

SOFTWARE REQUIREMENT SPECIFICATIONS

Project Topic: IT for beginners

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Introduction

a. Purpose

AIM:

To create simple and interactive computer basic learning application for students.

OBJECTIVE:

- ❖ To provide students with a comfortable forum for studying the fundamentals of computers.
- ❖ To launch app in play store.
- ❖ To help students become more proficient in computer's learning.

b. Scope

System Scope:

IT for beginners is an android app which includes the following features:

Register: To register in the app, the user will have to fill up the form with their personal details such as mail. With the mail given, they will get a verification code to complete their registration.

Login: The user will be using above registered mail as username to login.

CRUD Operation: allows admin to perform crud operation like to create, edit and delete.

Fundamentals: users can get the ideas about the computer fundamentals, the basics of computers.

Abbreviations: users can get the ideas on the short form or computer's abbreviation.

Shortcut Keys: The user can have an idea on the use of shortcut keys instead of mouse.

Quiz: Users can do quiz to test the level of understanding after having concept of IT basic and using this app. Logout: The user can logout from the session.

Logout: Users can logout from the app after logging and using.

User Scope:

IT for beginner's app is an android based application which targets the students of grade seven to twelve.

2. Requirements

a. Functional Requirements:

IT for beginner's app will include the following features:

User Feature:

1. Register: To register in the app, the user will have to fill up the form with their personal details such as mail. With the mail given, they will get a verification code to complete their registration.
2. Login: The user will be using above registered mail as username to login.
3. View: The user can view features like fundamental, abbreviation and shortcut key to refer during their learning.
4. Attempt Quiz: The user can even attempt quiz.
5. Logout: The users can logout from the app after logging and using this app.

Admin Feature:

CRUD Operation: allows admin to perform crud operation like to create, edit and delete.

View Users: Admin can view who else have access to this app.

b. Non-functional Requirements

- ✓ Usability: The users will be provided with the direction and naming conventions properly written with icons of the feature so that they will able to use the application easily.
- ✓ Security: The application will provide security as it will allow only the students or the users to register and login to access the IT for beginner's app.
- ✓ Portability: The application will be portable in different version of android and it is independent of the size of the android phone and tablets.
- ✓ The application will be in portrait orientation.

c. Software Requirements

For developer:

- ✓ Java SE JDK 8 and above: The Java development kit lays the foundation for the Android SDK.
- ✓ Android Studio version 4 and above
- ✓ Android SDK-25 and above: Included in Android Studio. Provides access to Android libraries and allows you to develop for Android.
- ✓ Cloud Firestore:
 - NOSQL database (easy) which reads fast.
 - Collection of hierarchical objects (JSON) made up of document and collections.
 - Document cannot contain another document and document contain 1mb size and root can only contain collections.

d. Hardware Requirements

For developer:

