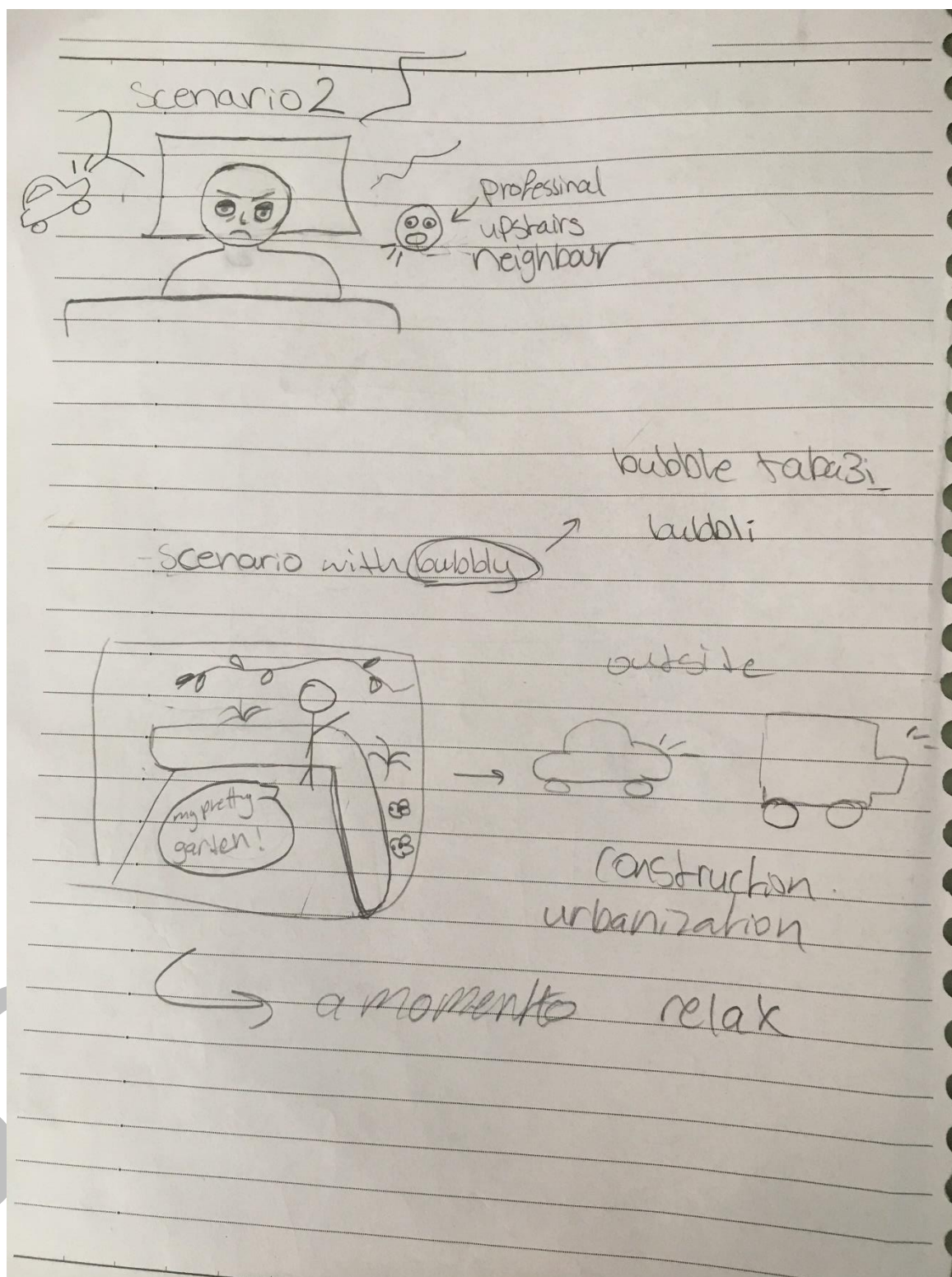
Aggravated, I grabbed my laptop and had to make a form to see if any one is struggling the way I am and if there something we can do about this, by coincidence I came across sound beaming technology then boom the idea sprouted in my head; Amman is turning into a sink hole with so many ugly buildings, we're losing our touch with nature, and most people don't have the time or resources to go out of the city to get a moment of silence and change of scenery. **So how can we find a way to bring that experience to them whenever they feel like it?**

I made multiple sketches on paper and tablet that I will share with you here (im not the best artist so bear with me):

Sketch 1:



Sketch 2:





