# HACETTEPE UNIVERSITY

## Computer Engineering
## BBM384 Software Engineering Laboratory

# Sport Center Management System Software Design Description


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**BERK CAN ÖZEN**
**EGE UÇAK**
**EYÜPCAN BODUR**
**SERHAT SAĞLIK**


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# Book Loan System
# Software Design Description

## 1. RevisionHistory

| *Version* | *Date* | *Author* | *Change Description* |
| --- | --- | --- | --- |
| 1.0 | 19.04.2018 | Eyüpcan Bodur | ER Diagram added. |
| 1.1 | 23.04.2018 | Berk Can Özen | Sequence diagrams added. |
| 1.2 | 25.04.2018 | Ege Uçak<br>Bahadır Adak<br>Serhat Sağlık | Class diagram and traceability matrix is added. |

## 2. INTRODUCTION

### 2.1 Purpose andScope

This document includes the software details, detailed user interfaces and detailed data model of our project which we planned earlier. Also, in this document, there are class diagram and sequence diagrams of our system. We aim to have a better understanding of the system with this document.

### 2.2 DocumentOverview

This document contains information that will make the stage of our system more understandable by the stakeholders.

In the 3rdchapter of this document, we explained the restrictions and decisions of our application.

In the 4thchapter, there are class diagram, sequence diagrams of every use case, ER diagram of our system and interfaces of use cases.

In the 5thchapter of this document, there is requirement-class traceability matrix

### 2.3 SystemOverview

Our project is to create a sports center web application. In this application, the members are divided into trainer and student. In this application, user specific features are available.For example ,add course,get personal data,set progress etc...

Within the constraints we have specified, we aimed to enable users to quickly handle sports center automatically. We have defined operations according to the user types in our system which is designed based on MVC system architecture so that the library work will be more organized.

### 2.4 Definitions, Acronyms, andAbbreviations

**etc:**et cetera, it is used to avoid giving a complete list**MVC:**Model-View-Controller software architectural pattern.**SRS:**System-wide Requirement Specification document

### 2.5 References

The following documents have been referred to in this document:

1. Project Plan and Vision, Version No: 1.0 Version Date:
2. System-wide Requirements Specification,Version No: 2.0 Version
3. Architecture Notebook, Version No: 3.0 Version

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## 3. Design Constraints andDecisions

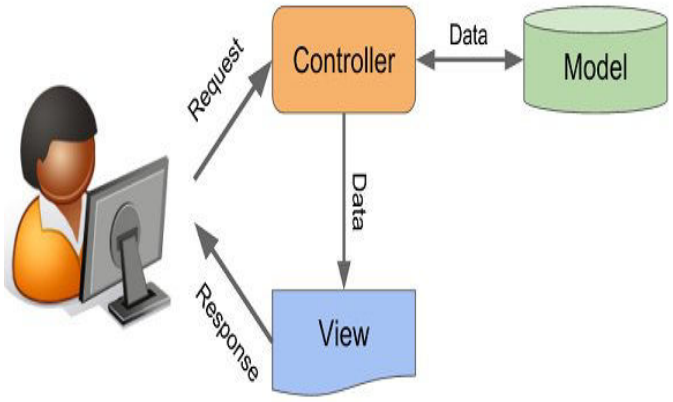
Our system will be designed to easily add and update features later on. The interfaces will be similar to each other, so that a simple and user-friendly interface will be designed so that the user can easily understand and use the system.

Our system will be made as a desktop application that can be used 7/24 in Windows operating system. We will use the MVC architectural pattern. Our system depends on the MySQL database. Therefore, the performance of our system will depend on the speed of queries retrieved from the database and on the algorithm of the code written. In case of wrong password entry etc.