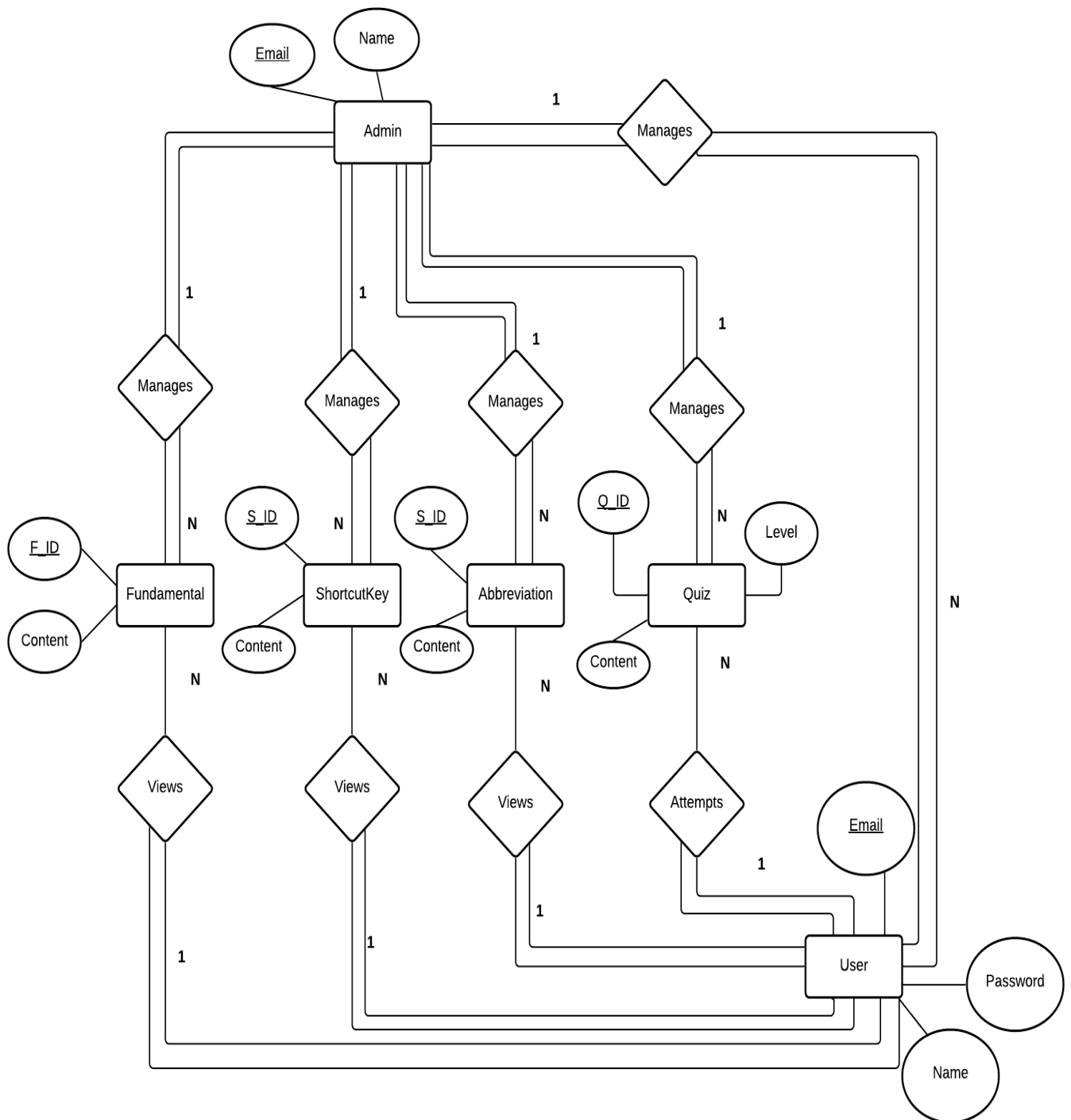
- ✓ Laptop with minimum 4GB RAM
- ✓ 2.00GHz*4 Processor
- ✓ 1280 x 800 minimum screen resolution
- ✓ Android Smartphone to use as an emulator

For users:

- ✓ Android smartphone

4. System designs

a. ERD (Entity Relationship Diagram)



This Entity Relationship diagram represents the model of IT for beginner's Application Entity. The entity relationship diagram of my Application shows all the visual instrument of database tables and the relations between Admin, Fundamental, shortcut keys, abbreviation, quiz and User.

- Under Admin entity, I have attribute like Email and Name.

- Under Fundamental entity, I have attribute such as F_ID and Content.
- Under Shortcut Key entity, I have attribute like S_ID and Content.
- Under abbreviation entity, I have attribute like A_ID and Content.
- Under Quiz entity, I have attribute like Q_ID, Content and Level.
- Under user entity, I have attribute such as Email, Name and Password.

Each entity has primary key where email as primary key under Admin entity. Like that Fundamental entity have F_ID as primary key. Under Shortcut Key Entity S_ID is primary. Under Abbreviation Entity A_ID is primary key. Under Quiz Entity Q_ID is primary key. For user entity, I have email as primary key. The relationship used for my diagram are all one to many relationships.

