Visual hierarchy is a UX principle that became much more prevalent in our project as we progressed through it. In Section 3.13 of the course materials, the importance of visual hierarchy was highlighted to us. It was something that I was aware of, however on a superficial level. I knew that the positioning of elements was an important design feature, but I did not appreciate the value of other features such as scale, contrast, arrangement, and proximity. Coming from an analytical background, it was hard for me to understand how we could make users feel more at ease with a product without them even realising why. In our initial design, we focussed heavily on our users' mental models. To gain an understanding of our interface should look, we asked quantitative questions about our users' morning routines, their desired smart mirror features and desired tech integration in the initial survey ("Group 5 Initial Design Report" pages 16-27). Having analysed the response data and visualising them graphically ("Group 5 Initial Design Report" page 29), we know had a better understanding of what features or functions of the smart mirror would be of most value to our users. These results helped us to plan the hierarchy of our interface, which was visualised using wireframes and prototypes ("Refined Design Report – Group 5" pages 7-10). My focus was on ensuring that users could immediately access the most crucial information, like schedules and reminders, especially since our target users prioritise productivity and organisation during their morning routines ("Group 5 Initial Design Report" page 28).

Applying visual hierarchy principles in practice ensured that users found the interface intuitive. For instance, we strategically placed the to-do list in the middle section of the mirror at eye level, as users identified this as the most valuable feature. We placed the to-do list on the right-hand side as we assumed that most of our users were right-handed (we should have asked this in our initial survey). As a result, users could engage straight away with their to-do list without having to search for it. During the testing phase, this decision was validated as our users vastly preferred Interface 1 (to-do list on right-hand side) over Interface 2 ("Additional Survey Visualisations" page 18). Our user survey also highlighted an important hierarchy feature that we had glanced over, the position of time and date. Many of our users highlighted in the qualitative sections that they preferred the time to be top left as this feels intuitive and it is the first place they look. I have learned through practice that while it is important to arrange your key features prominently to the user, you need to ensure that basic information and secondary features are presented in a manner that feels intuitive to them to further enhance their experience.

Going forward, one of my main takeaways from this project is that visual hierarchy is of upmost importance in maximising a user's response to a product and it often takes until it is visualised to users before they understand how they would like the features presented to them. I would ensure that the initial survey gathers more basic hierarchy information such as their preferred location of features and their dominant hand/eye. This reduces the frustration for users and allows them to effortlessly conduct their actions. I would also experiment with different design patterns and ensure that elements are grouped logically based on user needs, tailoring future designs for varied user demographics and tasks. As we carry this project further, testing and refining visual hierarchy with different user profiles will remain a critical step to improve usability across iterations. This would allow us to create a hierarchy, or potentially customisable hierarchy that would suit the needs of many of our other personas ("Supplementary Persona_accessibility", "User Personas Emily old"), making the interface more accessible and intuitive for multiple groups of our target demographic at once. The refined design also highlighted the value of the User-centred design theory. This is an iterative design process in which the designers focus on the users and their needs at each phase of the design process. Were we to have further iterations, our users needs would need to once again be the main thing we focus on during development. Constant interaction with users, collating user feedback, implementing user feedback, refining mental models and personas are all key aspects which I would ensure we kept at the core of development.

Another key UX Design principle which we focussed on was reducing work/cognitive load and eliminating excise. As I learned from Section 2.7 – cognitive tasks such as thinking about something or remembering information is the most mentally demanding task followed by tasks such as looking at something or finding something, known as visual load. From Section 3.26, I learned that engaging with software

engages the user in four distinct types of work: cognitive, memory, visual, and physical. As outlined in the section, the order of which type of work is most cognitively demanding goes from cognitive (most demanding) to memory, to visual, then to physical (least demanding). Using this information I had now learned, I set about trying to reduce the amount of work our users would have to conduct, focussing on the cognitive, memory and visual aspects. At the beginning of the project, I initially struggled with how to balance functionality with simplicity. I soon realised that too many elements competing for attention would increase cognitive load and detract from the user experience. Through user-centred design theory, as outlined in Norman's principles, I learned to prioritise the mental state of users and their experience of the product, which often requires paring down features and making the interface less complex.

Given that we were designing a smart mirror that helps users with their morning routine, our users were typically going to be tired when they interacted with the product and so reducing the cognitive demand required to use the product was of critical importance. In the refined design, I focused on reducing cognitive overload by adopting a minimalist approach. Following Norman's concept of "less is more," I helped streamline the interface to ensure only the most relevant information was visible at any given moment. For example, reducing the number of widgets on the screen, using simple icons, and limiting the use of high-contrast colours helped create a calm and focused environment. The result was a cleaner interface, in which the layout emphasised clarity over complexity. Helping the users feel calm was a key takeaway we had from our initial design phase, with most of our users stating that feeling "Calm & Relaxed" was an important experience goal for them ("Group 5 Initial Design Report" page 28). To achieve this feeling of calm we reduced any harsh colouring and went for a simple cool white font on the mirror ("Refined Design Report – Group 5" page 10 – Design 6) as well as keeping clutter to a minimum and removing any stressful alerts or icons.

