1. Introduction

a. Purpose

Aim : The aim of this project is to develop Android based Dzongkha spelling quiz Application so that not only kids but also general public can learn Dzongkha spelling any time.

Objectives

The following are the objectives set to achieve the aim of the project:

- To promote and enhance Dzongkha spelling through mobile technology.
- To develop free and offline Android application.

b. Scope

i) System Scope

To develop a Dzongkha Spelling Quiz app with the following features:

- Their will be 30 multiple choice questions.
- The users will get 20 seconds to choose the right answer, if not it will be consider as wrong answer.
- If user answer a question correctly they will be awarded with 20 coins and 100 points, if not nothing will be awarded.
- There will be 3 lifelines available for the users to solve the questions, if user answer 3 questions wrong then they are with 0 lifeline which it means that the game is over, where at last all the scores will be displayed that the user have earned.
- Two options will be provided that is 'MENU' and 'TRY AGAIN'. If users are going to redo again they need to click TRY AGAIN options.
- In this spelling quiz the sequence of the questions are not always same, they are generated randomly, which means even if the users answer the questions correctly or incorrectly and if they want to redo it once more,it won't be the same question, where new question will be generated.

ii) User Scope

This project is mainly for the Kids of Bhutan in order to learn the basics of Dzongkha from the very young age.

b. Non-functional requirements

- The app can be easily compatible to different versions of android and is independent of the size of any android phone and tablets.
- The app will work offline.
- The orientation of the app will be in both portrait and landscape.
- The application will be user friendly.
- The application will include developers information and can be shared. It will also consist of features such as rating the application, giving feedback section and exit option.

c. Software Requirements

For Developer

1. Java version : Java SE jdk 8 and above.
2. Android Studio version 4 and above.
3. Android SDK-25 and above.
4. Operating System : Ubuntu and Windows.
5. SQLite

- SQLite is a database engine. It is software that allows users to interact with a relational database. In SQLite, a database is stored in a single file a trait that distinguishes it from other database engines. This fact allows for a great deal of accessibility: copying a database

is no more complicated than copying the file that stores the data, sharing a database can mean sending an email attachment.

• SQLite version : 3.25.3

6. DB Browser

• DB Browser for SQLite(DB4S) is a high quality, visual, open source tool to create, design, and edit database files compatible with SQLite.DB4S is for users and developers who want to create, search, and edit databases. DB4S uses a familiar spreadsheet-like interface, and complicated SQL commands do not have to be learned.

• Version 3.12.1

3. Hardware requirements

For Developer

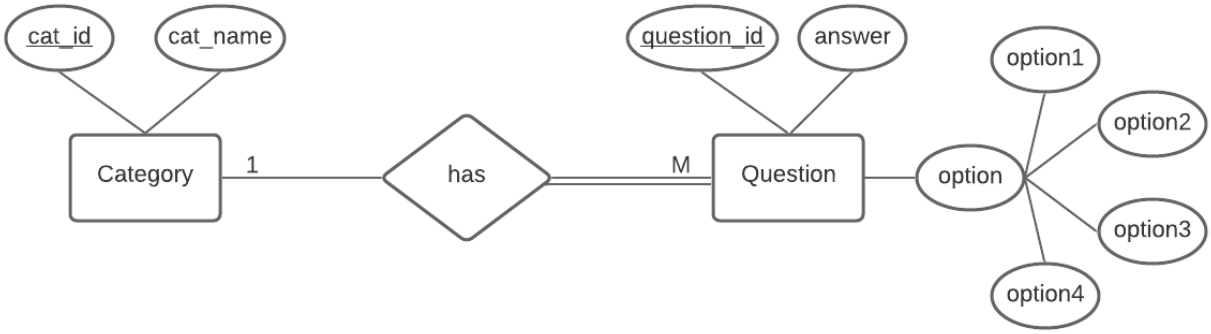
1. RAM : 4-8 GB
2. 2.00GHz*4 Processors
3. Disk Capacity : 1.0 TB and above.

