

## Abstract

Alzheimer's is a progressive neurogenic disease that is more prevalent among old people. The main symptoms of Alzheimer's are amnesia, repetitiveness and the lack of ability to perform complex tasks. Diagnostic confirmation of Alzheimer's disease is determined by examination. There is a lack of application for Alzheimer's Arab patients. This project aims to design a multimodal language and communication intervention application for Alzheimer's Arabic speaking patients in Saudi Arabia. The application is designed to be culturally and linguistically appropriate for people who need assistance to communicate.

## Introduction

Many Saudi old people suffer from Alzheimer's disease. In 2020, the Ministry of Health reports that there were 130k Alzheimer patients in Saudi Arabia and the number is increasing every 5 years. The aim of this research is to help Alzheimer's patients to enhance their quality of life and improve access to care by designing an assistive Arabic application.

## Methodology

### 1. Surveying the existing literature about Alzheimer disease and its assistive applications

This stage includes gathering data about the disease itself and getting a clear background about how it can be diagnosed, and discovering patients' needs from multiple resources. To the best of our knowledge, there is no freely available assistive application despite the existence of a large group of Alzheimer's patients across the Arab world.

### 2. Planning for developing mobile application

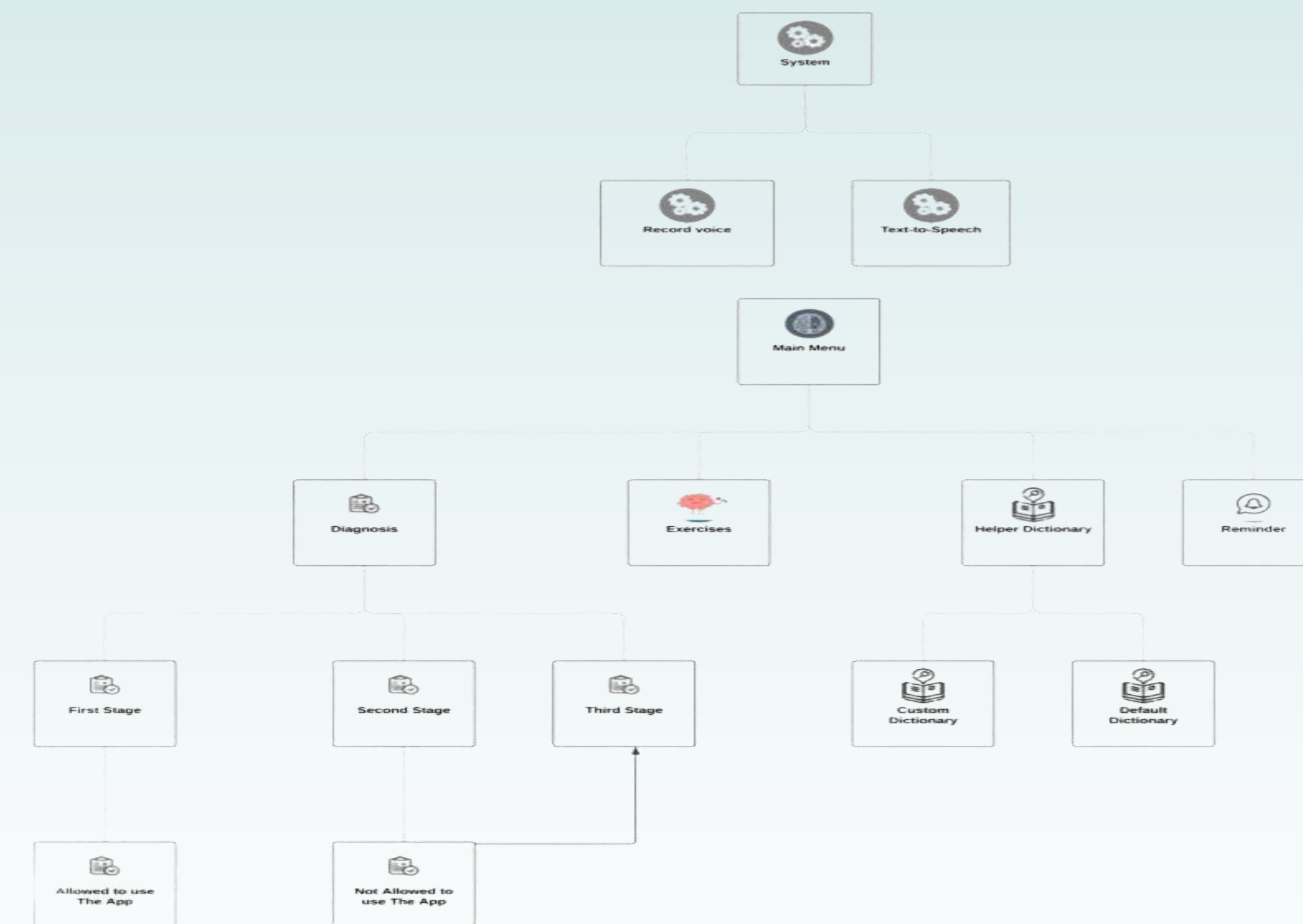


#### (System Architecture)

#### Three users envisaged:

- Early-stage patients
- Health care practitioners
- A family member

The Design of a language and communication intervention application for Alzheimer's Arabic speaking patients