After implementing these cognitive load-reducing features, user testing showed positive results. For both interfaces, our users (on average) returned a positive score (above 2.5) for a feeling of calm, focus, motivation, and organisation when viewing the smart mirror ("Refined Design Report – Group 5" page 32). These are all by-products of reducing the cognitive, memory and visual load. The interface is bringing positive emotions from our users. The reduction in work and excise was also validated in our survey in the question – "Are there any parts of this interface you don't like" with only one user claiming that there was too much information in either interface ("Additional Survey Visualisations" pages 12 and 15). We can further validate this response by cross-referencing it with the "Most Liked Elements for Interface 1" graph ("Refined Design Report – Group 5" page 32) where three users voted "Amount of Information" as one of their favourite three things about the interface.

If we were to move on to a third sprint, I would ensure further focus on making users feel calm. Even though it did return an above average result from our users, give that it was an important experience goal highlighted in the initial design phase, it is not as high as it should be given the focus we put into it. This may be simply because of the limitations our designs have in terms of platform and posture. Being a mirror, with a reflective background and a clear need for empty space (where the users can view themselves), there is a limitation to how creative we can get. The main goal for future iterations is to reduce cognitive and visual load. Moving on to the next sprint, I would implement principles such as progressive disclosure, which hides less essential information until needed (Section 2.7). This could be done with features like weather, health, and motivational messages, where our user group did not appreciate the space they were taking up on the interface. Progressive disclosure offers more detailed functionality only to users who seek it, without overwhelming those who only need basic tasks. Additionally, I would emphasise the importance of customisation in future designs. Offering users the ability to control the amount of information displayed to them would help reduce cognitive load even further. By allowing users to prioritise features they personally value (e.g., displaying only their calendar without health metrics), we could create an experience that adapts to different user preferences and cognitive capacities. Our users expressed a powerful desire for customisation, returning an average score of 3.5 for the level of customisation they would apply ("Refined Design Report – Group 5" page 33). We need to make our users aware of this customisation and make it easy to do so that we can simultaneously

cater for users of all levels of expertise (beginner, intermediate, expert) as learned from Section 3.7 of the course content.

The final UX Design principle which goes hand in hand with our smart mirror product is the principle of accessibility. In section 3.6 of the course materials, the importance of designing for different needs is stressed. Before the course I was aware that products had to be usable by all individuals, including those with disabilities or diverse levels of physical or cognitive abilities. I was not aware, however, of how UX designers accomplish this inclusivity and universal usability. At the outset of the project, accessibility was not at the forefront of my thinking. Being someone of able body and mind, I found it hard to put myself in others' shoes and to design for people with dissimilar needs. As mentioned in my initial reflection, it was something that we had started to consider for the project once we had learned more about accessibility goals, dos, and don'ts. We created a persona with accessibility issues, but we were unable to fully validate it with our user group, which highlighted a gap in our design that I would want to address moving forward. From Norman's design principles and the user-centred design process, I understood that an inclusive design approach would lead to better overall usability by making the product more intuitive and easier for all users to interact with.

In our refined design, accessibility started to play a more significant role. We considered features like customisable text size, ensuring fonts were easy to read in different lighting conditions, and using simple, high-contrast icons that could be easily recognised by users with visual impairments ("Refined Design Report Group 5" page 25). These changes made the interface more readable and navigable for all users, reducing barriers to interaction, especially in a visually challenging environment like a bathroom. Furthermore, we began thinking about how to cater to different user needs by offering customisable profiles. For example, a user could select an accessibility profile with larger icons or voice activation, making the interface more accessible to those with mobility or vision impairments.

Going forward, accessibility will become a foundational part of any future design iterations. One of the biggest takeaways from this project was the realisation that accessible design does not just benefit users with disabilities—it benefits everyone by improving overall ease of use. In the next sprint, I would focus more on user testing with individuals who have different accessibility needs, such as those with limited mobility or vision impairments. This would allow us to validate some of the accessibility features we introduced and identify additional improvements. I would also like to implement responsive design principles to ensure that our interface can adapt to different environments, not simply different users. For instance, as our smart mirror might be used in various lighting conditions (e.g., morning sunlight vs. evening bathroom lighting), we would need to ensure that text and icons remain legible. Additionally, the incorporation of voice commands could reduce the physical load on users, especially when their hands are occupied or wet. In future iterations, I would ensure that we not only include accessibility as a consideration in user testing but also systematically gather feedback from users with disabilities to ensure we are truly meeting their needs. By continuing to refine our personas to include more diverse needs, we can ensure that we are designing a product that is truly usable by all people. Following this approach will help us continue to build a smart mirror that is intuitive, customisable, and, most importantly, accessible to all users.

In conclusion, this project has provided me with invaluable insights into key UX design principles, such as visual hierarchy, cognitive load reduction, and accessibility, each of which played a critical role in shaping the refined design of our smart mirror. Through an iterative process of user-centred design, we were able to translate theoretical knowledge into practical applications that enhanced the usability of the product. Moving forward, my focus will remain on refining these principles by incorporating more detailed user testing, embracing customisation, and enhancing accessibility features to cater to diverse user needs. By continually gathering feedback and iterating on our designs, I aim to create an interface that becomes intuitive and invisible to the user, seamlessly supporting their needs without creating friction. As Don Norman said in "The Design of Everyday Things" – "Good design is actually a lot harder to notice than poor design, in part because good designs fit our needs so well that the design is invisible."