Persona 1 – Ellie (a busy parent with limited free time and wants to create a routine for her children)

Profile: 34, has a job, a parent of two (ages 6 and 9).

Considerations: autistic children experience stress when visiting dentists (e.g., sounds, taste, bright light); they benefit from **visual support**, **predictable** steps and preparation; friendly scheduling tools can help them follow the steps and reduce anxiety.

Goals: creating consistent brushing or flossing routine for children; reducing stress before and during appointments; needs reminders and simple tracking of brushing routines (+ sharing with dental practitioner)

Main challenges: children resist brushing/flossing; limited time to supervise; needs fun, playful but structured prompts.

Technology use: comfortable with mobile phones and apps

Design implications:

- Cute, gamified UI for children with animations and rewards (e.g., badges, streaks, gentle animations)
- Dashboard to track children's teeth brushing consistency and improvement.
- Get notified when missed brushing
- Each child's data is tracked individually and controlled by face recognition.
- Virtual robot should be friendly and encouraging, making predictable prompts.
- May consider parent dashboard to monitor both children

Features: parental dashboard, per-child face recognition, visual schedules, gamified brushing and rewards, appointment pre-visit prep kit.

Persona 2 – Alex (autistic teenager, wants to improve his teeth health)

Profile: 15 yo, attends school; highly sensitive to sound and taste; prefers **consistent** and **non-judgmental** technology.

Considerations: benefits from structured, predictable interactions and visual support; QT Robot should engage with Alex In consistent and non-judgemental way.

Goals: setting up own brushing routine; clear step-by-step guidance; minimal verbal overload; pre-visit preparation for dental office.

Challenges: sensory triggers (drill sounds, tastes, sudden sounds), literal interpretation, processing time, worries when visiting dentist appointments, complex instructions are too overwhelming.

Design implications:

- Visual trackers: icon-based progress, color-coded steps, low-stimulation palette, UI aligns with visual supports and reduced cognitive load approach.
- Gradual exposure: when entering the app, place pre-visit walk-throughs, sensory choices (e.g., mute, alternative options) to reduce stress.
- QT Robot: soft, non-judgemental voice, fixed cadence, repeatable scripts, option for text-only, coaching support and engagement without overstimulation.

Features: predictable scripts and clear steps from virtual and physical robot , sensory controls (sounds, animations, disabling button, dark theme), icon-based progress (+color-coded routines), clinician review via cloud sync, face recognition, reduced cognitive load, simple navigation, optional text-to-speech, visual cues and gentle prompts over verbal instructions.

Persona 3: David (older adult with mild memory challenges)

Profile: 67, retired; uses smartphone or tablet; prefers large text and simple navigation flow.

Considerations: regular reminders for routine adherence are important; may need an extra time and clear literal instructions, simple UI and predictable timing to reduce stress.

Goals: follow hygiene and avoid complications; reliable reminders; friendly and supportive coaching

Challenges: forgets to follow routines easily; overwhelmed by complex UIs and new technology; does not like remembering passwords.

Design implications: large buttons, fonts, plain language, literal instructions, text-to-speech, consistent reminders, password-less recognition.

Features: large UI size or ability to zoom-in, literal detailed instructions, gentle robot reminders, secure sign-in with face and no password, cloud sync for dentist to monitor hygiene remotely, positive reinforcement (smiles, encouraging phrases) to keep David motivated.