Gyalpozhing College of Information Technology
Royal University of Bhutan

ITW202 MOBILE APPLICATION

Assignment 2

Section A

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1 Introduction

a) **Purpose**

FITNESS is an Android portal where the users can calculate their Body Mass Index (BMI) and also view a nutrition data alongside to maintain their diets. They will also be updated with the fitness news and quotes to keep them reminded of their fitness and health.

So since Physical health is now an issue in this rapidly evolving technology era, i aim to make an application where one can calculate their BMI through which they will know their health status and through that maintain their diets. In addition to that, it will also keep them updated with health related news and will help them locate the fitness centers nearby to workout. Keeping yourself fit and updated with the diets is a healthy way of living your life.

AIM: To develop an android application for calculating Body Mass Index (BMI), displaying a nutrition data alongside to maintain your diet accordingly and updating with the fitness news.

Objectives:

- My project proposes to develop a platform for calculating your BMI and a display of nutrition to maintain your diet accordingly.

- Fitness related news/codes will be uploaded so you could be motivated and be reminded of your fitness.

b) Scope

System Scope

- **Calculating BMI:** it will allow you to calculate your Body Mass Index using your weight and height and tell you whether your weight is in healthy proportion to your height.
- **Diet Corner**: it will provide nutrition and calorie content of commons foods so can you can plan your diet according the nutrition and calorie content.
- **Health-line:** it will display the news/quotes related to fitness of one's body so you can be motivated to exercise and keep your body fit.

User scope

There is no specific target for this app, anyone can use it to simply calculate their BMI or get news on being fit.
The area coverage of my project will be limited to our country, since the gym locations and the foods in the nutrition data will only be of my country.

2 Requirements

a) Functional Requirements

- **Calculate:** it will allow you to calculate your Body Mass Index using your weight and height and tell you whether your weight is in healthy proportion to your height.
- **Diet Corner**: it will provide nutrition and calorie content of commons foods so can you can plan your diet according the nutrition and calorie content.
- **Health-line:** it will display the news/quotes related to fitness of one's body so you can be motivated to exercise and keep your body fit.

b) Non-Functional Requirements

i.Performance

- The software shall support the use of multiple users at same time.
- The app shall be independent of the different versions of android.

ii. Learnability.

- It will be very easy for the users to learn and use the main actions once they see the interface.

c) Software Requirements

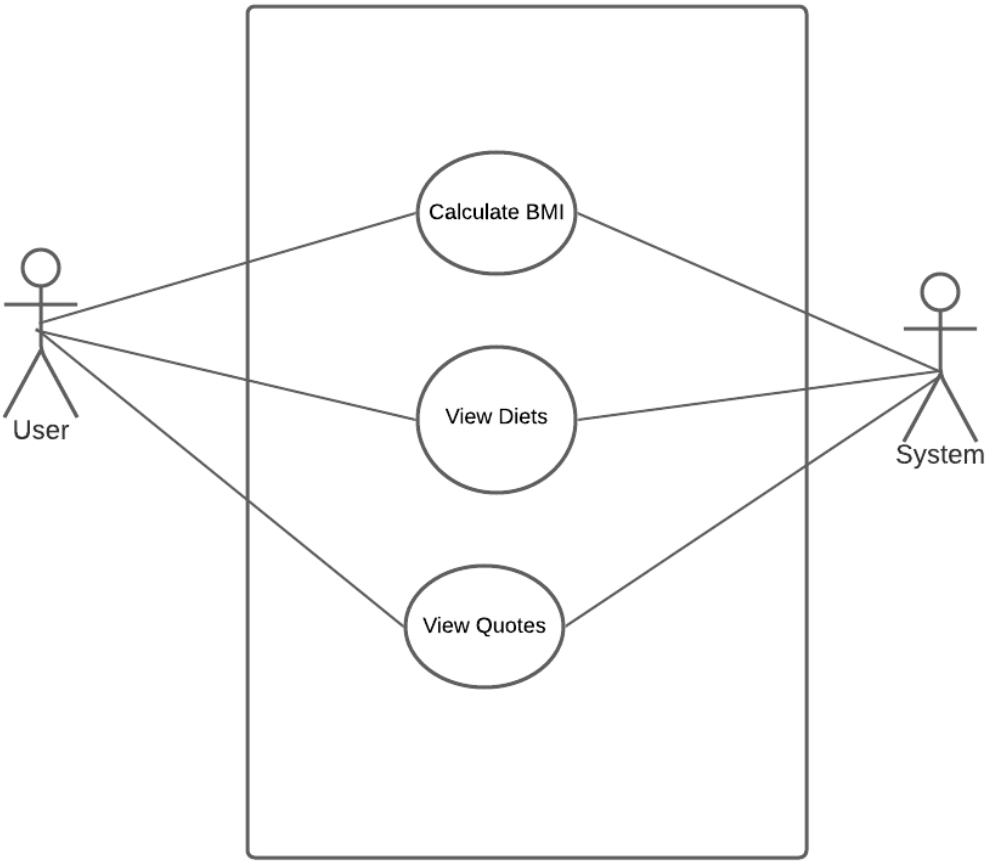
- Andriod Studio version 4.1.2
- Java Standard Edition Development kit (JDK) 15
- Andriod SDK version 16
- Gradle Version 6.5
- Operating System: Microsoft windows 10 (64 bit)
- Database: MySQL 8