### 3. Testing and evaluating the usefulness of the application

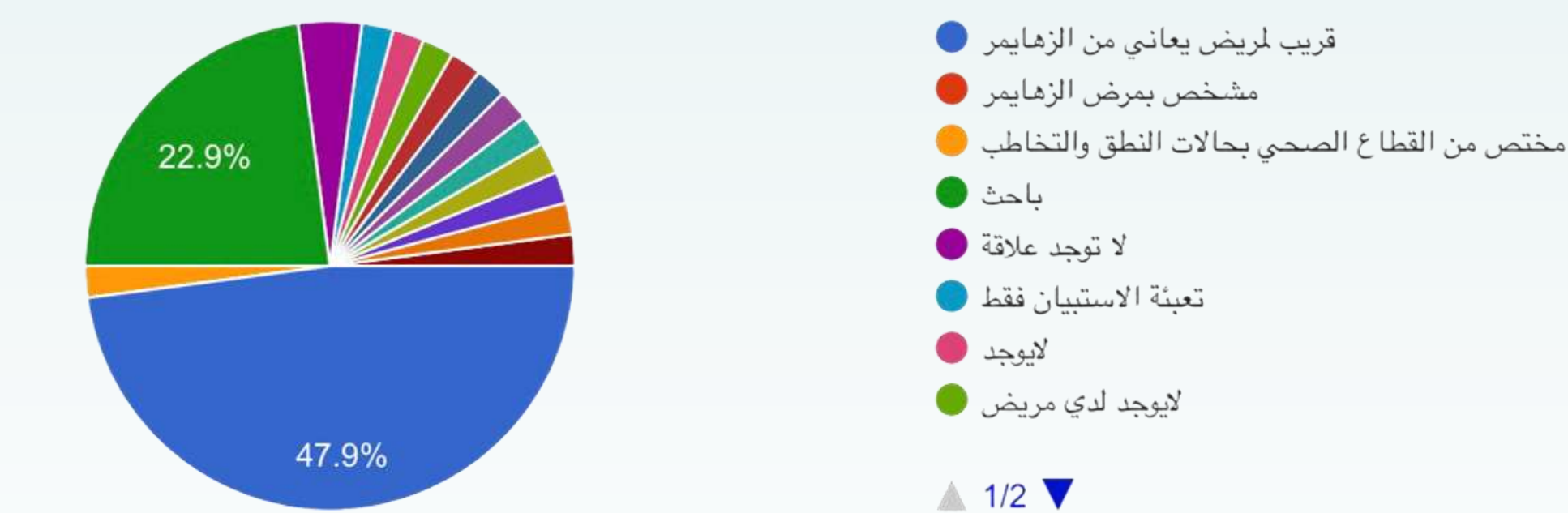
This is the final stage, it is meant to evaluate the quality of the application; To achieve that, we have provided some users with our pilot application and they have been asked for their feedback to help us improve our application.