## 4. DesignDetails

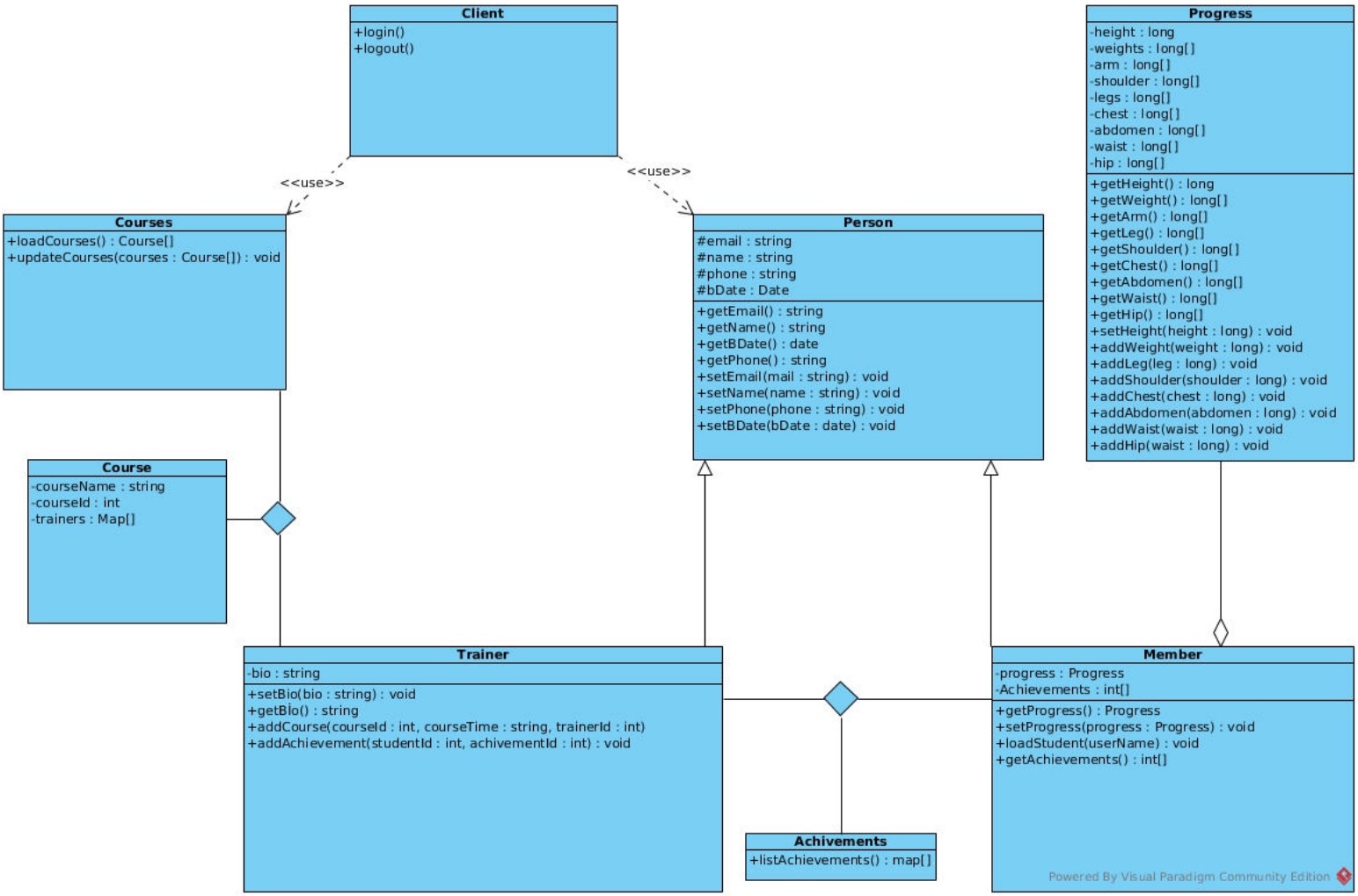
We use Model-View-Controller (MVC) pattern to describe our Sport Center System. MVC is a software architectural pattern for implementing user interfaces on computers. It divides a given application into three interconnected parts.

**Controller**: The controller interprets the mouse and keyboard inputs from the user, informing the model and/or the view to change as appropriate.
**View:**The view manages the display of information.
**Model:**The model manages the behavior and data of the application domain, responds to requests for information about its state (usually from the view), and responds to instructions to change state (usually from the controller).