b. Relational Schema

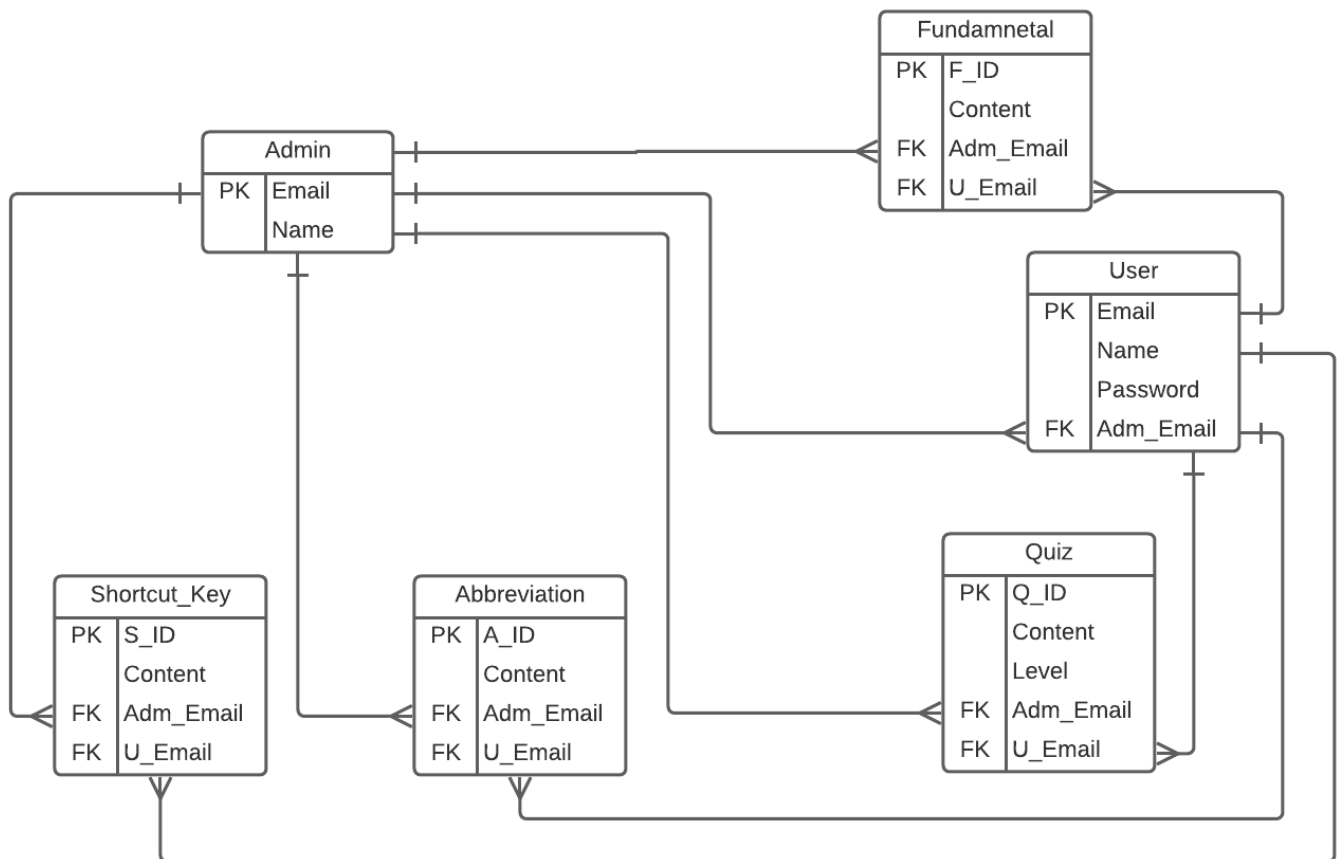


Table Name:

- Admin

- User
- Fundamental
- Shortcut Key
- Abbreviation
- Quiz

Primary Key:

- Email is primary key of Admin.
- Email is primary key of User.
- F_ID is primary key of fundamental.
- S_ID is primary key of shortcut Key.
- A_ID is primary key of abbreviation.
- Q_Id is primary key of quiz.

