



Engage **SLT**

From Challenge to Solution

Science Foundation Ireland Challenge Fund

- Address important societal challenges
- Concept phase – identify what the challenges are in a particular field
- Seed phase – develop a prototype piece of technology to address some of the needs identified in the concept phase.
- Competing for a further €1.5 million worth of funding



Fondúireacht Eolaíochta Éireann
Dá bhfuil romhainn

Science Foundation Ireland
For what's next



National
College *of*
Ireland



Trinity
College
Dublin

The University of Dublin



How can we use technology/AI to enhance service delivery in speech and language therapy?

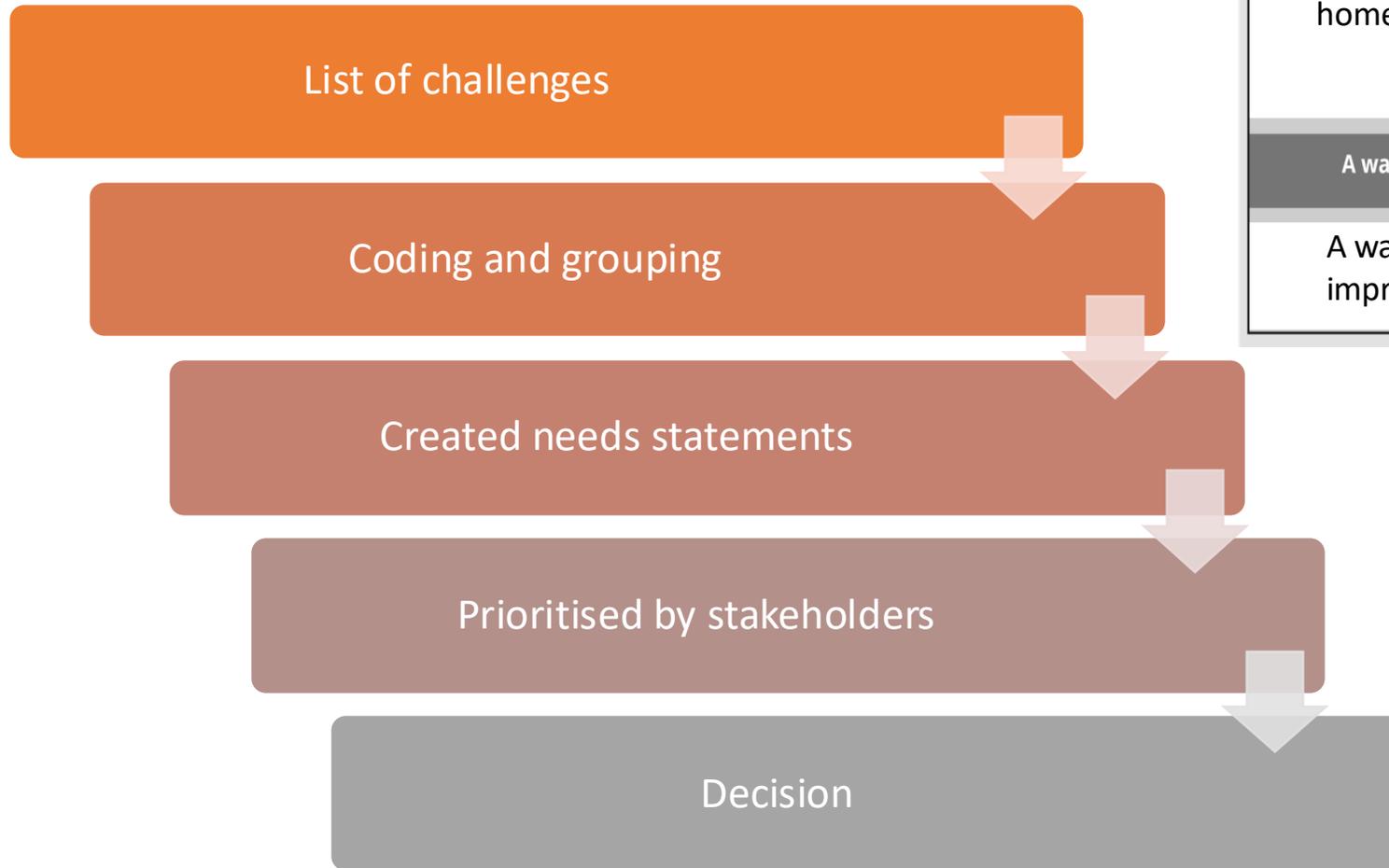


Concept Phase: Stakeholder Engagement

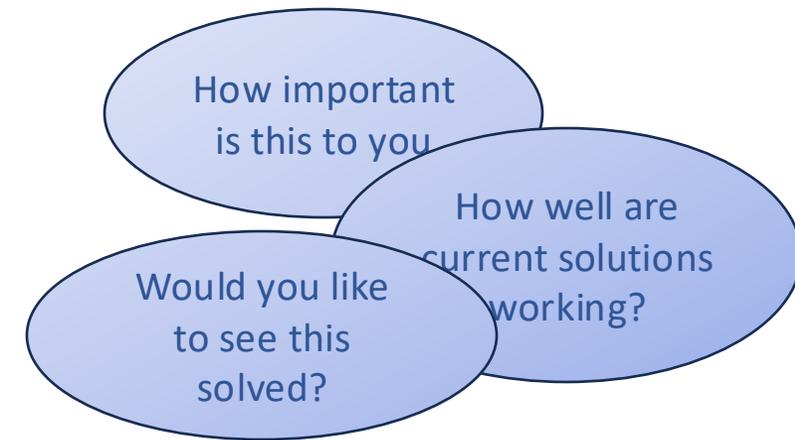
Important to understand perspectives of those involved in the service to know the challenges, desired improvements, and feasibility of a technology solution



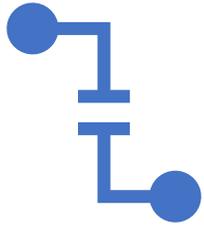
Data Analysis



PROBLEM - X	POPULATION - Y	OUTCOME - Z
Difficulty carrying out home practice	Families	Improve effectiveness of therapy
A way to address (PROBLEM - X) for (POPULATION - Y) to achieve (OUTCOME).		
A way to help families carry out SLT home practice to improve the effectiveness of therapy.		



Identified Need for Technology



Disconnect between SLTs and parents outside the clinic.