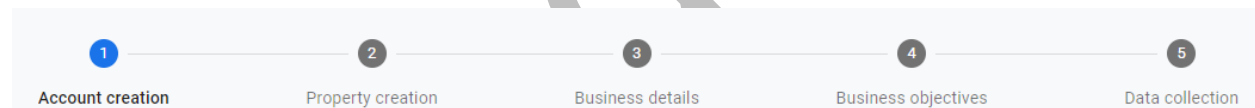


## The Software I used for my UI/UX process

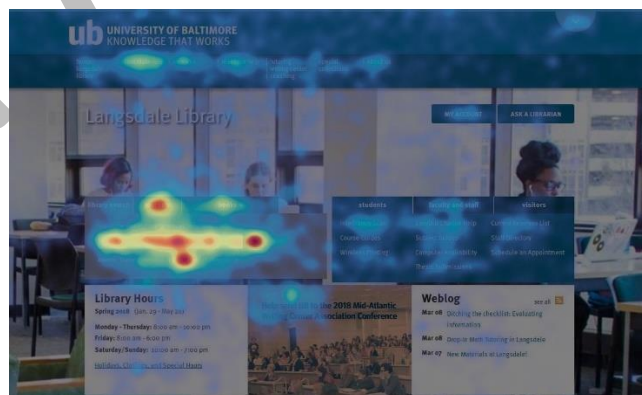
- Google forms: for my primary research
- Concept: for my digital sketches
- Figma / Uizard: for my user interface, figma was a bit advanced for me but Uizard was much simpler to use and make a UI design, especially for a beginner the apps definitely made my life 100x easier and I like that their really customizable. Figma, a website for UX actually has UX heuristics applied it was like photoshop but not intimidating like Adobe Photoshop.
- UXpressia : I used it for my user personas.
- Coolers: to pick my color palette
- Icons8: to create my own icons in the UI

Other apps that help in UX analytics and user behavior tracking are Google Analytics and Hotjar, I did not personally use them however, these websites are well trusted and offer great solutions in the UX field, they're well recognized, easy to use and apply. They enhance organic traffic to your website and helps us UX designers gain insight into our users, so we empathize and constantly create effective designs to enhance the user experience.

**Google Analytics**<sup>[14]</sup>: is mainly used for search engine optimization which in short words, helps your website pop up more when users search in any search engine like Google or Bing. It also offer web analytics capabilities website / app traffic, where majority of your users are visiting from (geographically). They offer a very user-friendly interface and makes it really easy for anyone starting a website or app to keep up with their customers with just five easy steps to get you started.



**Hotjar Tracking**<sup>[15]</sup>: trusted by over 1 million websites, Hotjar is a UX insight tool which allows developers and designers to view feedback data and behavior analytics from users on their websites which aids in a more comprehensive understanding of your target users. One of the main features that stand out is that it offers visuals such as heatmaps to see where users go to the most or where they click the most:



Through this tracking we can see if users take a while to get to their target (Fitts's law) and to see what's the most frequently used target to make it more accessible to the user.



## The Future of Bubbli : R&D

Per mentioned earlier the world is not ready for a paradigm shift in headphone technology, however the Bubbli app, with a few skews and iterations we can create an app for a niche market in Jordan and worldwide, we know the facts:

- Meditation and mindfulness are gaining recognition in the MENA region, in the forecast period between 2022 and 2028 the market for mindfulness apps are expected to grow at a CAGR of 25.6%. sitting at **\$71.10 million in 2028** <sup>[16]</sup>
- An investment in UX is an investment in the user, as mentioned above, for every \$1 invested in UX companies saw a return of \$100.
- We have very specific user personas, and we have a deep understanding of our users, and we empathize with them

The next steps would be to test the application and we have result we are happy with and wish to continue that route then we publish the application. We also focus on marketing and barding our application either through TikTok or Instagram and I would also suggest reaching to people like Zenergy and those communities that already have an interest in these practices to brand our app for us, one thing I know about Amman is that word of mouth always works.

## A summary of my UX journey

Throughout my document I took you through my journey of how I came to the idea of creating bubbly my main focus is that not everyone has the privilege to live a full quality life especially with the bombardment of noise pollution and urbanization of the city. In my solution I tried combining both future technology and the user experience I wanted to utilize away for users to get an immersive listening experience at anytime and anyplace.

My idea shifted into the place of mindfulness because the space that these technologies create are like your personal bubble making you feel comfortable and safe. Throughout the journey I explored current solutions available. I also explored how users currently deal with noise pollution I also created a sketch of the user's journey without Bubbli and with Bubbli. This device is paired with an app that offers specialized audios covering mindfulness and for relaxing purposes and nature sounds; one of the main things I wanted to achieve is the fact that you can have a moment of silence just with the press of a button.

I created a prototype for the user interface of bubbly I also ensured that they abide by the heuristics and principles of design I also made consistent branding and I chose a color scheme that matched with the mood I wanted to set for this application. I created a test plan and tested the user interface with three different test subjects, and I came to these conclusions

- Regardless of the growing technology people will always go back to their traditional ways, the ways that they are comfortable with. Not because they don't want to experience new things but because it's what they're used to

- people love the feeling of a community; we love to feel like we belong; creating a sense of community within the application seems like a step in the right direction
- Creating this app compatible with many devices instead of just one device is also a step in the right direction

In my report I also share my ideation process and how I came to the problem by observing the people and my surroundings and finally I cover different UX tools, and I talk about the value of investing in the user experience to avoid losses in the long run, we shouldn't underestimate the R&D process in companies and in creating products and services

*<end of document>*

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