Capstone Project 1

CMU-SE 450

Database Design

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LinguaSnap for Travelers

Submitted by

Dat, Nguyen Thanh
Truong, Vu Dinh
Long, Pham Ba Hoang
Kha, Nguyen Ngoc

Approved by Nguyen Duc Man

Capstone Project 1- Mentor:

Name	Signature	Date

INTERNATIONAL SCHOOL OF DUY TAN UNIVERSITY

PROJECT INFORMATION

Project acronym	LiS		
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Lead institution	International School, Duy Tan University		
Project mentor	Nguyen Duc Man Email: mannd@duytan.edu.vn Phone: +84 904 235 945		
Partner organization	Duy Tan University		
Scrum Master	Dat, Nguyen Thanh	ntdat1232001@gmail.com	0972530969
Product owner	Truong ,Vu Dinh	jonnyvu2210@gmail.com	0905223611
Team members	Kha, Nguyen Ngoc	winkha14567@gmail.com	0945721427
	Long, Pham Ba Hoang	longphambahoang@gmail.com	0793310221

DATABASE DESIGN DOCUMENT

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Author(s)	Truong, Vu Dinh		
Team Information	**Name**	**Role**	
	Dat, Nguyen Thanh	Leader	
	Truong ,Vu Dinh	Member	
	Kha, Nguyen Ngoc	Member	
	Long, Pham Ba Hoang	Member	
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1.0	15/03/2023	Initial Release	All members	x
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Document Approvals

The following signatures are required for approval of this document:

Document Approval		
Man, Nguyen Duc(Ph.D) Mentor		Date:
Dat, Nguyen Thanh Scrum master, DevTeam		Date
Truong, Vu Dinh Product Owner, DevTeam		Date
Long, Pham Ba Hoang DevTeam		Date
Kha, Nguyen Ngoc DevTeam		Date

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1. Introduction

1.1. Purpose

- Setting up an overview of the database system's interview preparation app.
- Provides database tables needed by the system and the relationship between common for programmers.

- Description designing a database (DB), a collection of data related to storage on a computer through a database management system as a basis for data query related software.

- Provide the entire needed database for the Interview Preparation Application.

1.2. Goal

- This Database Design Document describes the design of a database, that is, a collection of related data stored in one or more computerized files that can be accessed by users or developers via Firebase.
- It describes both logical and physical definition, non-functional, database interfaces, tables, code create tables.
- It includes the tables and performance considerations and requirements. The following topics are covered in this document:

- Assumptions and decisions on database design
- Entity – mapping
- Table, column definitions
- Constraint: primary key, unique, foreign key.
- Column and row level validation rules (check constraints)
- Interfaces and dependencies with other components.

- This Database Design Document of Interview Preparation Application is composed of definitions for database objects derived by mapping entities to tables, attributes to columns, unique identifiers to unique keys and relationship to foreign keys.
- During design, these initial definitions are enhanced to support the functionality described in the functional specification / user stories and defined in the primary and supporting modules of the application high level design

Hardware and Software Requirement

The technology component	
Attribute	**Description**
Database	Firebase
Hardware	Android Mobile

2. Database Design Decision

This section contains the decisions that were made when designing the database for the project. Problems, alternative solutions, and motivated choices are listed below. The section also lists any design assumptions that had to be made. In case the assumptions are results of ambiguities or lack of details, they will need verifying by the analyst team.

2.1. Mapping Rules

● The additional data will be stored as a free JSON structured format or "document", where the data can be in any form from integers to data strings to custom formatted text.