## Results

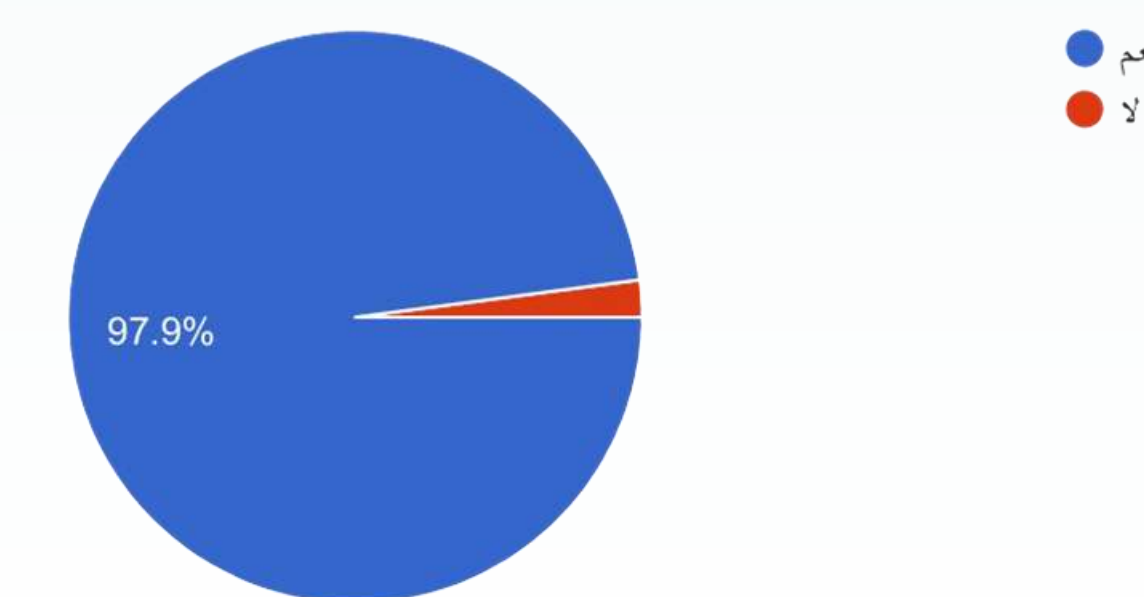
### • Prototype of the suggested application



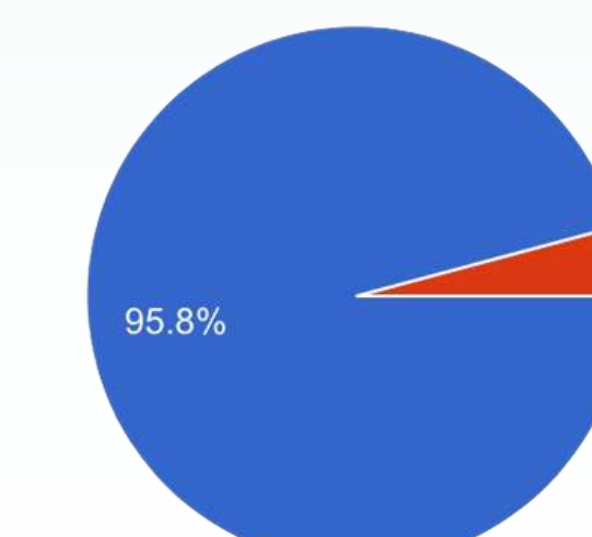
### • Questionnaire answers



Application Users



Application Linguistic Content



Application Design

## Discussion

Users reported the usefulness of the application and the potential possible expansion taking into consideration a user-friendly interface that set realistic goals at the outset of the rehabilitation program.

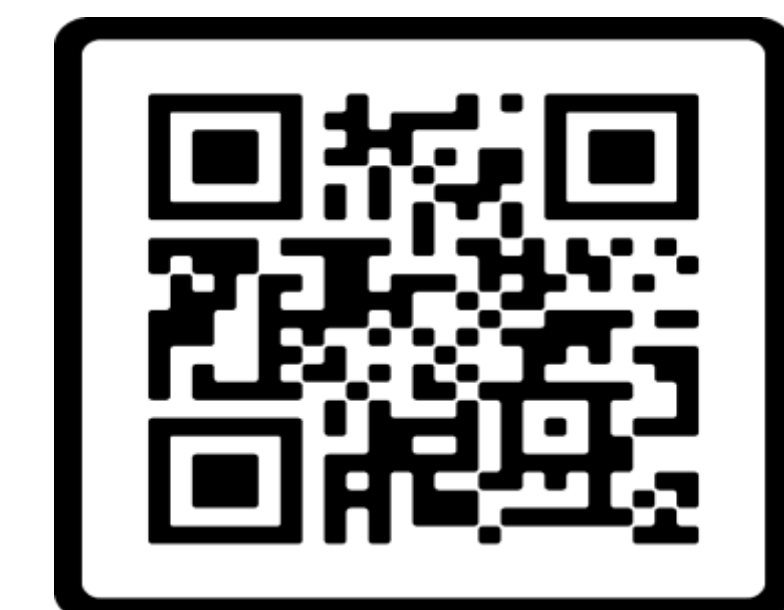
## Limitations

- - Wide range of dialects in Saudi Arabia
- - Poor text to speech quality in Arabic

We hope in the future that our application can be expanded and developing by adding more options to use a proper Saudi dialect and gulf dialect for the patients, expanding the words in the default dictionary in the section of helper dictionary and exercises. Also, the application focuses merely on early stage only so, we hope in the future consider other stages of Alzheimer disease by adding a section for severe cases.

## References

- نعم
- لا



SCAN ME

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