SEN3006
Software Architecture
Project Report

Group No: **49**
Project Title: **Health Care Project - SelfCare**

Student Full Name: **Burhan Emir Keleş**
Student ID: 1728938
Lab Section no: 901

Student Full Name: **Sarkis Semerciyan**
Student ID: 1732074
Lab Section no: 903

1. Introduction

    1.1 Purpose/Project Proposal

Our health care software project which we have called "SelfCare" will let it users track their health care needs in a simple mobile application. As we have designed it contains three subpages. In first page, "articles" page we will keep our users up to date with our videos that we have made (uploaded to YouTube) related to their daily health care, tips, exercises and other topics that we going to have/use feedback from the users and their needs. In the second-profile page we will let our users measure/calculate their body mass index (BMI) with their inputs, which are going to be their height, weight and age. SelfCare will calculate users BMI and store the data in the third-last subpage. As we have stated in previous sentence stored BMI data will be tracked in the last subpage-stats page and users will be able to track their weekly physical activity in this page too.

   1.2 Software Language/ Project Environment

Our project, SelfCare has been developed using the 1.2 Dart language on Flutter SDK.

    1.3 Work Partitioning

Name	Role	Date
Burhan Emir Keleş	Backend Development Interface Design	17.04.2021 - 21.05.2021
Sarkis Semerciyan	Interface Design Documentation and Implementation	17.04.2021 - 21.05.2021

All the work has been done together by both project members. The role detail stated above is to mention which they have focused on more.

2. Architectural Goals and Constraints
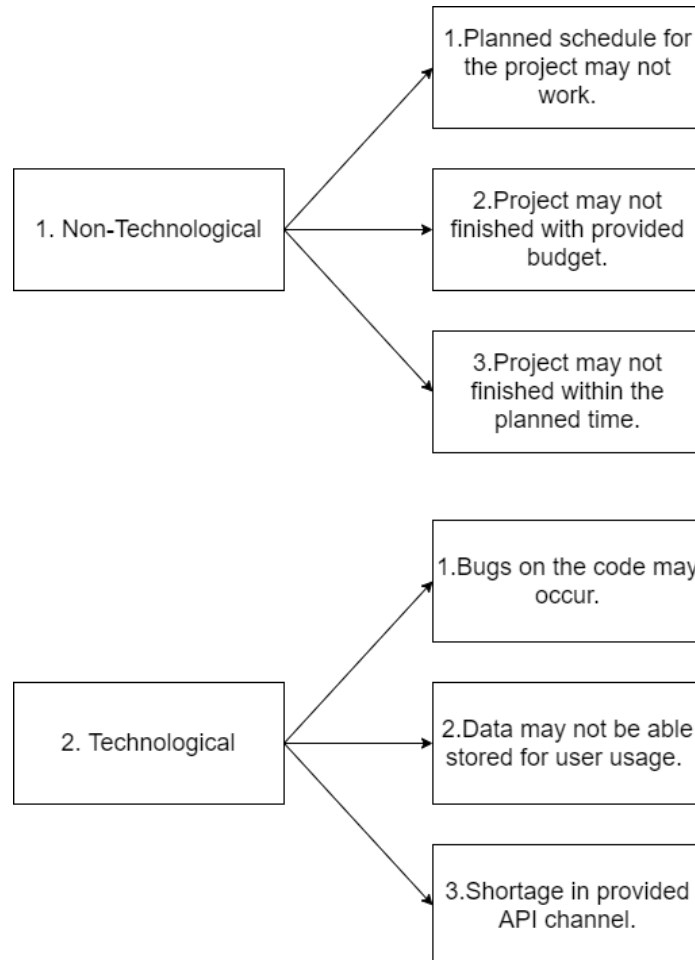
	Impact	Probability
1.1	Possible	Low
1.2	Unlikely	Low
1.3	Unlikely	Medium
2.1	Possible	Medium
2.2	Rare	Medium
2.3	Possible	Medium

