

Introduction

- Social robots are a new kind of robot that is specifically designed to interact and form emotional bonds with humans.
- This project proposes a new process and framework to design a social bot, namely UNiverse, to support the MZ Gen's emotional well-being.
- We will develop a process and framework to build a social robot and blueprint its user experience. Then, we will prototype one or two most significant features/interactions using the TinyML approach to demonstrate our potential.

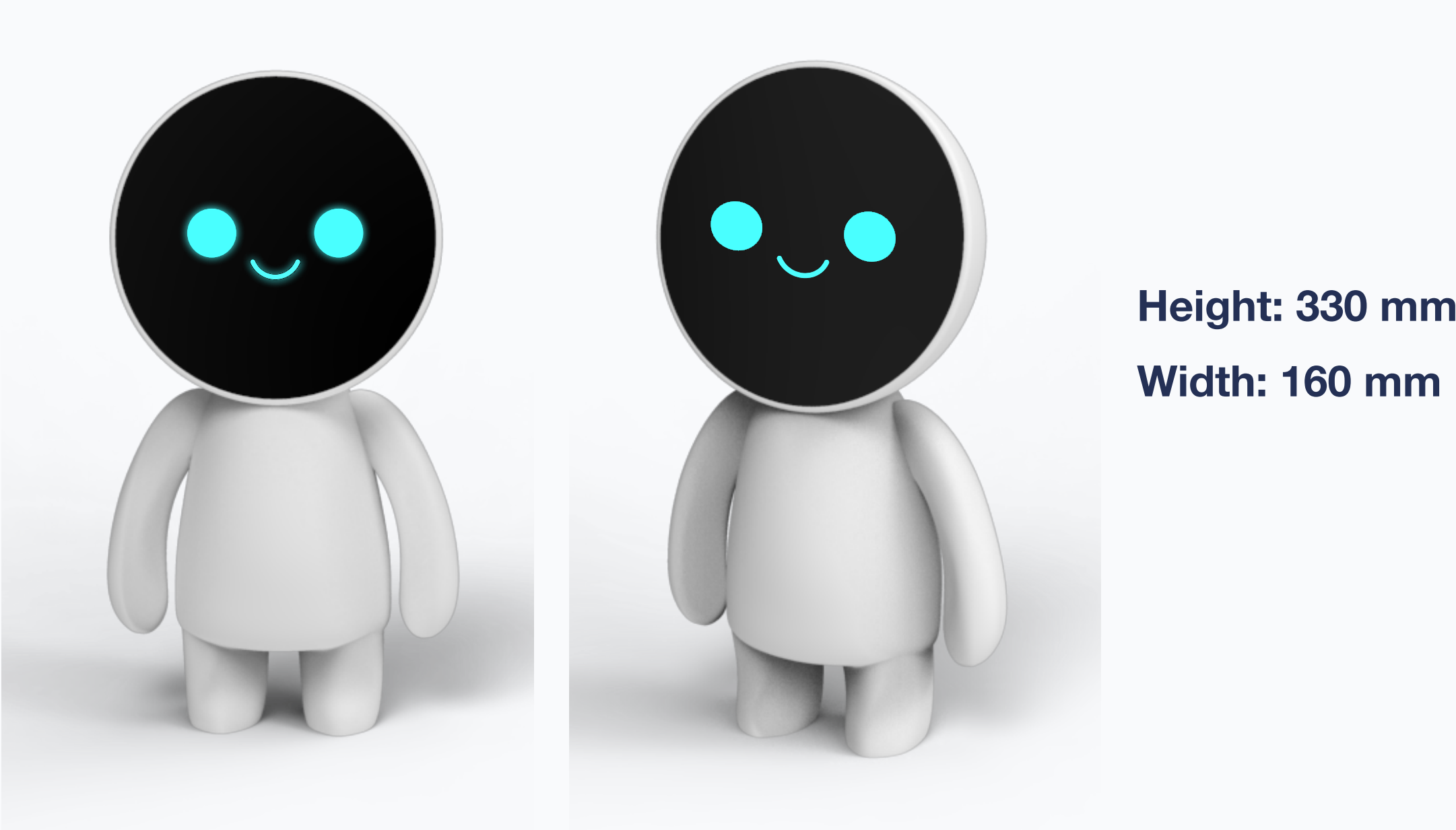
Research Method

- Literature research method for social robot design from the perspective of HRI and VUI.
- User Scenario method to describe user experience based on user needs and Wants
- Use Case/Task Flow Method, which designs the main requirements required for development in User Scenario.
- Rapid Prototyping method to make and test key functions as fast as possible.