“You get the support but then are expected to follow up for months after with no support. Ideas slip out of your head and you forget the correct way to carry out homework.”



Technology can address the following needs identified:

- Meaningful communication between parent and SLT
- Support families to carry out home practice
- Monitor the child’s progress

Seed Phase: Prototype Development

- Prototype mobile and web app
- Co-design and refinement study in primary school in Dublin.
- 8 children receiving short intervention block
- Parents using the app and will provide feedback



The Challenge

- **High Workload for SLTs**
 - Labor-intensive material creation
 - Duplication across
- **Limited Monitoring and Adaptation**
 - Long intervals between sessions
 - Difficulty tracking progress



The Solution

- **Child Profile Management**
 - All information such as assigned homework, progress, and therapy goals are gathered in one place.

The screenshot displays the Engoge SLT web application interface. On the left is a dark blue sidebar with the Engoge SLT logo and navigation options: Children, Activities, Chat, and Ecosystem. The main content area is light gray and features a 'Profile' section for a child named Nova Bennett, with fields for Name, Sex (FEMALE), Birthdate (2015-07-15), Primary Language (English), and Diagnoses (phonological delay). To the right is a 'Weekly Report' section for the current week, showing progress for 'Assignments' (0/4, 0%) and 'Review' (0/4, 0%), accompanied by a circular progress indicator.