3. Architectural Representation
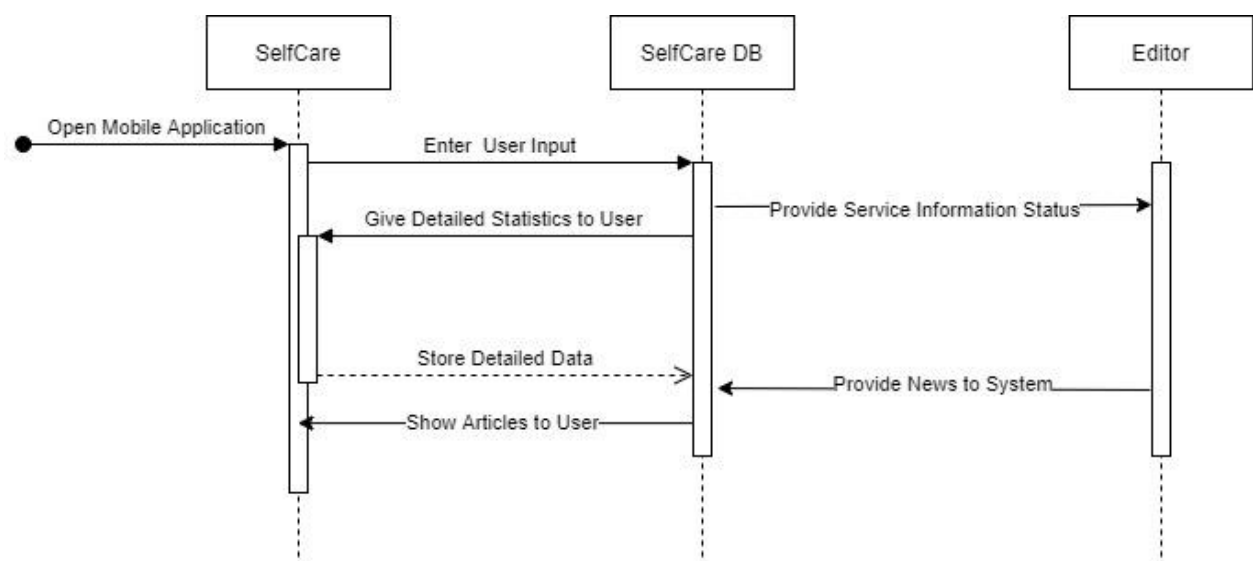
3.1Software