3 Hardware Requirements

- RAM: 4GB and above
- Processors: 2.00GHz*4
- Screen Resolution: 120*800 space: 2GB and above.
- Android Smartphone.

4 System design

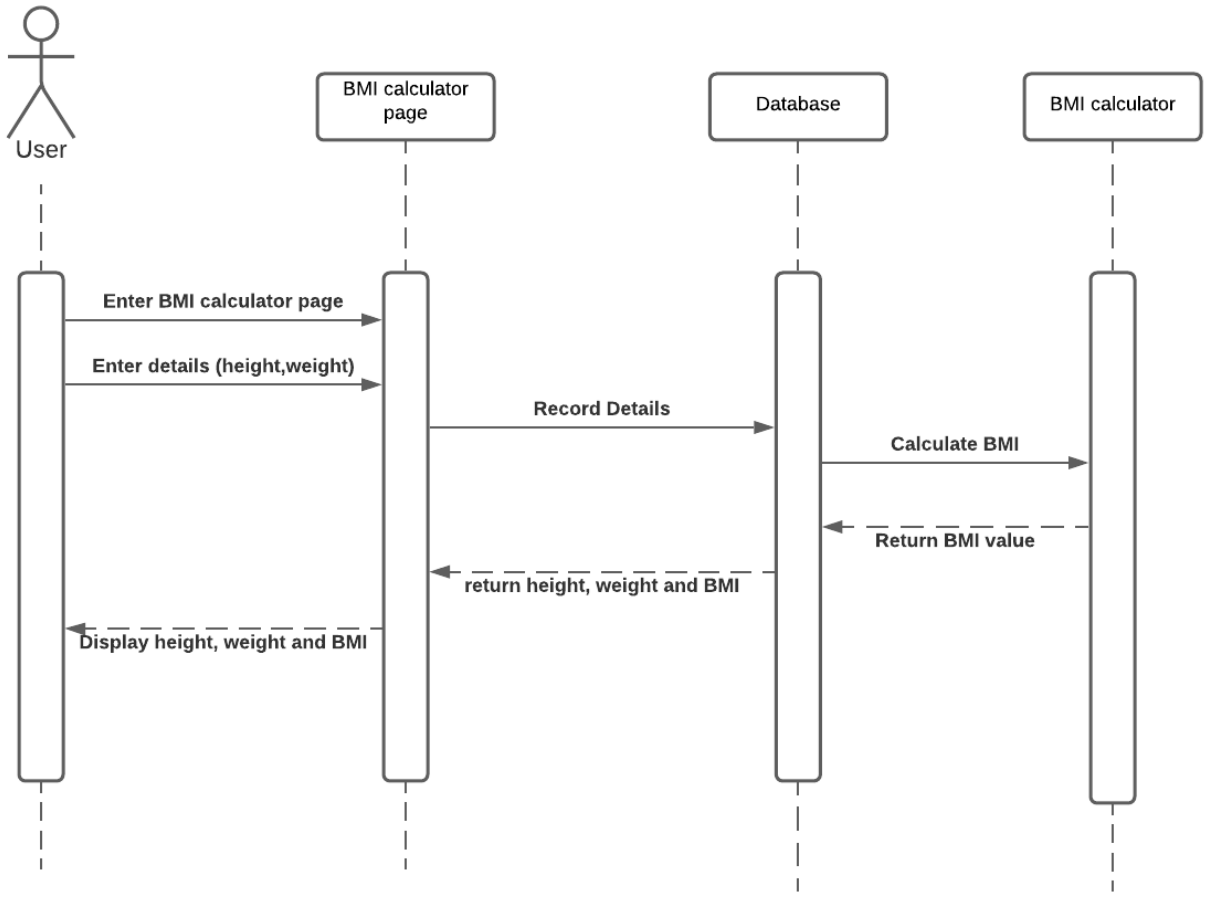
a. Use case diagram



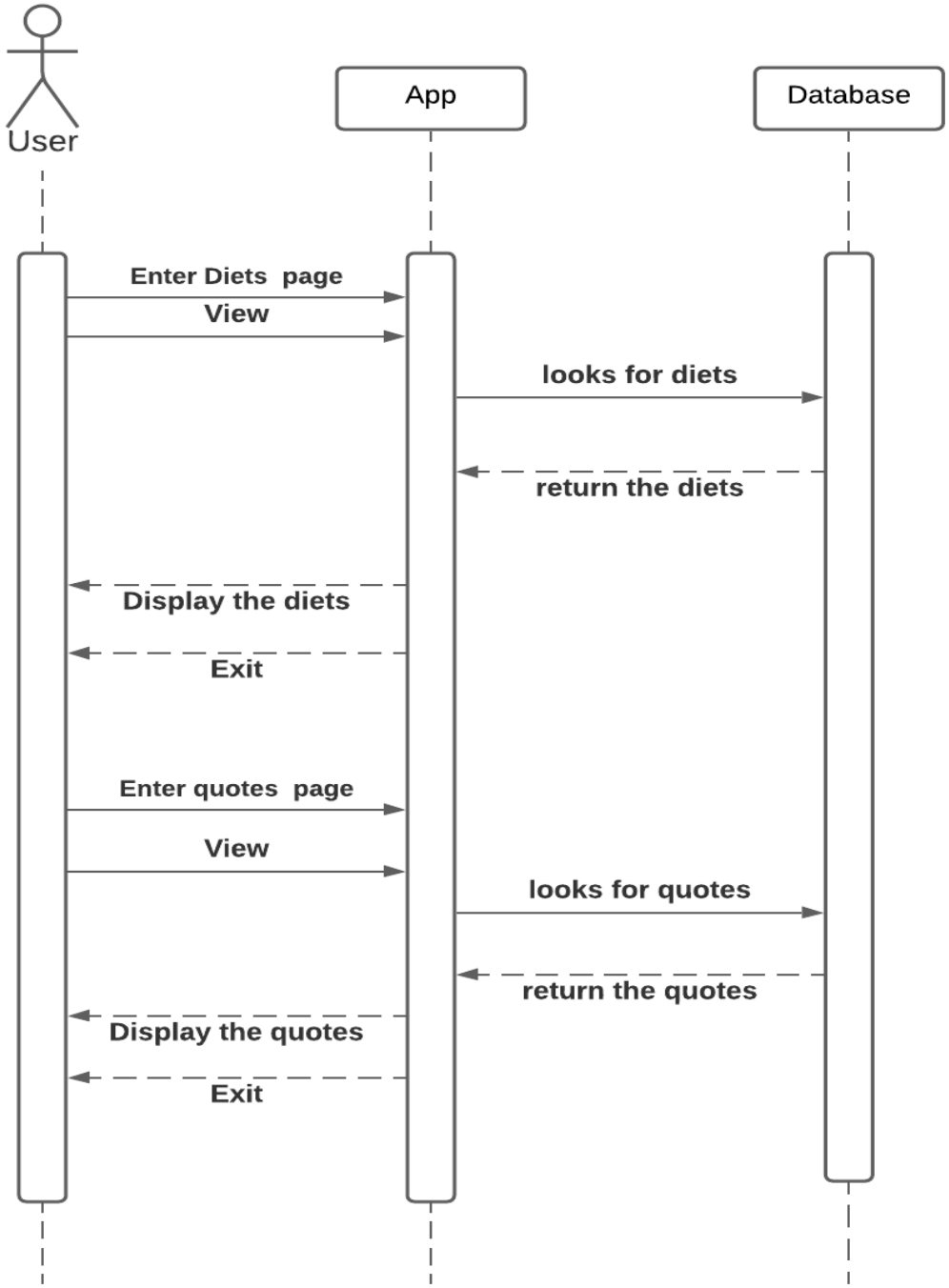
The functions that my app provides for the users are:

- Firstly to calculate the BMI.
- They can also view the Diets of the regularly eaten foods and vegetables in our country.
- They can view the Quotes related fitness and the need to be fit for their motivation purpose.

b. Sequence Diagram

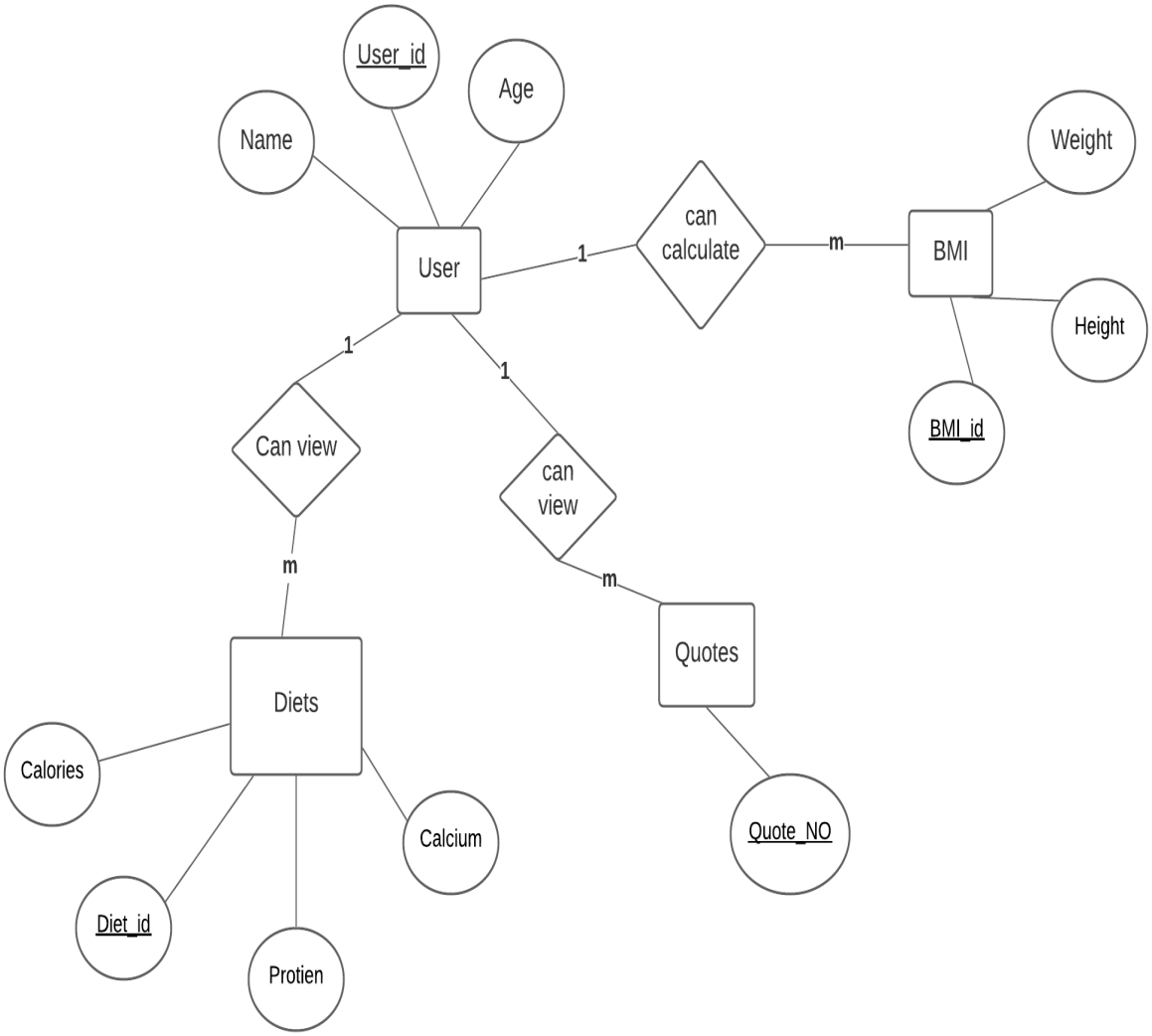


This is the sequence diagram for calculating the BMI.
If the users want to calculate their BMI, the users can enter the BMI calculator page they have to input their details which will include their Height and Weight.
After that the details will be stored and will be further sent to the calculator which will calculate the BMI and will display back the BMI for the user.