### 4.1 SoftwareComponents

Class diagram of our system is as following:



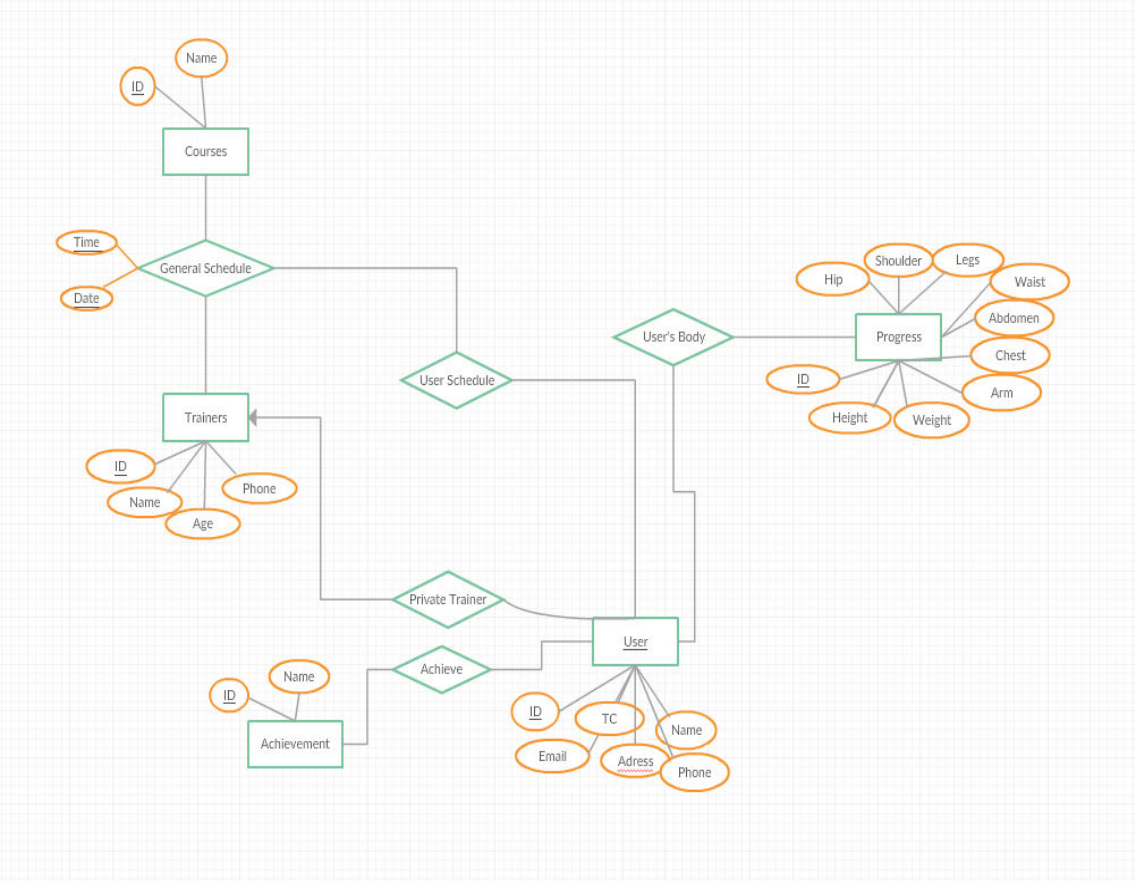

### 4.2 SoftwareBehavior

The sequence diagrams of the use cases we have described in the System-wide Requirement Specification(SRS) document are found in Appendix A.

### 4.3 Data Model (E-RDiagram)

Our database tables are as following.

E/R diagram of our system is not changed. It is as following.




### 4.4 User InterfaceDesign

The interfaces we have specified in the SRS document are developed and detailed in Appendix B.

## 5. RequirementsTraceability

*Note: Numbers in the table is refers to requirements. Requirements number table is in the below.*

| Requirement/Class | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Achievements.java | | | | X | | | | | | X | | |
| Client.java | X | X | | | | | | | | | | |
| Course.java | | | | | | | X | X | X | | | |
| Courses.java | | | | | | | X | X | X | | | |
| DatabaseBean.java | X | X | X | X | X | X | X | X | X | X | X | X |
| LoginBean.java | X | | | | | | | | | | | |
| Member.java | | | | | X | X | | | | | | |
| Memberbean.java | | | | | X | X | | | | | | |
| Person.java | X | X | | | | | | | | | | |
| Progress.java | | | | X | | | | | | X | | |
| Trainer.java | | | | | | | X | | X | X | X | X |
| TrainerBean.java | | | | | | | X | | X | X | X | X |