Architecture Diagram
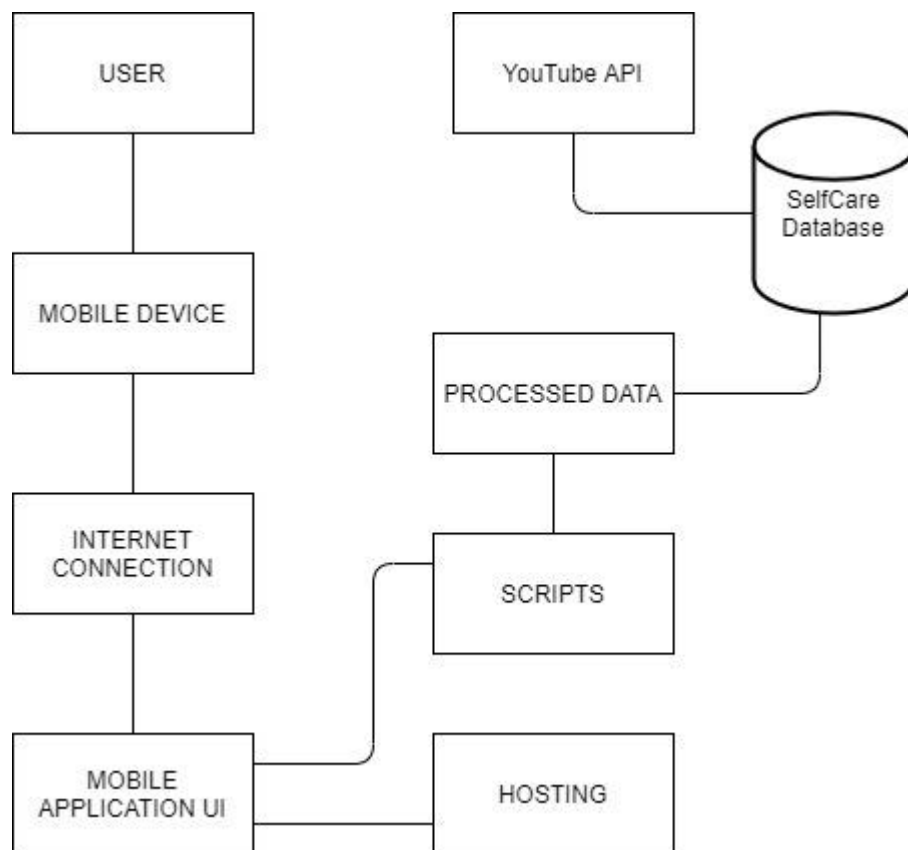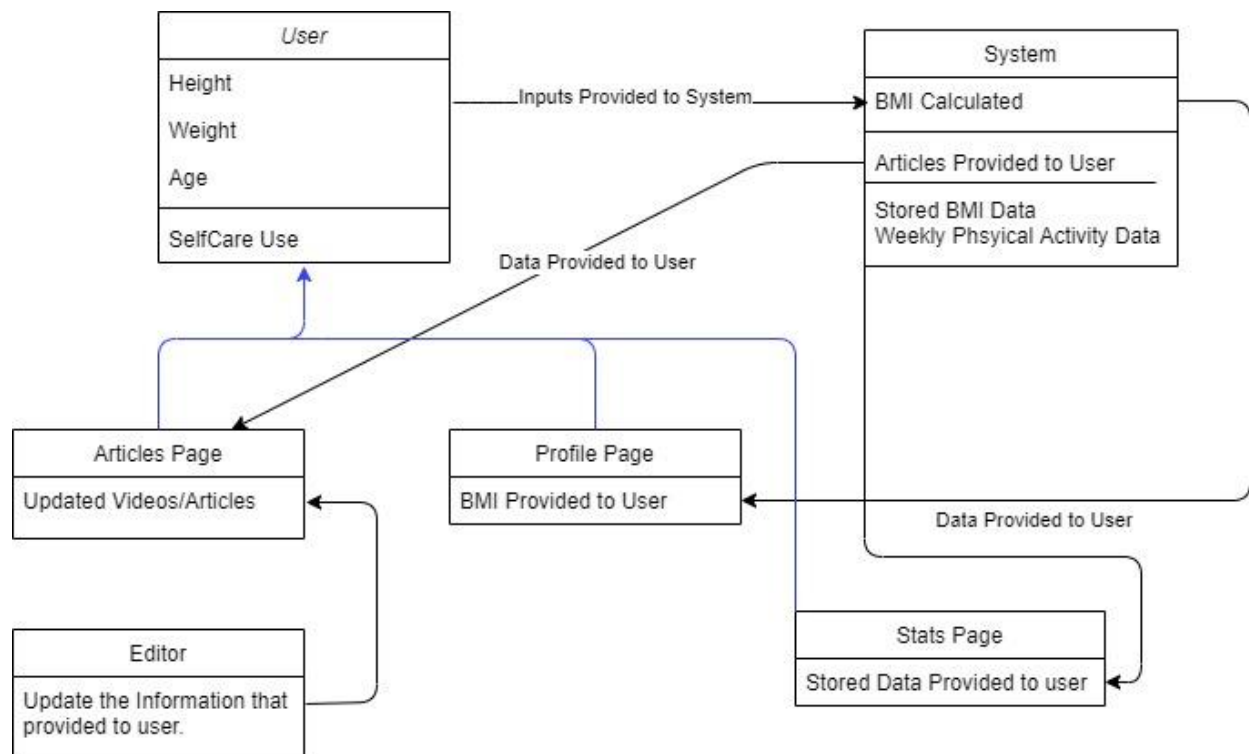