Foreign Key:

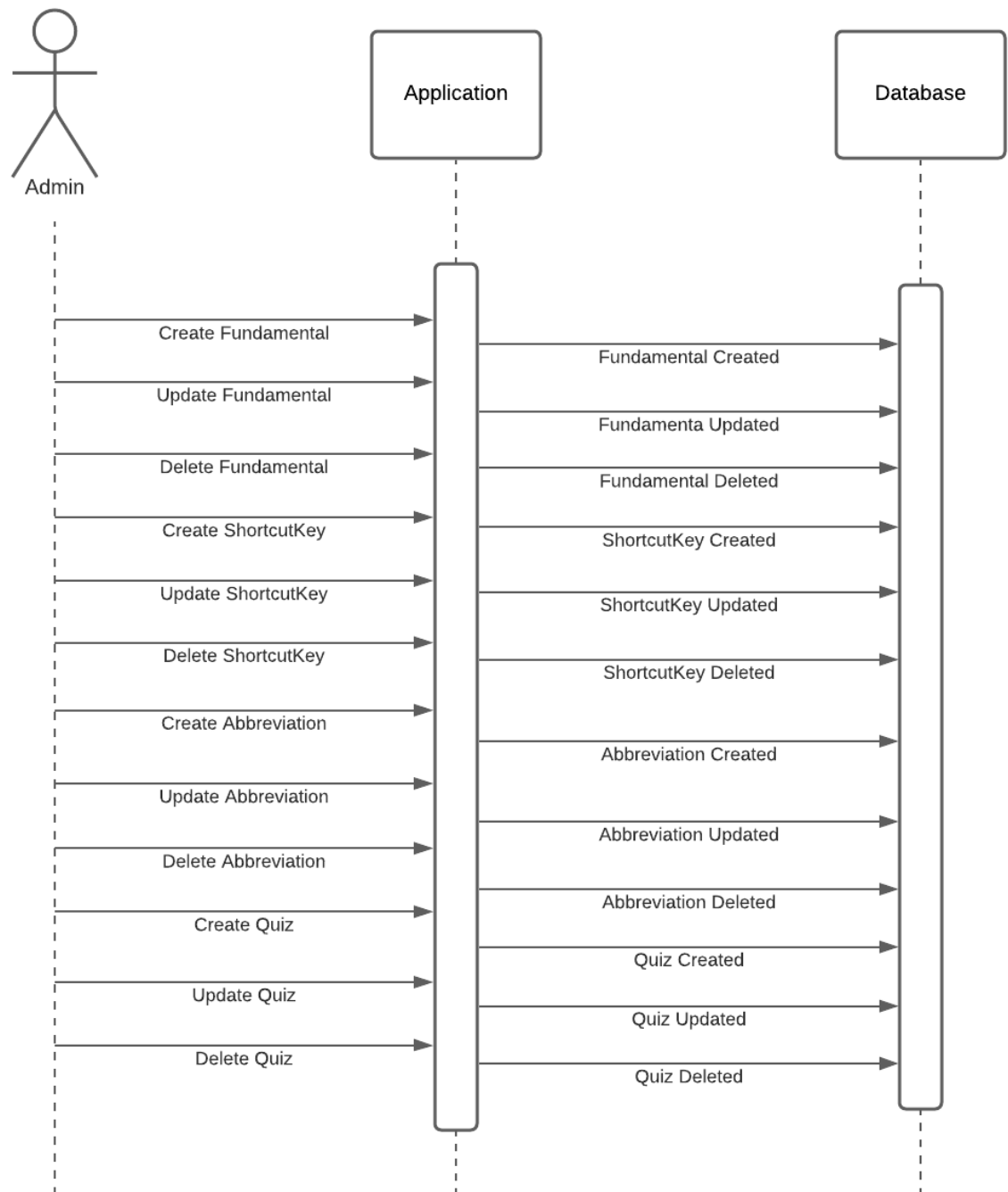
- Adm_Email in user is foreign key.
- Adm_Email and U_Email in fundamental is foreign key.
- Adm_Email and U_Email in shortcut key is foreign key.
- Adm_Email and U_Email in abbreviation is foreign key.
- Adm_Email and U_Email in quiz is foreign key.

c. Sequence Diagram

I have two diagram in my application where one for Admin and another for the user.