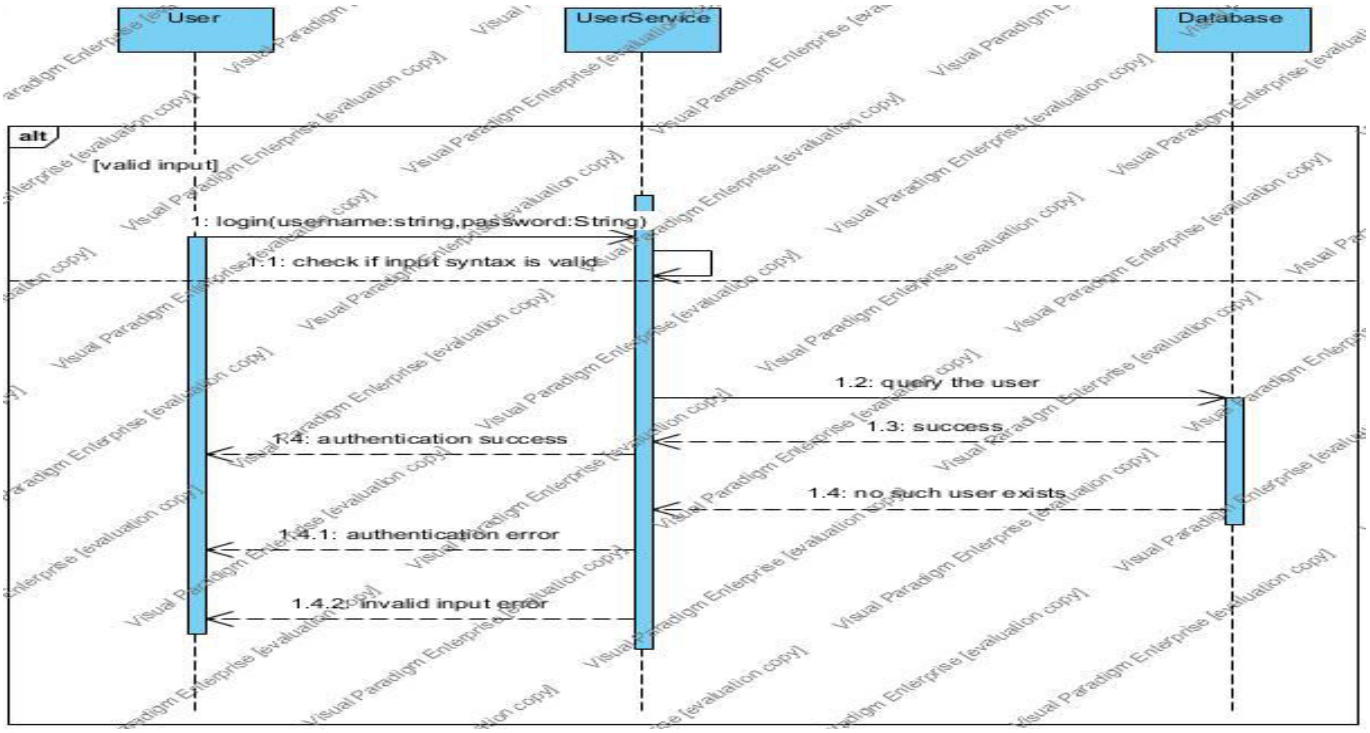
| No | Requirement |
| --- | --- |
| 1 | Login |
| 2 | Logout |
| 3 | Load Student |
| 4 | Get Progress |
| 5 | Set Personal Data |
| 6 | Get Personal Data |
| 7 | Add Course |
| 8 | Load Course |
| 9 | Update Course |
| 10 | Set Progress |
| 11 | Set Biography |
| 12 | Get Biography |