Engoge SLT

PAGES

- Children
- Activities
- Chat
- Ecosystem

Log Out

Profile Edit

Name: Nova Bennett

Sex: FEMALE

Birthdate: 2015-07-15

Primary Language: English

Diagnoses: phonological delay

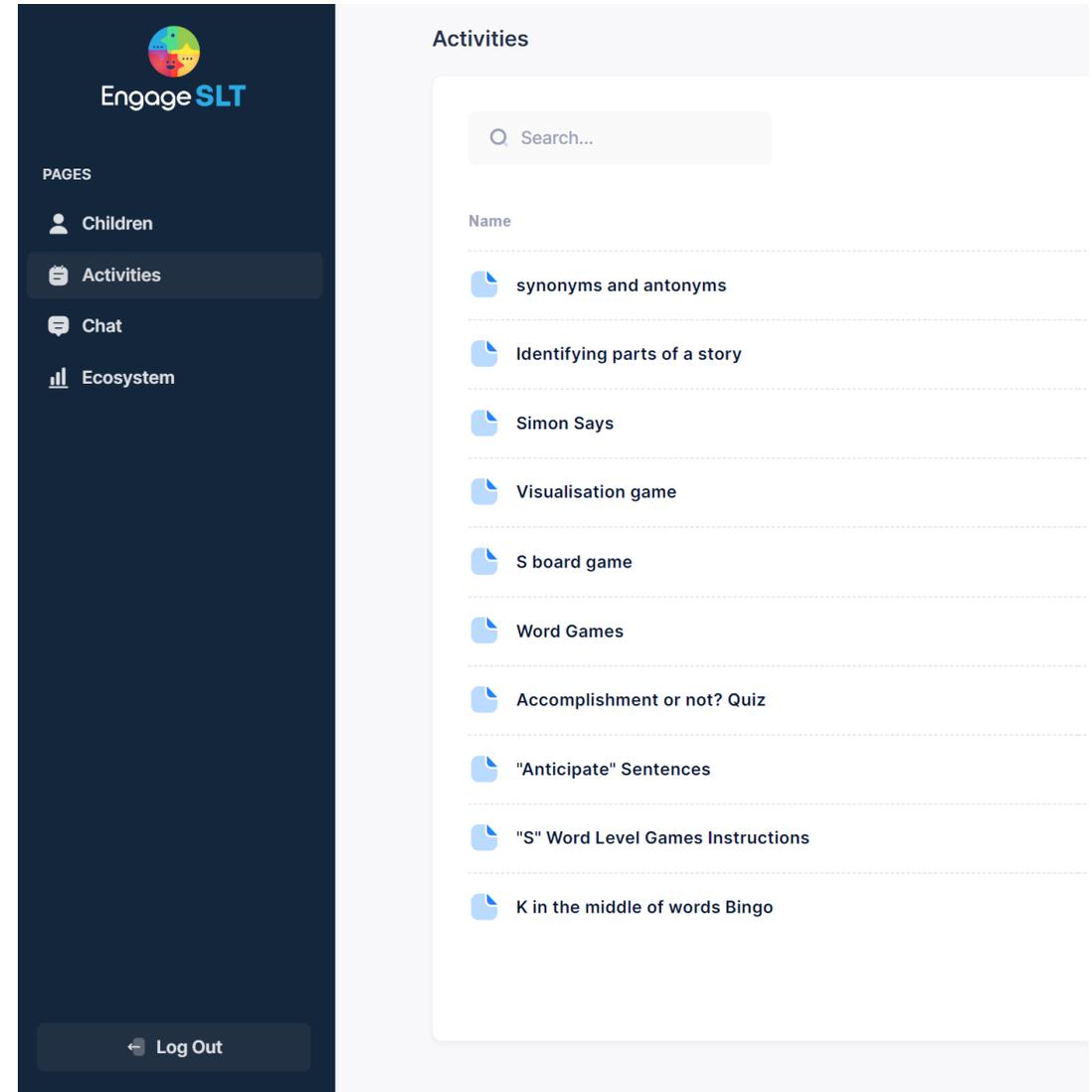
Weekly Report Current week

Assignments Total homework assignments submitted 0 / 4 0%

Review Total reviews submitted 0 / 4 0%

The Solution

- **Personal Homework Library**
 - Makes the homework management process more structured and easier for therapists