3.2 Use Case Diagram
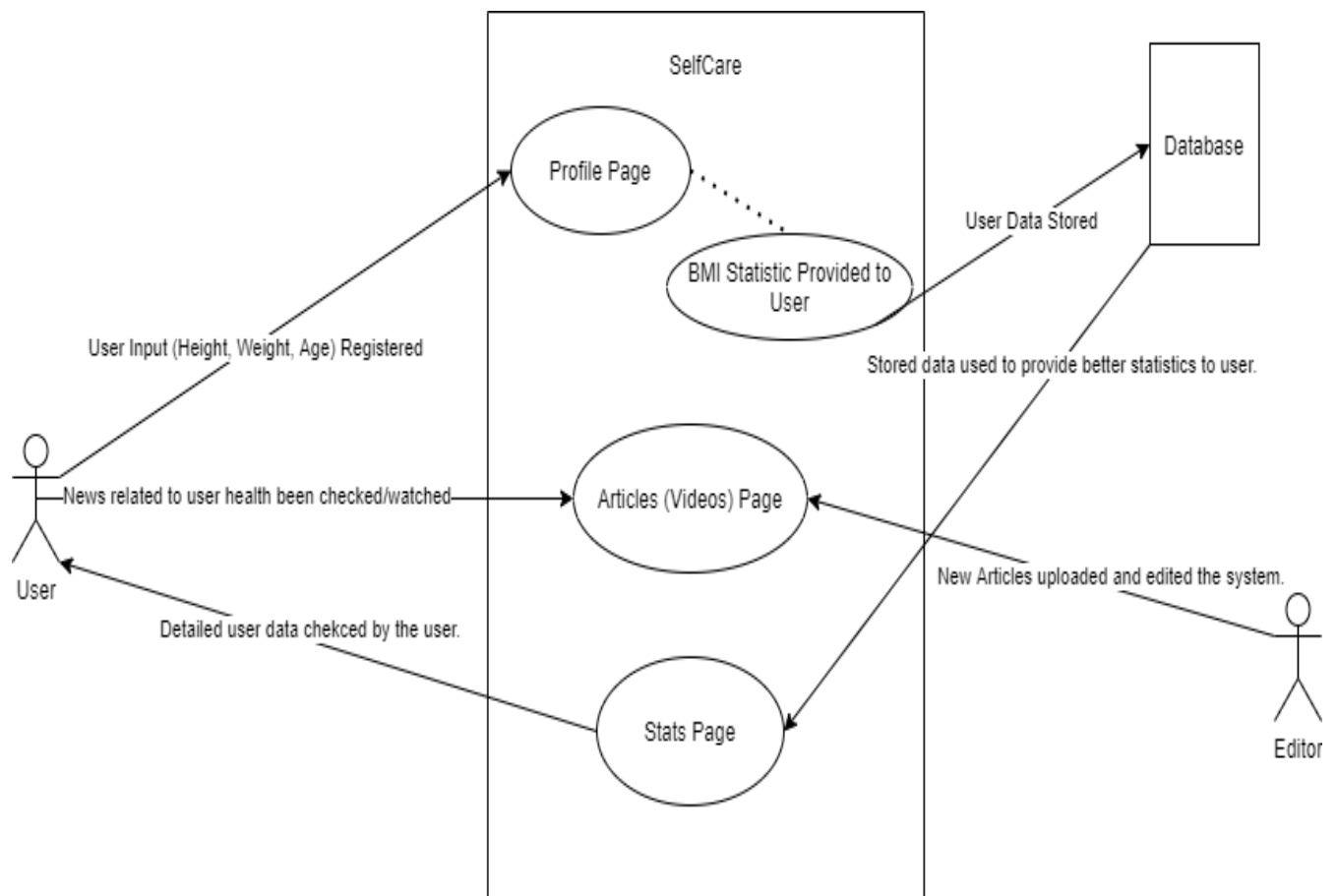
3.3 Sequence Diagram