## 6. Annexes

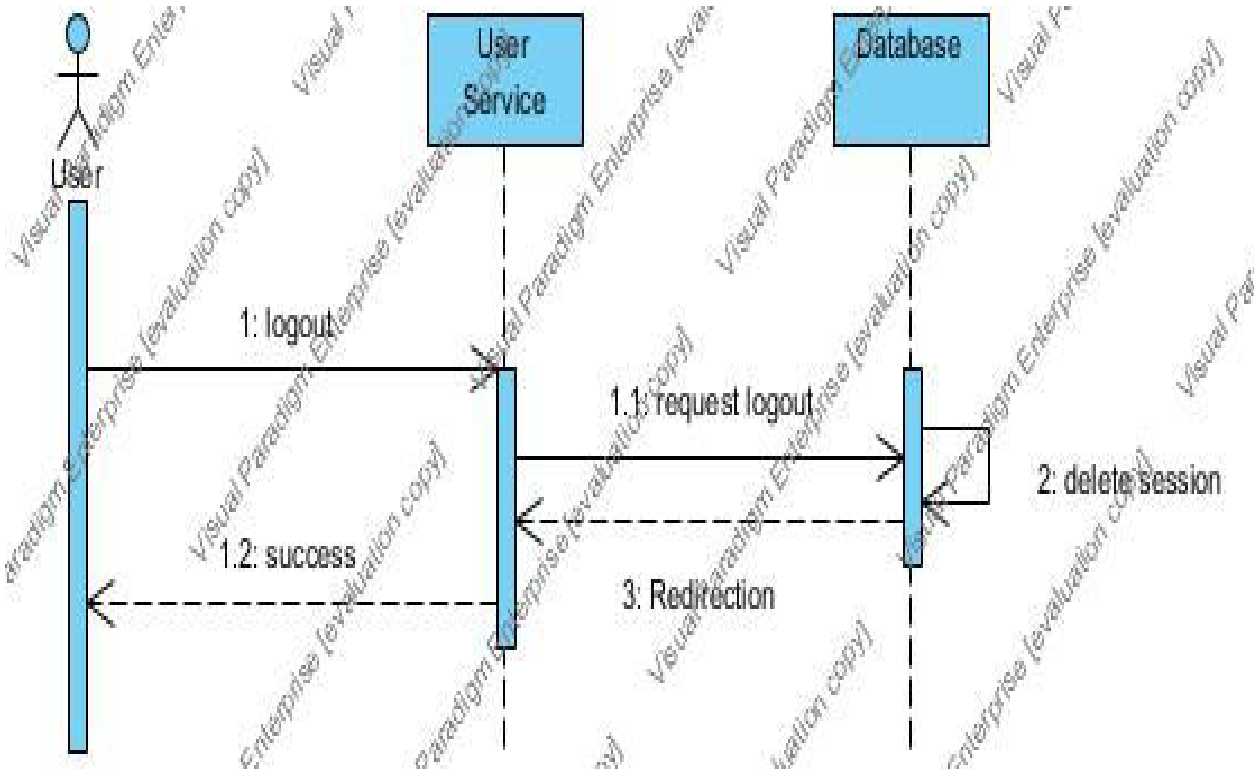
- AppendixA
- AppendixB

## AppendixA:

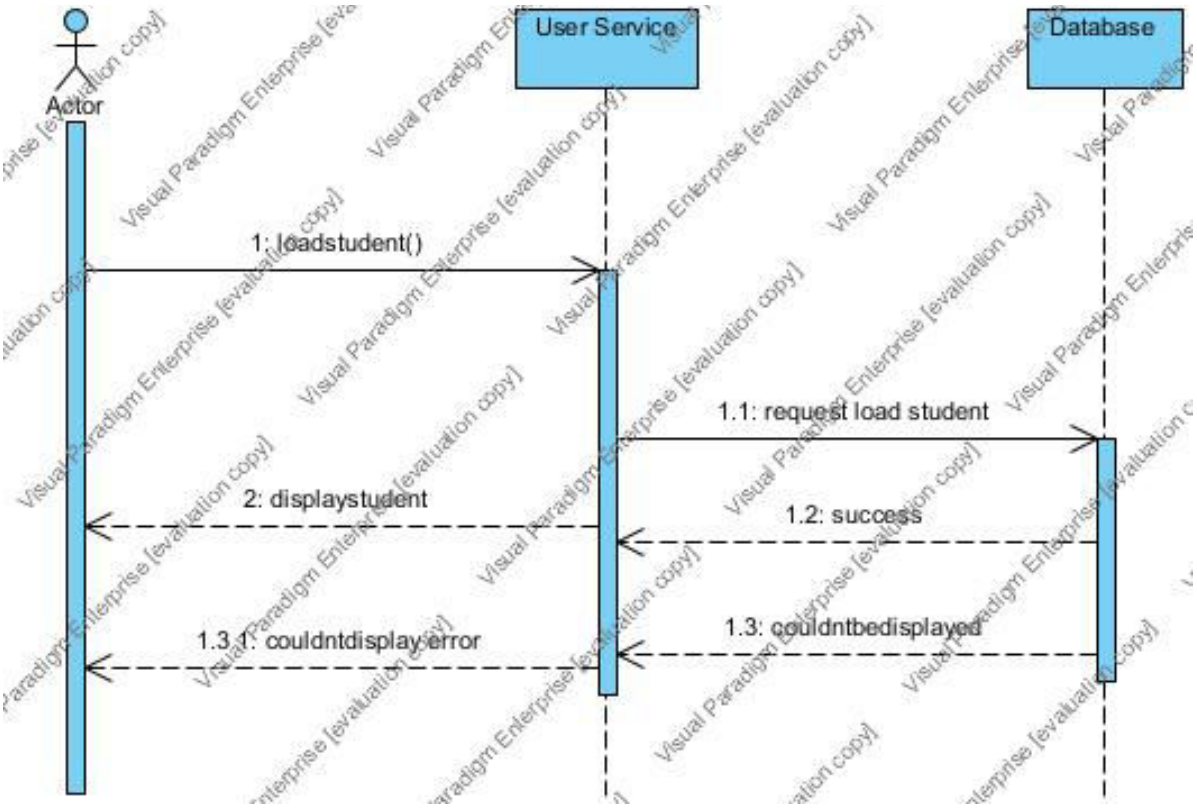
- **Login:**



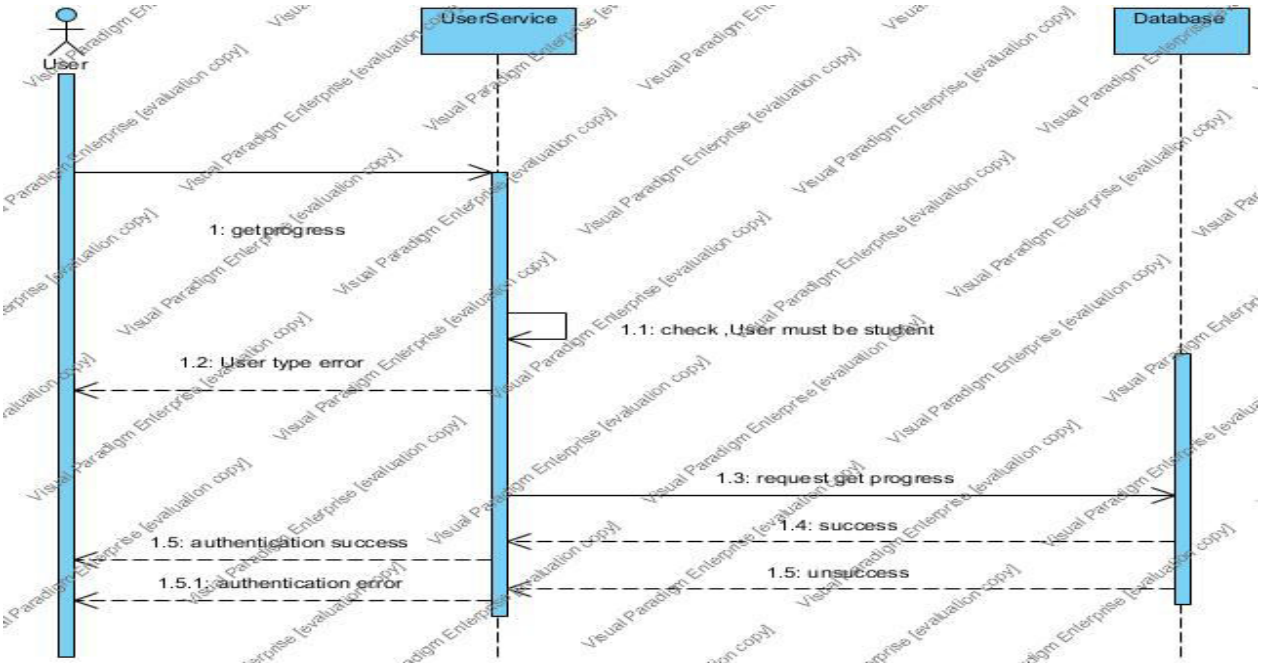