This is the sequence diagram for viewing the Diets and the Quotes.
If the users wish to see the Diets or some motivational quotes, they can enter the respective pages. After that the diets and the quotes stored will be displayed for the them.

C. Entity Relationship Diagram



There are 4 entities: i.User: It's attributes are:

- User.id (primary key)
- Age
- Name

ii.BMI: It's attributes are:

- BMI.id (primary key)
- Height
- Weight

iii.Diets: It's attributes are:

- Diet.id (primary key)
- calcium (it will hold records of the calcium content of a particular food.)
- Calories (it will hold records of the calories content of a particular food.)
- protein (it will hold records of the protein content of a particular food.)

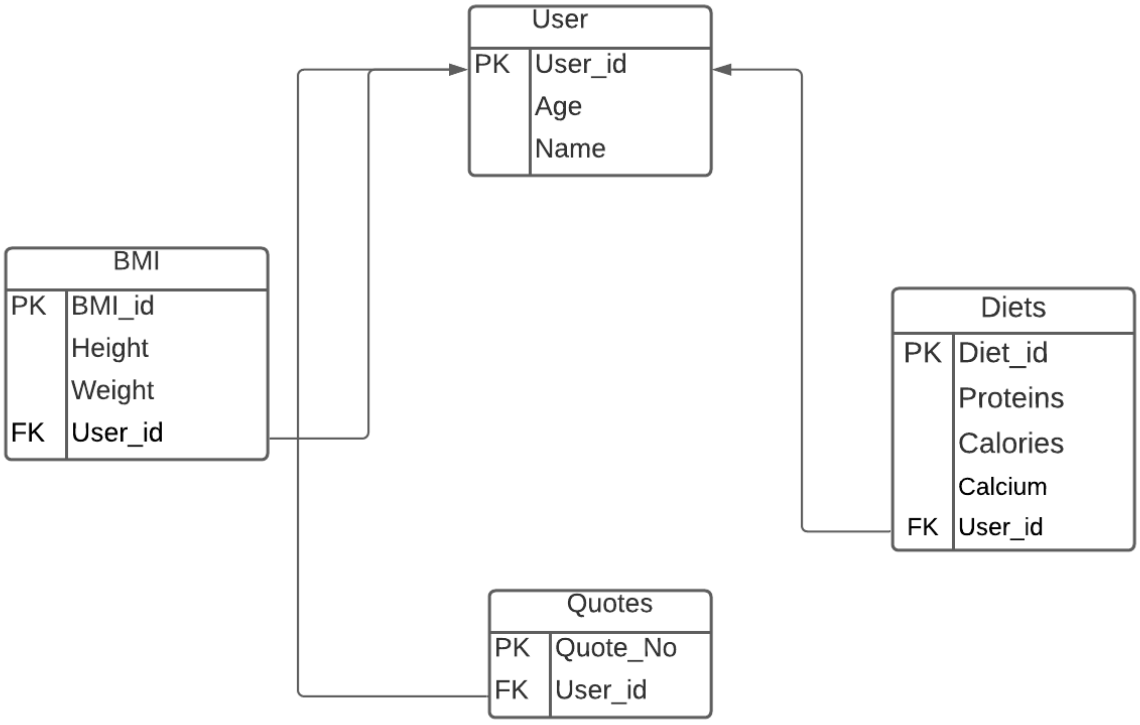
iv. Quotes: it's Attribute is:

- Quote.NO (Primary key)

Relationships:

- The relationship between **user** and **BMI** is, the users can calculate BMI. It's cardinality ratio is 1 to many because a single user can calculate many BMI inputting different height and weight.
- The relationship between **user** and **Diets** is, the users can view the diets. It's cardinality ratio is 1 to many because a single user can view as many different diets as they want.
- The relationship between **user** and **Quotes** is, the users can view the quotes. It's cardinality ratio is 1 to many because a single user can view as many different quotes as they want.

d. Relational Schema



– Since the cardinality ration between user and (BMI, Quotes, Diets) is 1 to many, the primary key of user (User.id) has been taken as the foreign key of the others and a relationship has been drawn between them.