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COMSW4111 - Project proposal

Health Care

Health Care is a food diary and exercise app for people seeking to monitor their calorie intake and expenditure. *Health Care* will be available from app stores and is designed to be a cross-platform system (website & phone app) available anywhere and anytime.

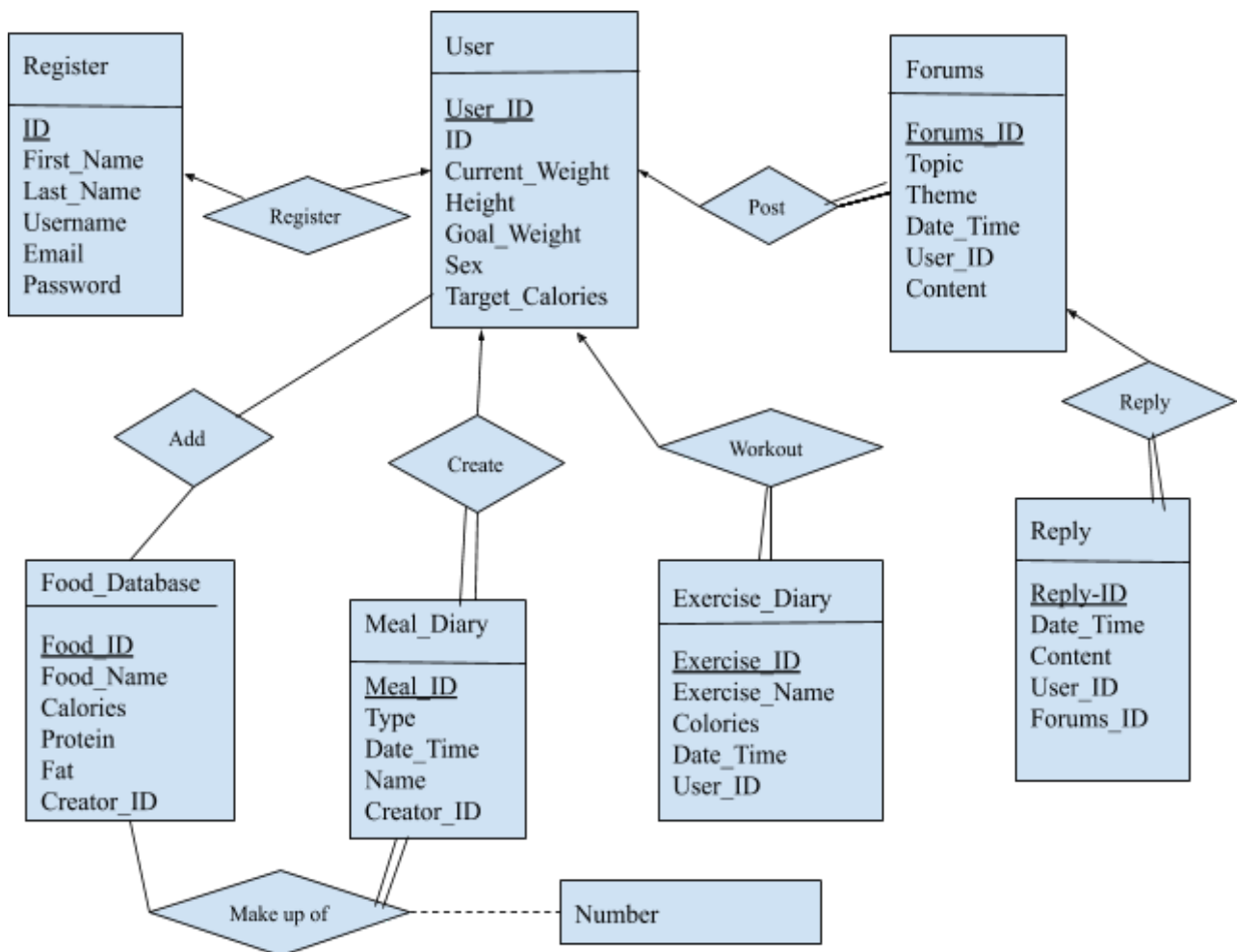
Users must register in order to use *Health Care*. They must provide a first name, last name, unique username and email address. After they have registered, users need to enter their current weight, height, goal weight, target daily calories intake and sex. *Health Care* records the date users became a member of *Health Care*. The app system has three sections: the meal diary & food database, the exercise diary, and the user forums. The food database contains nutritional information about all types of unprocessed food, and common processed food and prepared foods by the major food retailers. It records the calories in total and the amount of protein and fat levels. Users can also add the information which is not included in the food database. To record calorie intake, users can record what they eat under meal section and choose different meal type, i.e. Breakfast, Lunch, Dinner and Snacks. With the food information in the database, users can record mono diets, including only one food, and can also create their own meals including different food. So users can quickly add commonly consumed meals and foods to the diary. Users can record their daily exercise and the calories they burn in an exercise diary. Besides, all users can post on forum areas under different themes, such as "Motivation", "Food Ideas" and "Problem Solving". Under each theme, users can post a topic and others can reply to the topic.