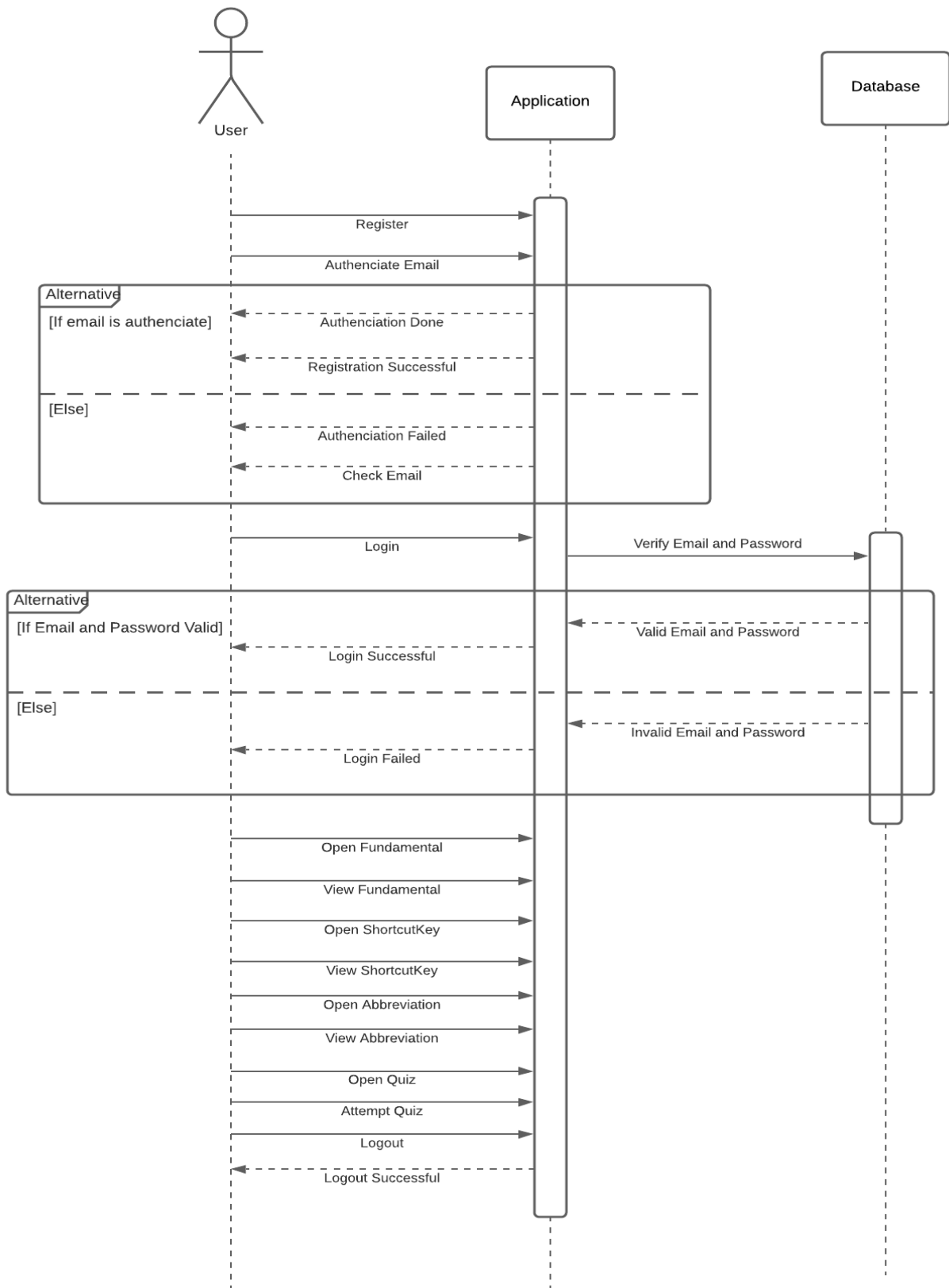
The one shown below is for the admin that shows the interaction between the admin, application and database object.

