

Introduction

The aim of this project is to design and develop a mobile companion i.e. (Fish, Dog, Cat, etc.) that promotes engagement, emotional wellbeing, and **social connection for older adults**. Watson Pet introduces an accessible, lightweight digital companion in the form of a virtual pet which interacts naturally using speech-driven and text output.

- **Social isolation** among older adults is increasing (World Health Organisation, 2021)
- Many applications are not designed for meaningful **emotional engagement**.
- **Conversational AI** presents an opportunity to create reachable, vocal digital companionship.

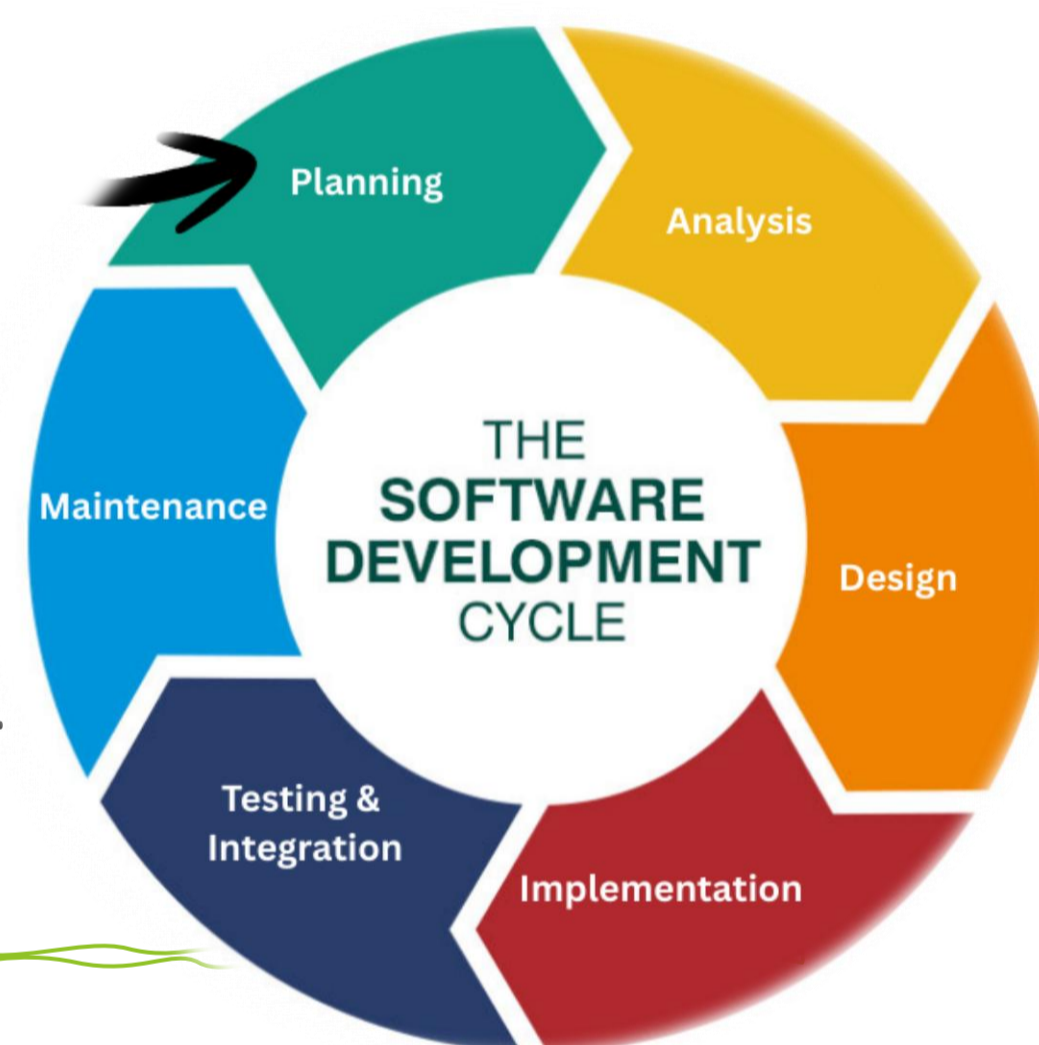
Methodology

This project adopts an iterative Agile-inspired **Software Development Life Cycle (SDLC)** to support progression refining of accessibility features, AI integration, and user integration.

