# Literature Review:

## Alzheimer’s and Dementia Research:

The article written by (Elfaki and Alotaibi, 2018) analyses the effect in which m-health (mobile health) services such a smartphones can have on those suffering from Alzheimer’s, the article looks at research conducted using applications and devices used within the past 10 years of the paper being written from 2008-2018 and evaluates how this may have impacted those suffering from the condition. This article looked at applications ranging from memory games to test/improve the users memory, but also to applications called ‘Backup Memory’ and ‘Tweri’. The articles analysis of Backup Memory in particular does somewhat relate to the artefact being produced, this application provided photographs of relatives and friends of the user in order to remind them who they are. This was found by the article to “helps the patient to remember who the person is more quickly”. While the artefact is related more to speech/text reminders to the user, seeing the positive effect visual reminders can have on those with memory conditions seems to show that reminders would be useful on both the average person and those suffering from these conditions in order to be able to recall dates, events and daily jobs.

## Memory Research:

The research by (Chen and Wang, 2010) looks at how the effects memory aids can have in both young and older adults. As the artefact is to create a memory aid application this research is very relevant. The article found that memory recollection ability decreases with age, however the use of memory aids and memory cues were found to increase this ability with participants. Due to the relevance of this research to the artefact it demonstrates how an application focused on providing memory aids/cues would be useful in helping both younger and older adults in recollecting daily tasks, events and people. While this research didn’t analyse specifically the effect a mobile application could have in this topic, the research it did find could definitely be applied in the creation of a ‘Augmented Memory Mobile App’.

## Voice Technology:

In (Berger and Ludwig, 2007) research was conducted to find out whether or not voice assisted technology could reduce user error in employees. This research looked at a variety of companies and previous research conducted to decide whether or not this could improve employee performance. It also looked at the use of voice in feedback and computer instruction. The outcome of this was that employees performed on average less errors when completing their job compared to their baseline without feedback. This research didn’t link as closely to the artefact as it initially seemed however following the positive results of the research could suggest that if the artefact relayed the reminder by audio rather than text it could be more beneficial however this depends on what route the eventual artefact takes.

## Usability/UI:

The journal article written by (Shneiderman, 2000) looks into both the legal and ethical obligations of a company to provide a service to as many users as possible regardless of age, learning or ability. His research found that websites created should be kept as simple and standardised as possible so that once a user learns how to follow one website, they can use nearly any kind, this can be applied to app design from this. While typically research from this long ago is typically discredited Shneiderman has created various publication on usability and UI design and is credited as one of the most influential people into research in this area. This article also looks into the fact that those suffering from visual disabilities need to be accommodated for when designing an application, this is especially important considering 2 million people in the UK suffer from vision loss (NHS, 2017) and the Royal National Institute of Blind People (RNIB, 2017) found that one in five people will suffer some type of sight loss in their lifetime. While creating the artefact it will be important to keep usability issues in consideration so that it will be accessible to a large range of users regardless of their background.

One conference paper (Ohkawa, Kodama, Konno, Zhao and Mitsuishi, 2018)

# References:

Berger, S.M. and Ludwig, T.D. (2007). Reducing Warehouse Employee Errors Using Voice-Assisted Technology That Provided Immediate Feedback. *Journal of Organizational Behavior Management*, 27(1), pp.1–31.

Elfaki, A. and Alotaibi, M. (2018). The role of M-health applications in the fight against Alzheimer’s: current and future directions. *mHealth*, 4, pp.32-32.

NHS.uk. (2017). *Blindness and vision loss*. [online] Available at: <https://www.nhs.uk/conditions/vision-loss/#:~:text=In%20the%20UK%2C%20there%20are>. [Accessed 12th November 2020]

M. S. Chen and C. N. Wang (2010). “The effects of memory cue and Memory Aid on prospective memory in older and younger adults”. *2010 IEEE International Conference on Industrial Engineering and Engineering Management*. Macao, 2010. New York, USA: IEEE. pp. 832-836

RNIB. (2017). *The State of the Nation Eye Health 2017: A Year in Review*. [online] Available at: <https://www.rnib.org.uk/state-nation-2017> [Accessed 26 Nov. 2020].

Shneiderman, B. (2000). Universal usability. *Communications of the ACM*, 43(5), pp.84–91.

Y. Ohkawa, M. Kodama, Y. Konno, X. Zhao and T. Mitsuishi (2018). "A study on UI design of smartphone app for continuous blended language learning," *2018 5th International Conference on Business and Industrial Research (ICBIR)*. Bangkok, 2018. New York, USA: IEEE. pp. 584-589