For the data plan, we have found food nutritional data and we will make up some user data by asking our friends and classmates.

For part 3, we will choose the Web Front-End option. For example, the user can browse the information in the food and forum database. If the user enters the food name, the app will return the nutritional information of this food. If the user enters the keyword of the topic, the app will return the relevant posts. Besides, the app can display personalized information for different users. According to the user information, the app can calculate how many calories they need per day. When user determine and enter the target weight, the app will calculate whether the target weight is underweight by calculating the BMI. The calendar will display every calorie the user get or lose from food and exercises and also the net calories. The app could compare the net calories and daily needed calories to give the user personalized recommendation on diet and exercise.

For the contingency plan, if one partner drops the class, for part 1 and 2, the other person will only need to construct the database of food diary & exercise diary and can drop the social media part, i.e., the "Reply" and "Forum" entities.

ER diagram:



SQL schema:

```
CREATE TABLE Register (  
    ID                NUMBER(12,0) NOT NULL,  
    First_Name        VARCHAR(20) NOT NULL,  
    Last_Name         VARCHAR(20) NOT NULL,  
    Username          VARCHAR(20) NOT NULL,  
    Email             VARCHAR(50) NOT NULL,  
    Password          VARCHAR(8) NOT NULL,  
    UNIQUE(Username),  
    UNIQUE(Email),  
    PRIMARY KEY ID  
)
```

```
CREATE TABLE User (  
    User_ID           NUMBER(12,0),  
    ID                NUMBER(12,0),  
    Current_Weight    NUMBER(12,2),  
    Height            NUMBER(12,2),  
    Goal_Weight       NUMBER(12,2),  
    Sex              VARCHAR(10),  
    Target_Calories   NUMBER(12,2),  
    PRIMARY KEY User_ID,  
    FOREIGN KEY ID REFERENCES Register  
)
```

```
CREATE TABLE Forums (  
    Forums_ID         NUMBER(12,0),  
    Topic             VARCHAR(50),  
    Theme             VARCHAR(20),  
    Date_Time         DATETIME,  
    User_ID           NUMBER(12,0),  
    Content           VARCHAR(1000),  
    PRIMARY KEY Forums_ID,  
    FOREIGN KEY User_ID REFERENCES User  
)
```

Note: Themes can only be one of “Motivation”, “Food Ideas” and “Problem Solving”.

```

CREATE TABLE Food_Database (
    Food_ID          NUMBER(12,0),
    Food_Name        VARCHAR(30) NOT NULL,
    Calories          NUMBER(12,2) NOT NULL,
    Protein           NUMBER(12,2),
    Fat               NUMBER(12,2),
    Creator_ID        NUMBER(12,0),
    PRIMARY KEY Food_ID,
    FOREIGN KEY Creator_ID REFERENCES User
)

```

```

CREATE TABLE Meal_Diary (
    Meal_ID          NUMBER(12,0),
    Type             VARCHAR(20),
    Date_Time        DATETIME,
    Name             VARCHAR(20),
    Creator_ID        NUMBER(12,0) NOT NULL,
    PRIMARY KEY Meal_ID,
    FOREIGN KEY Creator_ID REFERENCES User
)

```

Note: Type can only be one of “Breakfast”, “Lunch”, “Dinner” and “Snack”.

```

CREATE TABLE Reply (
    Reply-ID         NUMBER(12,0),
    Date_Time        DATETIME,
    Content          VARCHAR(1000),
    User_ID          NUMBER(12,0) NOT NULL,
    Forums_ID        NUMBER(12,0) NOT NULL,
    PRIMARY KEY Reply_ID,
    FOREIGN KEY User_ID REFERENCES User,
    FOREIGN KEY Forums_ID REFERENCES Forums
)

```

```
CREATE TABLE Make_Meal (  
    Meal_ID      NUMBER(12,0),  
    Food_ID      NUMBER(12,0) NOT NULL,  
    Number       NUMBER(12,0) NOT NULL,  
    FOREIGN KEY Meal_ID REFERENCES Meal_Diary,  
    FOREIGN KEY Food_ID REFERENCES Food_Database  
  
)
```

Note: The Make_Meal here is the relationship table between Food_Database and Meal_Diary.

```
CREATE TABLE Exercise_Diary (  
    Exercise_ID   NUMBER(12,0),  
    Exercise_Name VARCHAR(20) NOT NULL,  
    Calories      NUMBER(12,2) NOT NULL,  
    Date_Time     DATETIME NOT NULL,  
    User_ID       NUMBER(12,0) NOT NULL,  
    PRIMARY KEY Exercise_ID,  
    FOREIGN KEY User_ID REFERENCES User  
  
)
```