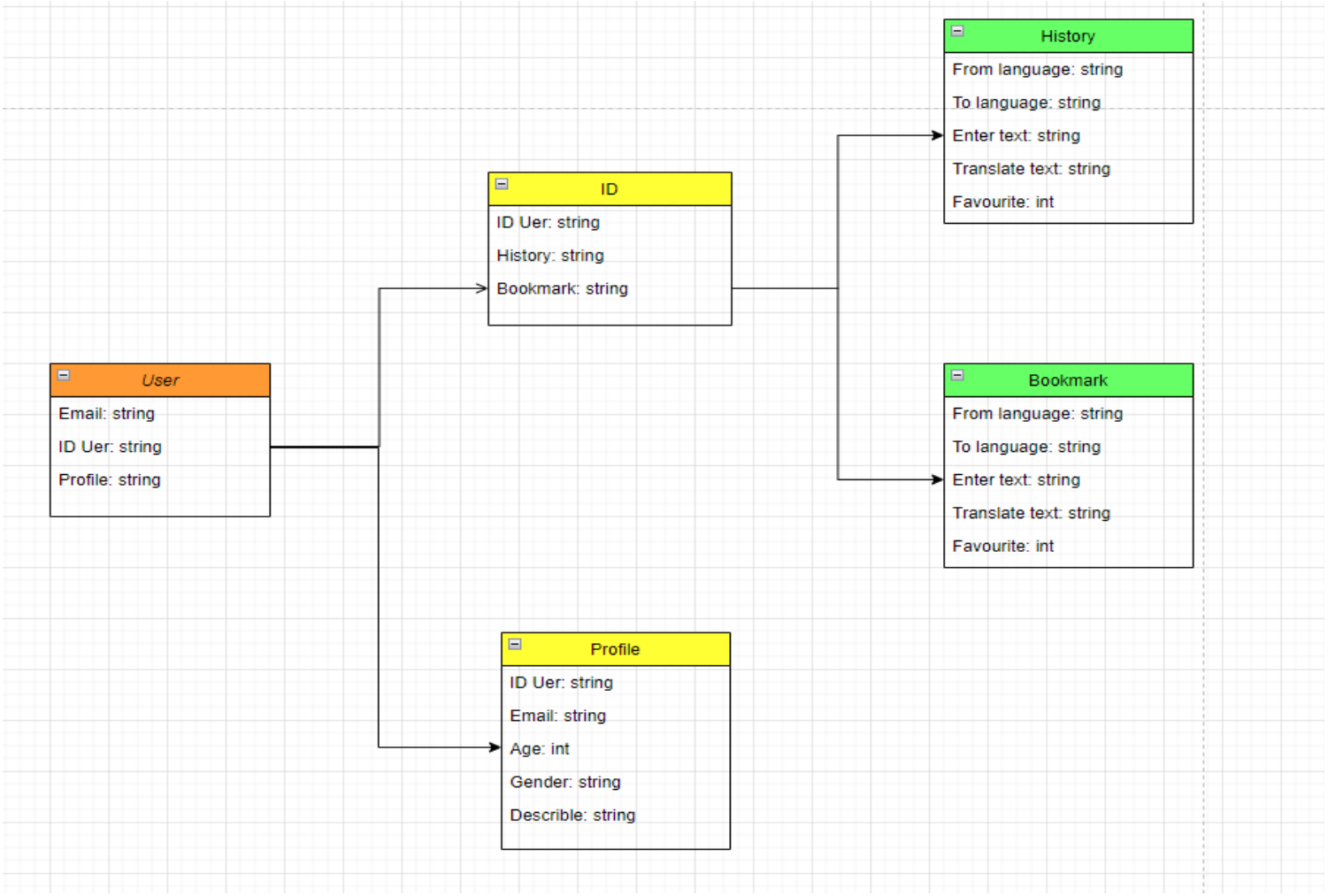
● Entities are mapped into tables in a one to one manner.

● Real-time database

● Real-time sync

● Non-relational

2.2. Tables relationship diagram



Picture 1: Tables relationship diagram

3. Table

3.1. Overview

No	Table name	Short description
1	User	Email and ID user
2	ID	History and Bookmark
3	Profile	Information of user
4	History	Data of translation
5	Bookmark	Data of bookmark

3.2. Table detail

3.2.1. User

This included the following information: **ID, Email, Profile**

ID	Field	Data Type/ size	Constraints
1	**ID**	Text string	NOT NULL
2	**Email**	Text string	NOT NULL
3	**Profile**	Text string	

3.2.2. ID

This included the following information: **ID User, History, Bookmark**

ID	Field	Data Type/ size	Constraints
1	**ID User**	TEXT STRING	NOT NULL
2	**History**	TEXT STRING	
3	**Bookmark**	TEXT STRING	

3.2.3. Profile

This included the following information: **ID User, Email, Age, Gender, Describle**

ID	Field	Data Type/ size	Constraints
1	**ID User**	TEXT STRING	NOT NULL
2	**Email**	TEXT STRING	NOT NULL
3	**Age**	INT	
4	**Gender**	TEXT STRING	
5	**Describle**	TEXT STRING	

3.2.4. History

This included the following information: **From language, To language, Enter text, Translate text, Favourite**

ID	Field	Data Type/ size	Constraints
1	**From language**	TEXT STRING	
2	**To language**	TEXT STRING	
3	**Enter text**	TEXT STRING	
4	**Translate text**	TEXT STRING	
5	**Favourite**	INT	NOT NULL

3.2.5. Bookmark

This included the following information: **From language, To language, Enter text, Translate text, Favourite**

ID	Field	Data Type/ size	Constraints
1	**From language**	TEXT STRING	
2	**To language**	TEXT STRING	

3	**Enter text**	TEXT STRING	
4	**Translate text**	TEXT STRING	
5	**Favourite**	INT	NOT NULL