Research Outcomes

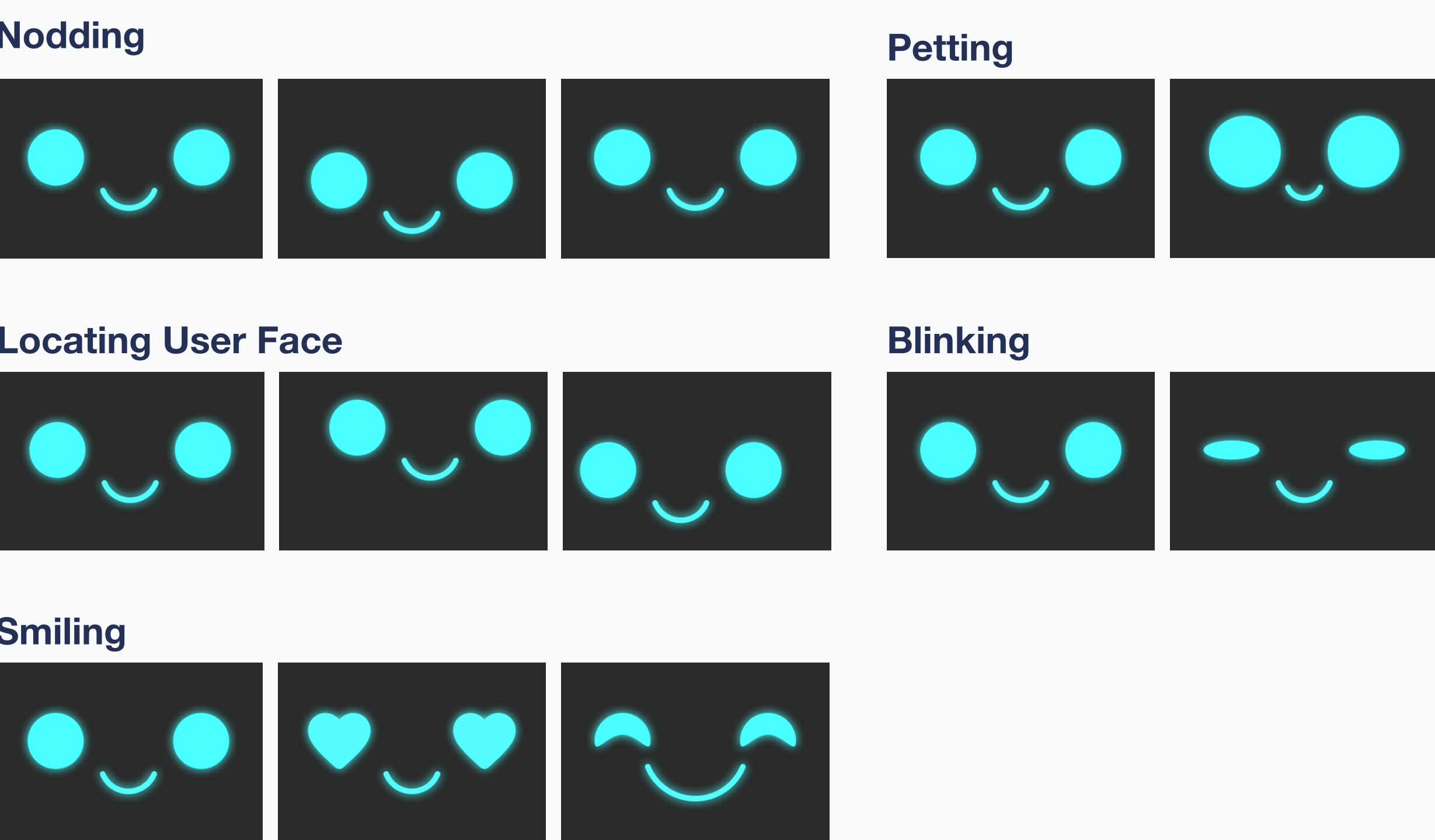
Product

Unlike the existing social robot, the character shape is designed with a friend feeling that can give a companion feeling. Organic and rounded shapes invite the user to interact with the robot.