The screenshot displays the EngageSLT interface. On the left is a dark blue sidebar with the EngageSLT logo at the top. Below the logo, the word "PAGES" is followed by a list of menu items: "Children", "Activities" (which is highlighted), "Chat", and "Ecosystem". At the bottom of the sidebar is a "Log Out" button with a left-pointing arrow. The main content area on the right is titled "Activities" and features a search bar at the top with the placeholder text "Search...". Below the search bar is a list of activity items, each preceded by a blue document icon. The items are: "synonyms and antonyms", "Identifying parts of a story", "Simon Says", "Visualisation game", "S board game", "Word Games", "Accomplishment or not? Quiz", "Anticipate" Sentences, "S" Word Level Games Instructions, and "K in the middle of words Bingo".

The Solution

- **Feedback System**
 - Allows therapists to adapt therapy in real time based on the feedback received

The screenshot shows a 'New Homework' modal window with two tabs: 'Details' and 'Evaluation'. The 'Evaluation' tab is active. It contains two question blocks. The first is a 'Single-Choice' question: 'Were you able to complete the activity?' with radio button options for 'Yes' and 'No'. The second is a 'Likert Scale' question: 'Did you feel confident in supporting your child?'. At the bottom of the modal are 'Discard' and 'Submit' buttons.

Profile

Overview Homework Therapy Goals Carers

Profile

Language:

Status

Active

Active

New Homework

Details Evaluation

Single-Choice

Were you able to complete the activity?

Yes

No

Likert Scale

Did you feel confident in supporting your child?

Discard Submit

The Solution

- **Ecosystem Report**
 - Allows therapists to identify effective homework based on feedback



Future Plans

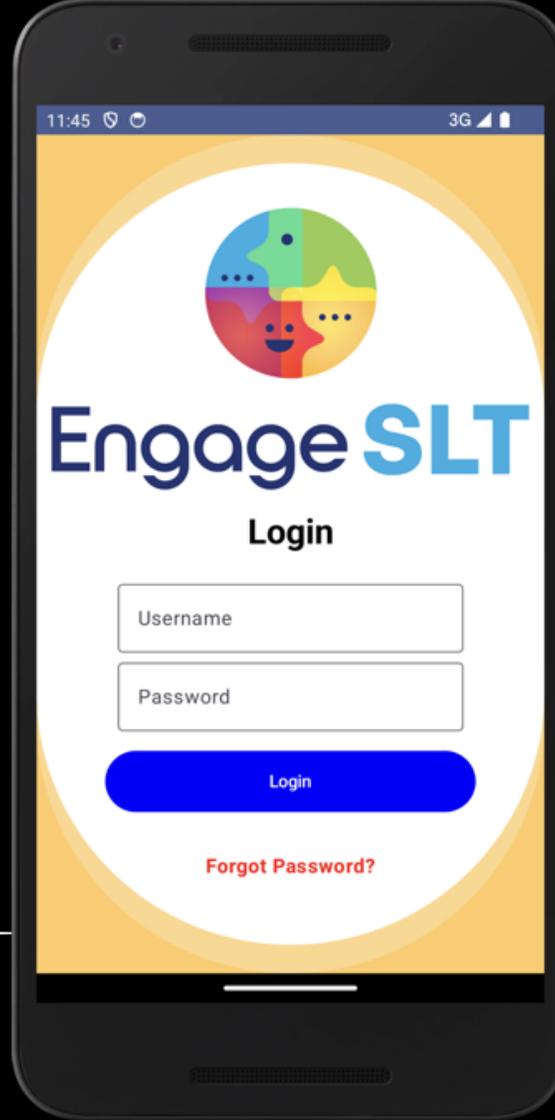
- **Build National Repository**
 - Share and use ready-made material
- **Incorporate generative AI**
 - Delegate routine tasks to artificial intelligence