3.4 Activity Diagram

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                              ▼
                      ┌──────────────┐
                      │ Open Application │
                      └──────────────┘
                              │
                              ▼
                              ◇
           ┌──────────────────┼──────────────────┐
           ▼                                      ▼
  ┌─────────────────┐                   ┌─────────────────┐
  │ Proile Page Opened │                │  Stas Page Opened  │
  └─────────────────┘                   └─────────────────┘
           │                        ┌──────────┴──────────┐
           ▼                        ▼                     ▼
  ┌─────────────────┐     ┌─────────────────┐   ┌─────────────────┐
  │ Height Input Provided │  │ Stored BMI Data  │   │ Weekly Pysical   │
  └─────────────────┘     │ Provided to User │   │ Activity Data Provided │
           │              └─────────────────┘   │    to User      │
           ▼                        │           └─────────────────┘
  ┌─────────────────┐               ▼                     │
  │ Weight Input Provided │  ┌─────────────────┐          ▼
  └─────────────────┘     │ User checked his/her │ ┌─────────────────┐
           │              │ previous data.   │   │ Provided Activity Data │
           ▼              └─────────────────┘   │ Tracked by the User │
  ┌─────────────────┐                           └─────────────────┘
  │ Age Input Provided │
  └─────────────────┘
           │
           ▼
  ┌─────────────────┐
  │ BMI Calculated  │
  └─────────────────┘
           │
           ▼
  ┌─────────────────┐
  │ BMI Provided to User │
  └─────────────────┘

        ┌─────────────────┐
        │ Articles Page Opened │
        └─────────────────┘
                 │
                 ▼
        ┌─────────────────┐
        │ Provided Videos  │
        │    Checked      │
        └─────────────────┘
                 │
                 ▼
        ┌─────────────────┐
        │ Provided Videos  │
        │    Watched      │
        └─────────────────┘
                 │
                 ▼
        ┌─────────────────┐
        │ Information Provided │
        │    to User      │
        └─────────────────┘

                              ●
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3.5 Class Diagram

4. Software Architecture Patterns/Layers

In our software architecture lab project, health care project, SelfCare we used Model View Controller pattern which determines the application provided by data model, presentation information and control information. The pattern that we have used requires each of the objects separated into different objects. As we know Model View Controller is architectural pattern but mainly not for the complete applications. Model View controller relies on the user interface interaction layer of application. This pattern is formed with three parts which are model, view and the controller. Model contains application data and have no arguments to deal the data while presenting it. View shows the data to user. View knows how to interact with models data and access it. Unfortunately, it cannot handle the data in order to being interrupted by the user. As we have studied the controller exists between two things, view and model. It simply listens the events those triggered by the view and executed the true action to

the event. This is being used in order to separate intern representatives from the information that going to be presented and accepted by the user. This leads efficient code reuse.

5. Conclusion / Summary

 In our project, we have tried to implement the architectural patterns that we have studied in our lectures into our project. While implementing these we faced multiple problems, it was not that easy as it was in theory. Coming to our project it leads users to calculate their BMI with the inputs that they have provide, while calculating the BMI it gives opportunity to store the BMI data for tracking the data afterwards. The video section makes user to understand and keep in touch with news about their routine life. Lastly the activity-stats page provides the BMI data as stated before and the weekly physical activity to user. Use of SelfCare will make healthier users.

6. References

Lecture Resources