**Logout:**



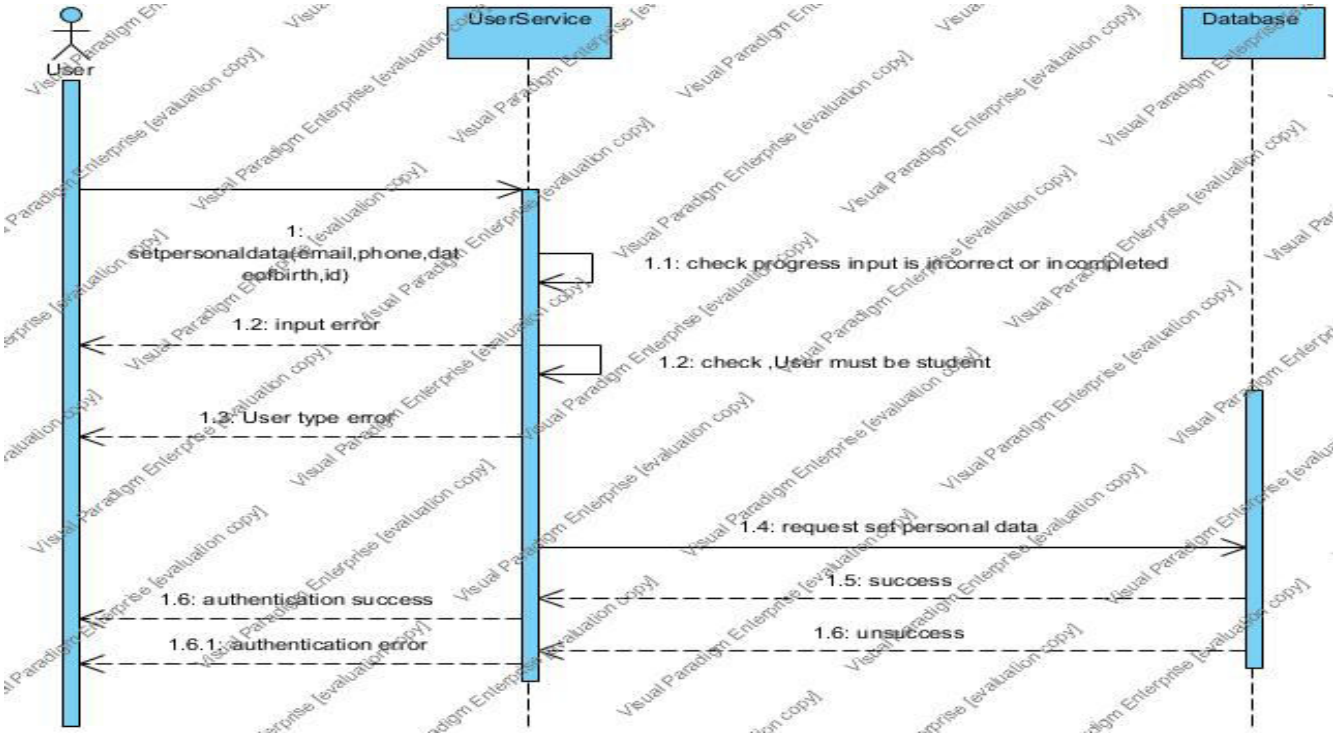

**Load Student:**



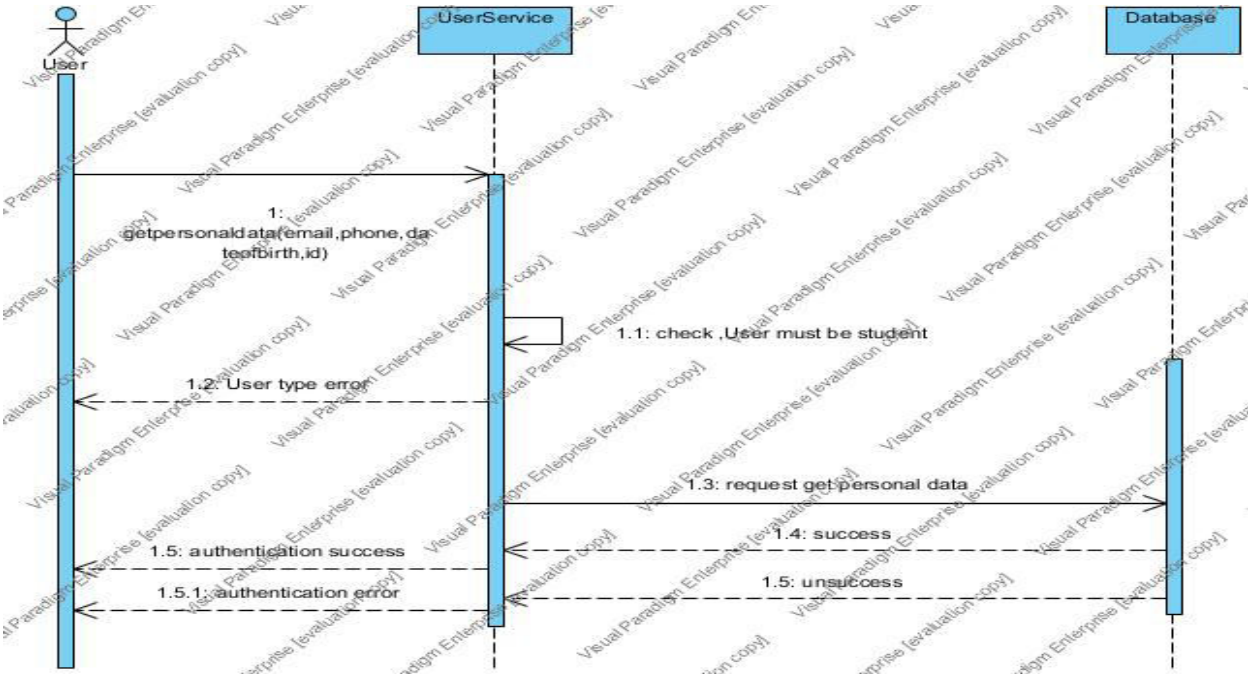