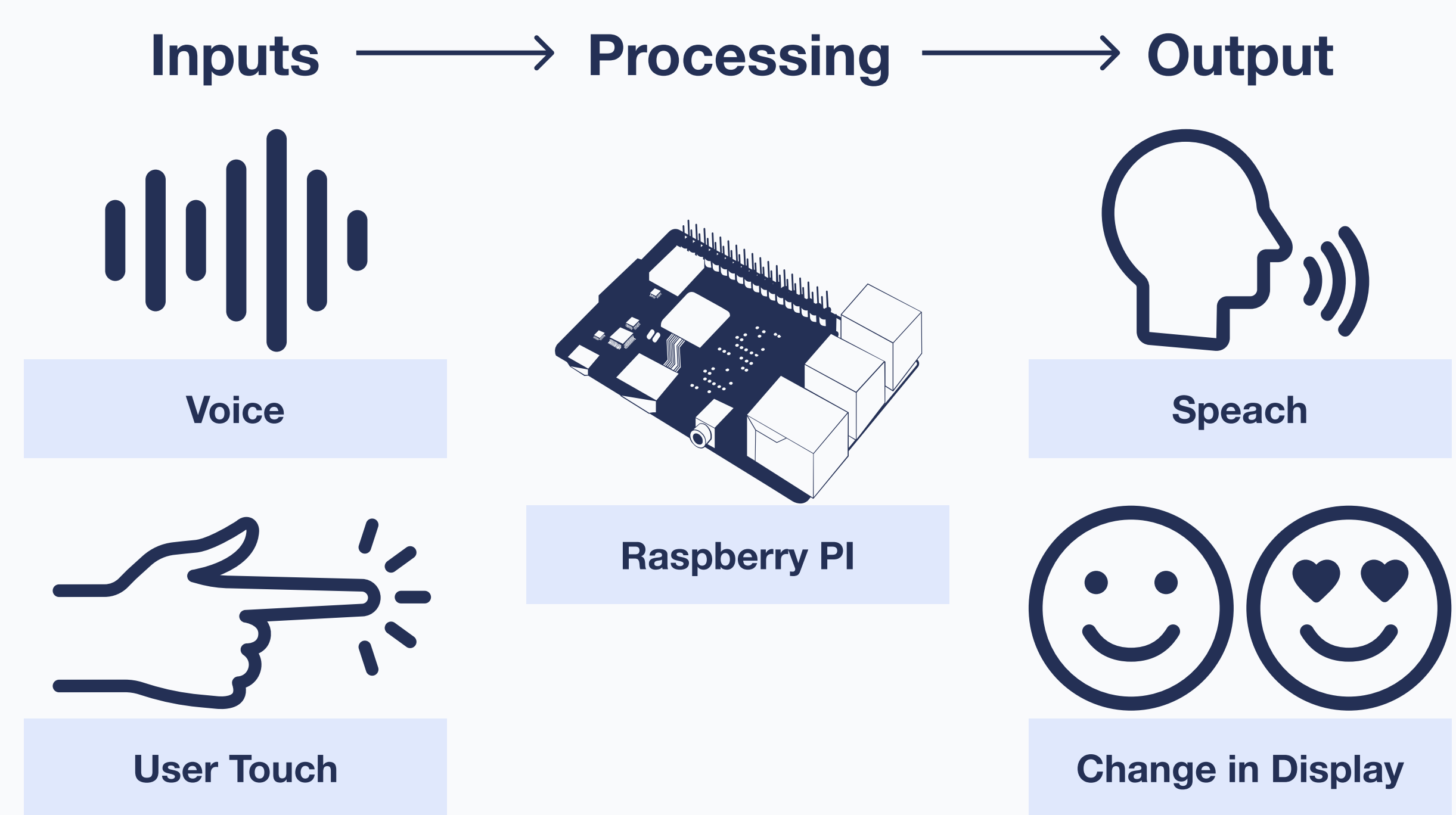
User Interface

Through the Figma prototyping tool we have designed and animated 5 types of the robot face expressions. Round shapes were used for the robot face to give it friendly appearance.



Software

Kakao Voice API was used to build a simple Voice User Interface(VUI) through Speech-to-Text (STT) and Text-to-Speech (TTS). Touch mechanism is working on Python and Raspberry Pi environment



User Scenario

1. The user can talk with robot and ask questions. The robot can tell its name, whe it was born as well as change its face expressions.
2. User can ask the robot to play a song/stop a song.The robot will play UNIVERSE by Coldplay and BTS and nod when it understands the user command.
3. User can pet the robot. As a response, robot will change display to excited expression.