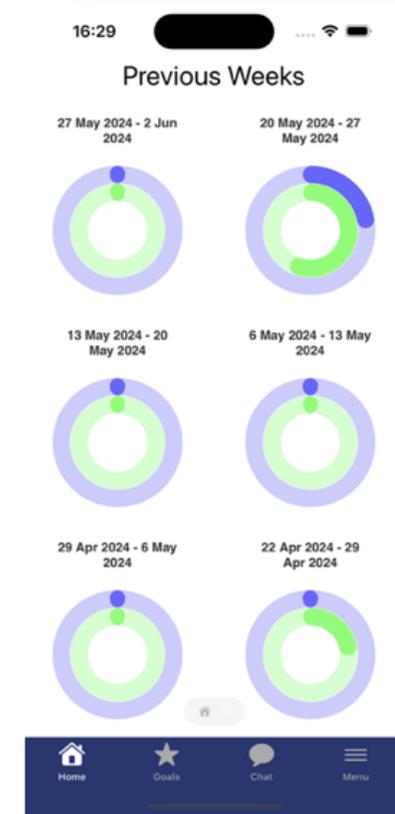
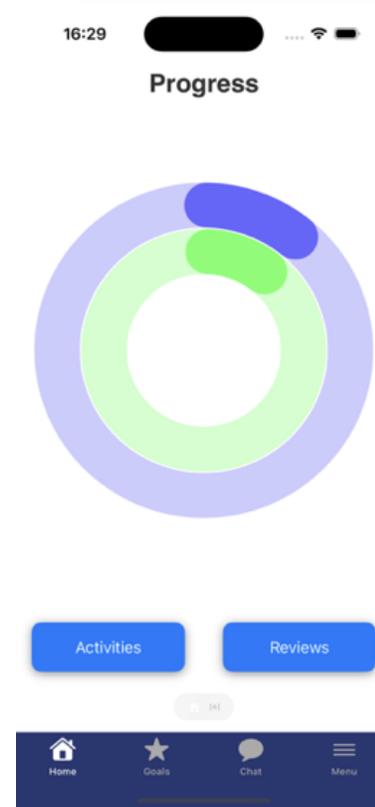
Mobile Development