For Users

1. Android Phone.

4. System designs

a. ERD(Entity Relationship Diagram)



b. Relational Schema

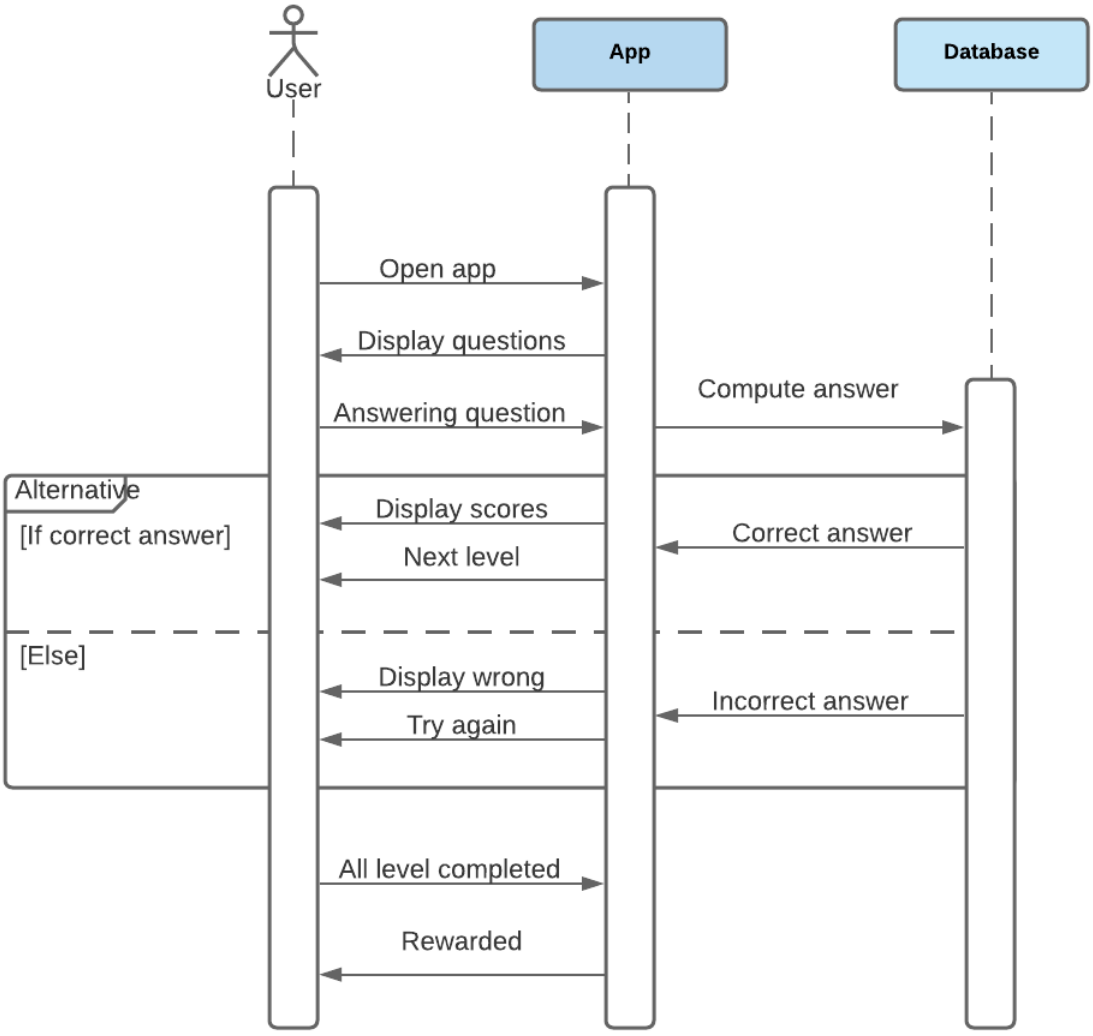
Category

cat_id	cat_name

Question

question_id	answer	option1	option2	option3	option4	cat_id

c. Sequence Diagram



d. Use case Diagram