Given WatsonPet focuses on user engagement and emotional interaction, rather than algorithm development, an iterative lifecycle was selected to:

- Continuously evaluate usability.
- Adjust AI prompting.
- Adopt user testing feedback.
- Improve accessibility implementation.

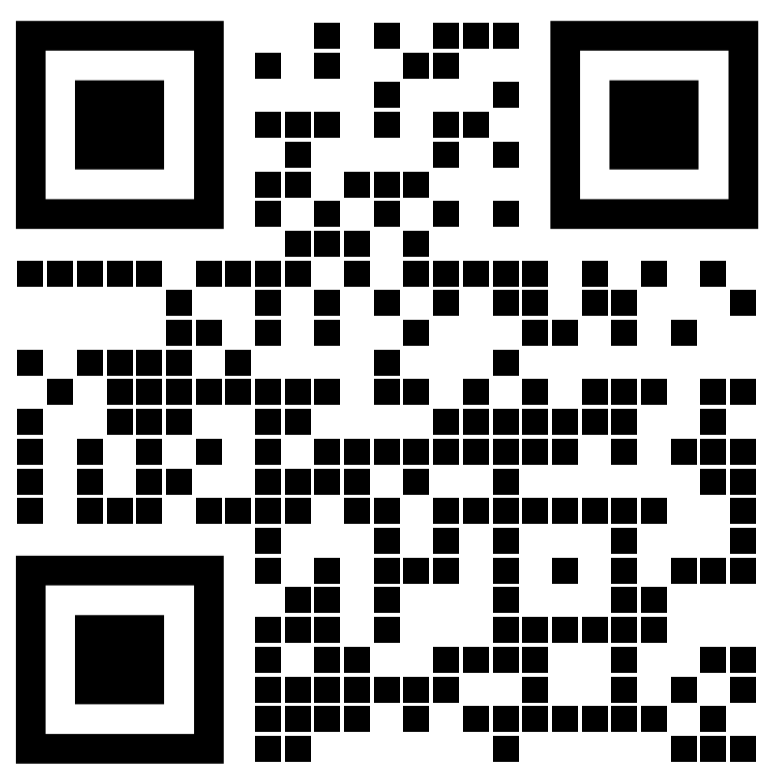
We use incremental prototype to ensure the focus on elderly users.



Risk Assessment

Potential risks include AI hallucination or emotionally inappropriate responses, ethical considerations in testing with older adults (*A younger audience will be tested*), data privacy and security vulnerabilities, and reliance on external Watson AI.

However, these risks will be mitigated using a secure backend, controlled evaluation protocols, and ethical approval, lastly a clear separation between user data and the AI processing system.