EMRE KAVAK

FULL STACK DEVELOPER

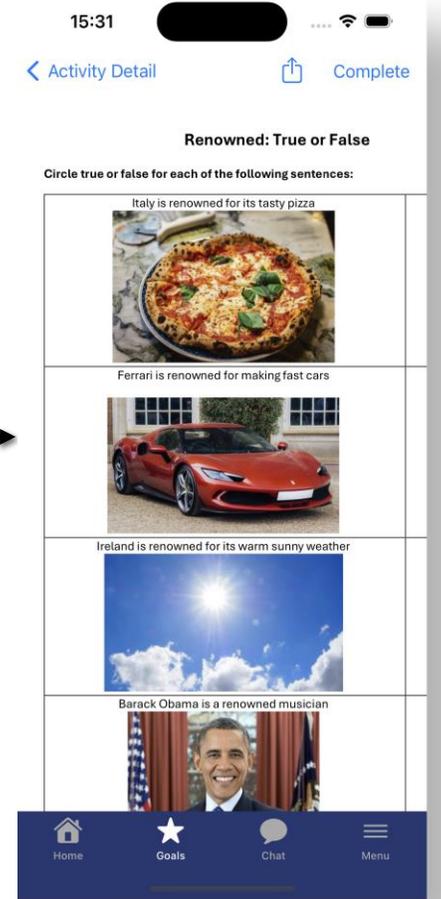
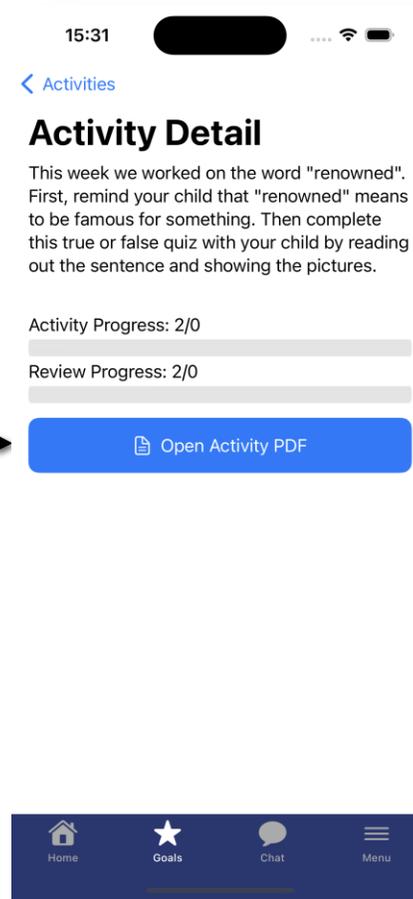
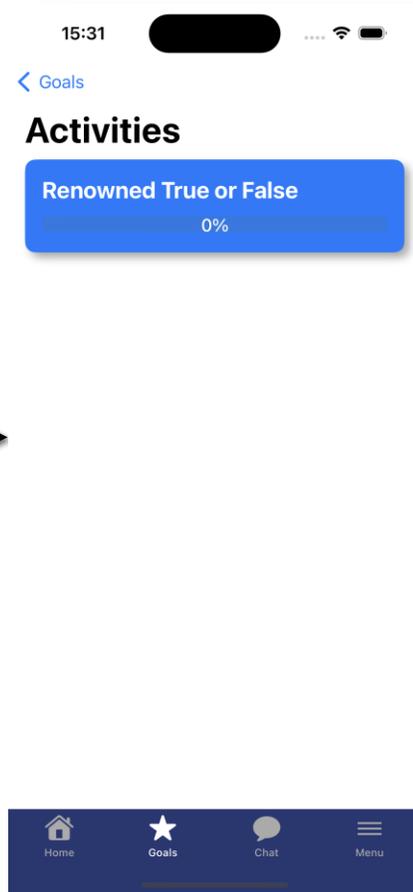
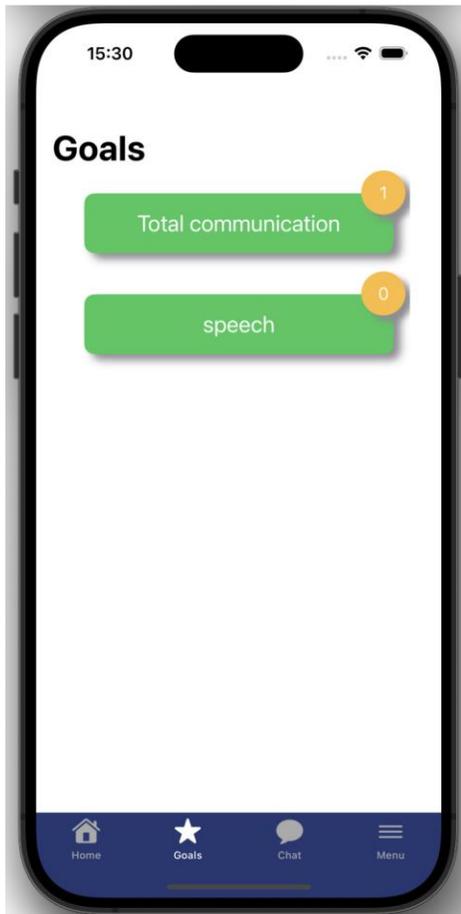


- Shows assignments and reviews for the current week
- Helps users stay on track with therapeutic goals