Admin

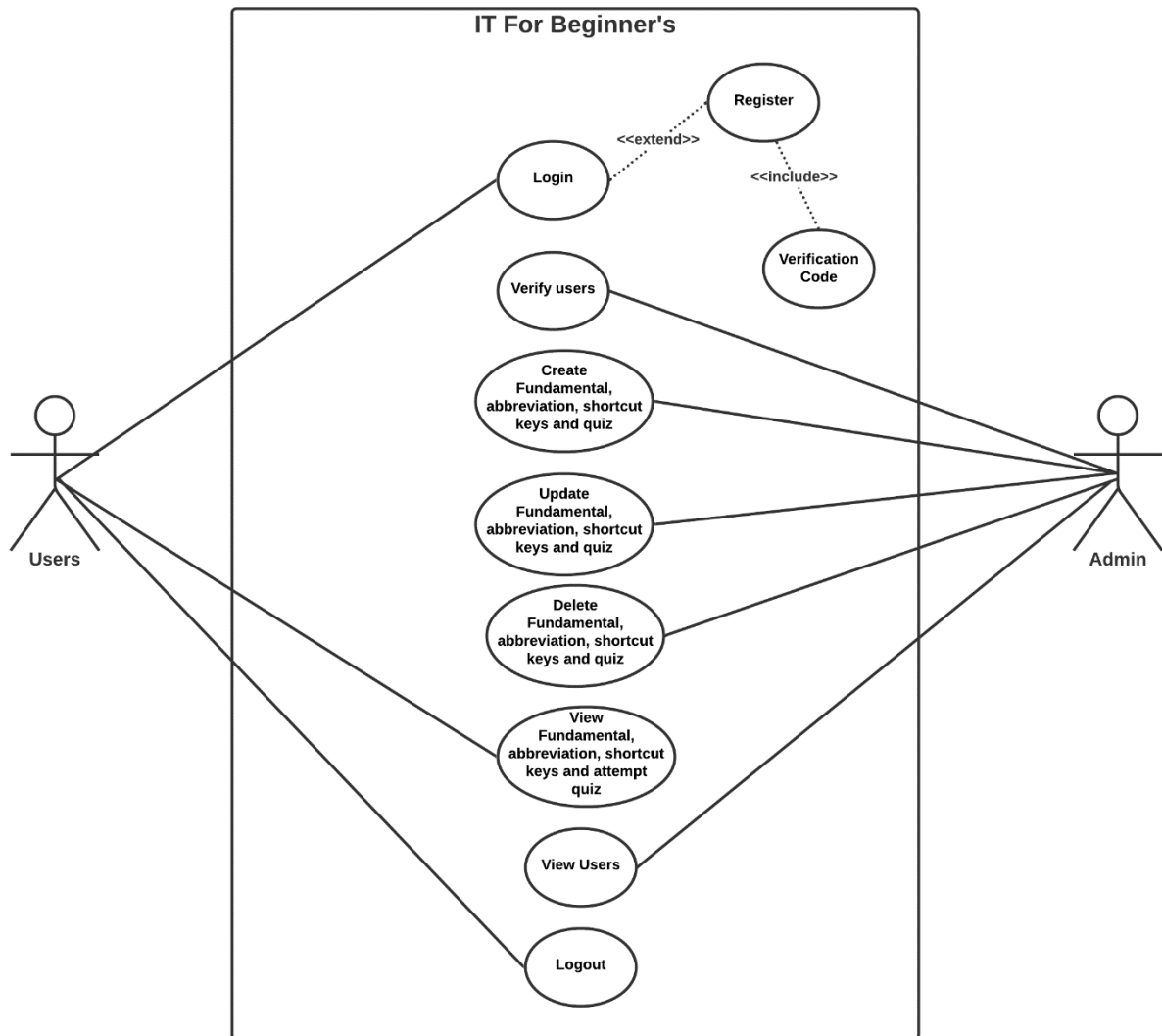


The one shown below is for user that shows the interaction between the user, application and database object.

Users



d. Use case Diagram



In this usecase diagram, I have two actors, one is primary actor and another one is secondary actor. Primary actor is those who initiates an interaction with the secondary actor(Admin) and my primary actor is user. The secondary actor is those who need assistance to achieve the user's goal where incase of my diagram, I have admin as primary actor.

The functionality of the users is:

1. Register
2. Login
3. View
4. Attempt quiz.
5. Logout

The functionality of admin is:

1. Create fundamental, shortcut key, abbreviation and quiz.
2. Update fundamental, shortcut key, abbreviation and quiz.
3. Delete fundamental, shortcut key, abbreviation and quiz.
4. View Users