Scan me

Prototype

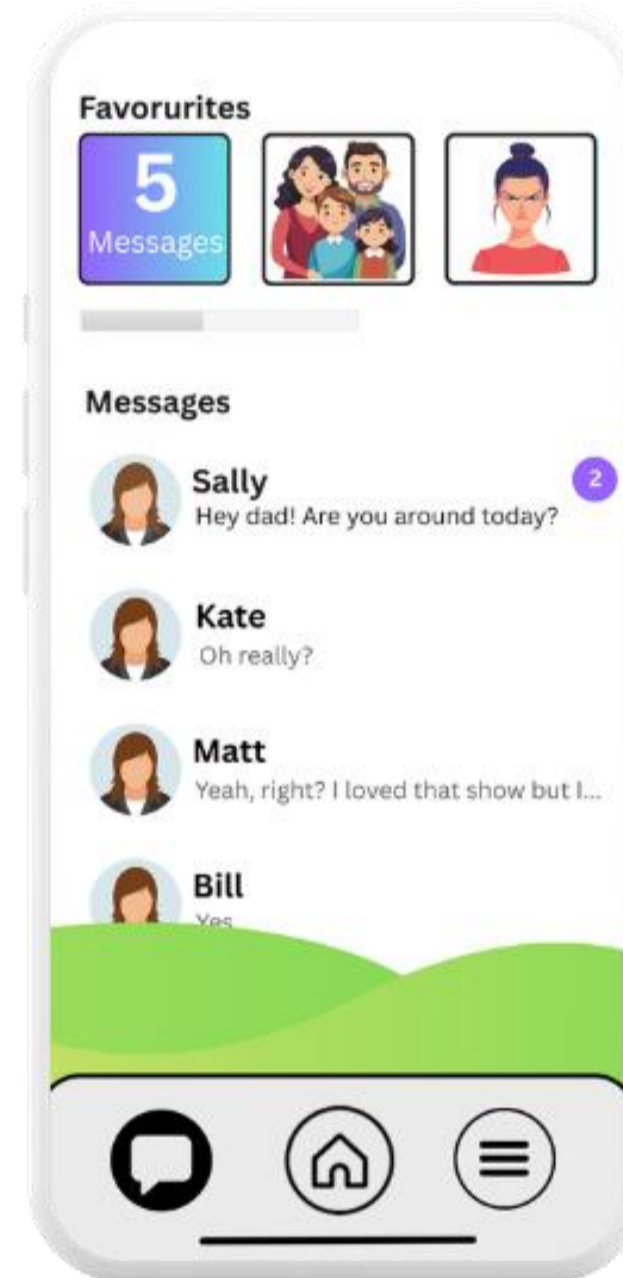


Figure 1: Messages screen. Collection of SMSs that are relayed through the App, also can be paired with the same App messages for group chats. Both will be structured via Unix timestamps for order.



Figure 2: Main screen. Landing page for the user, they can talk to the pet via both text and vocal usage. Buttons on the screen are for user interaction. Feeding the pet, petting the pet, and using AR to see view the pet.

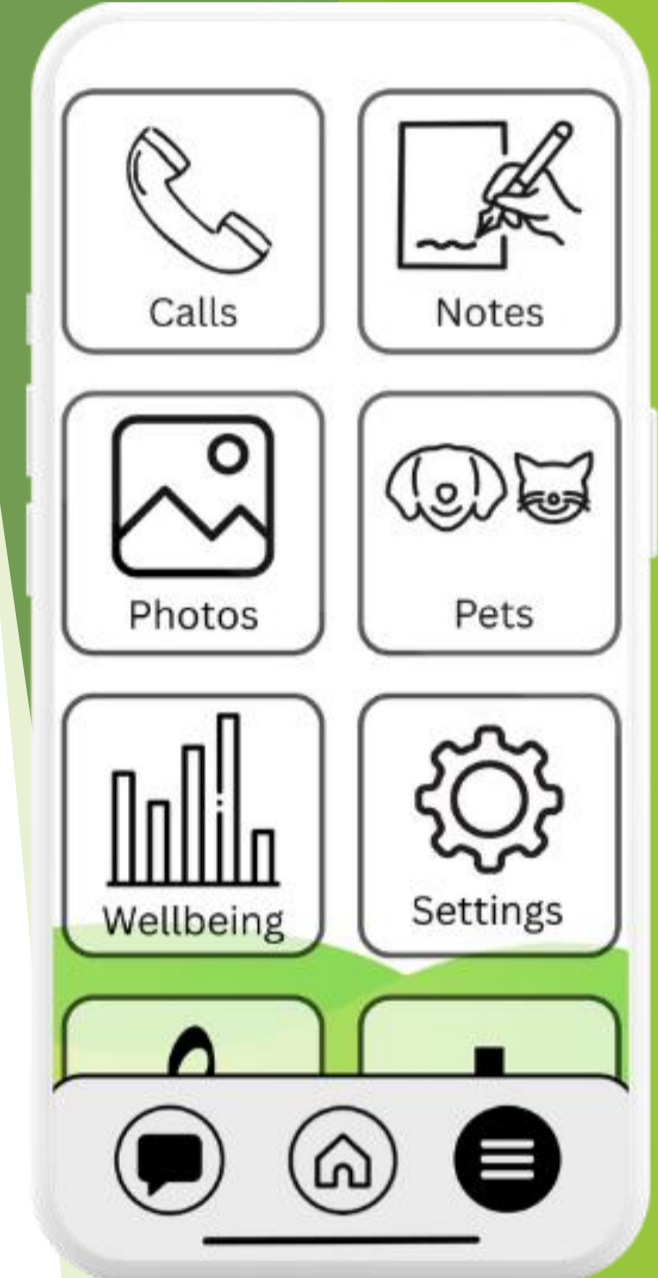


Figure 3: User Control screen. Notes made via the companion will add directly, calls made whilst the app is open will redirect. Pet customisation. Wellbeing stats (Evaluates user interaction, mood, etc.).

Objectives

- Plan and research problem and define requirements.
- Analyse and Identify system components, accessibility needs, and risk.
- Design and create accessible **user interaction** and **interaction flow**.
- Implement and develop a React **Native** and **WatsonX** integration.
- Test and evaluate usability, AI responses, and **accessibility**.
- Refine and improve system components through iterations.