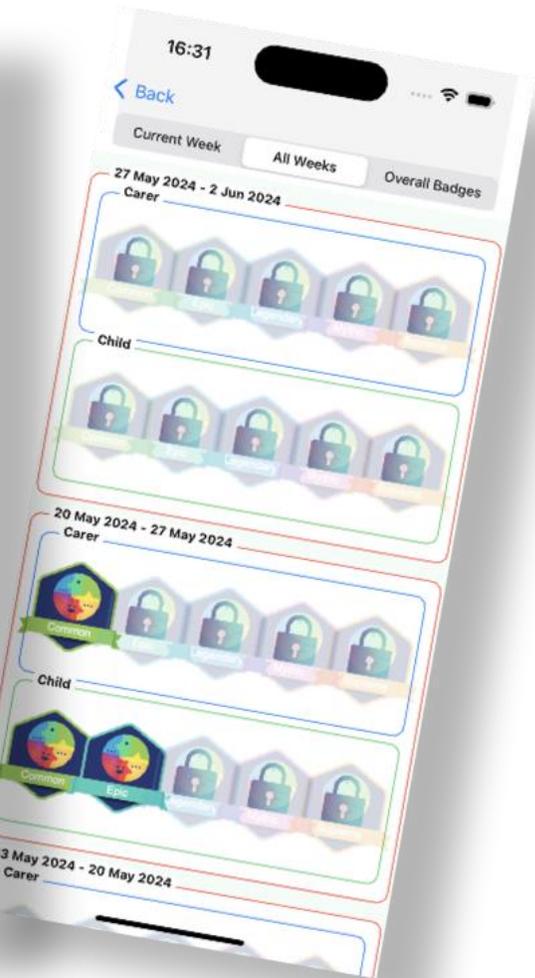
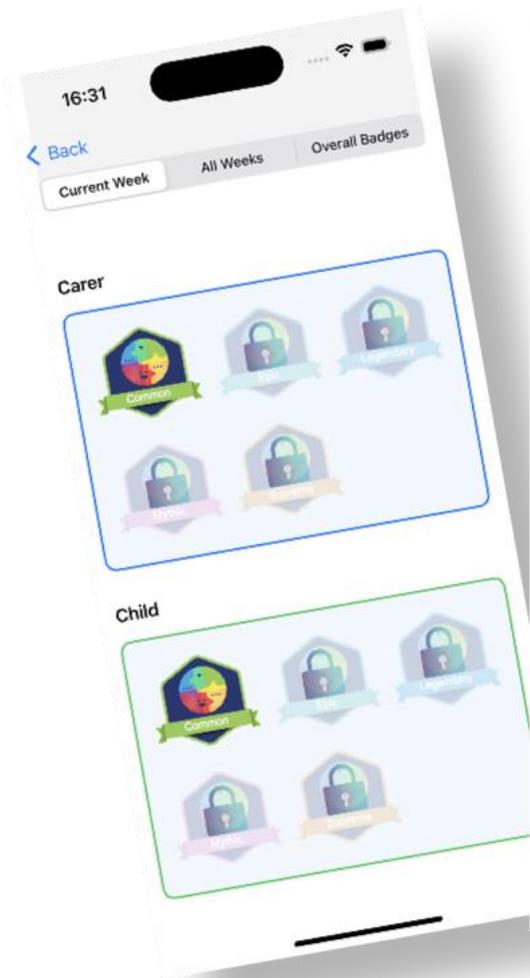
Landing and Home View

Activities View





Reviews View

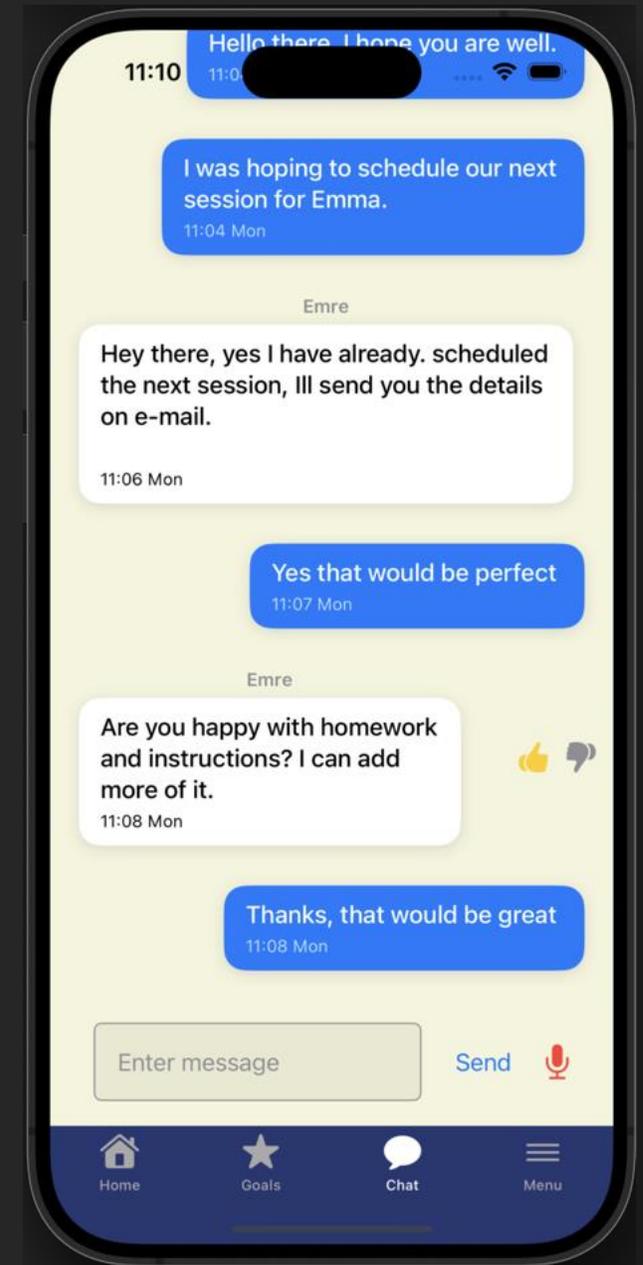
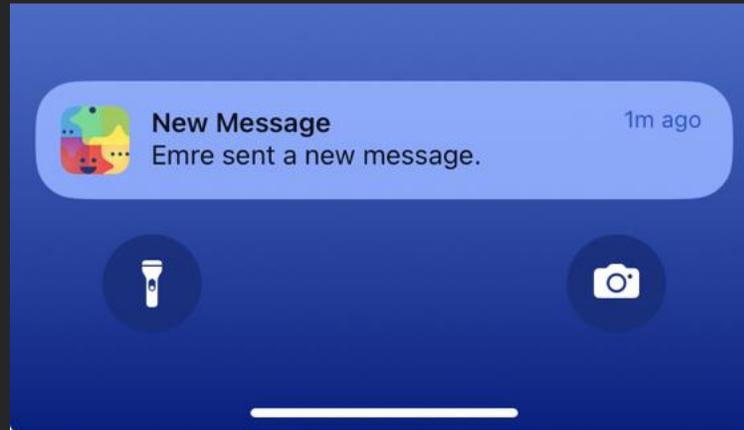


Badges View / Gamification



Chat

- Text and Voice messages
- Real time chat with web socket
- Notification on new message





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What is left?

- **Multi-language Support:** Expanding the app and chat to support multiple languages.
- **LLM Integration in Platform:** Utilizing large language models to assist therapists in creating activities.

Research Outputs



Papers in progress:

AI in speech and language therapy

Parent and SLT perspectives of home practice

Using Design Thinking to Develop an SLT platform



Conference Posters:

SFI Summit

IASLT Biennial Conference

HSE Better Together for Digital Healthcare



Website and newsletter to keep up to date

<https://www.ncirl.ie/EngageSLT>