**Get Progress:**



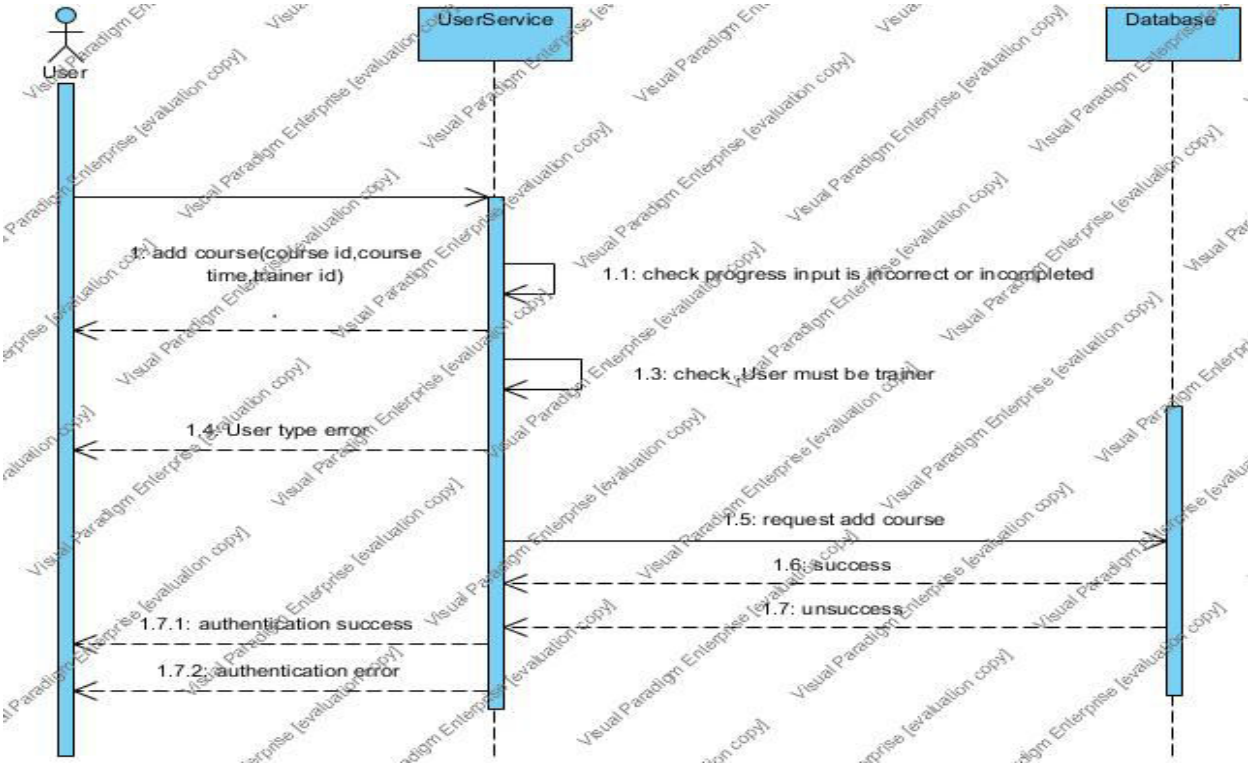

**Set Personal Data:**



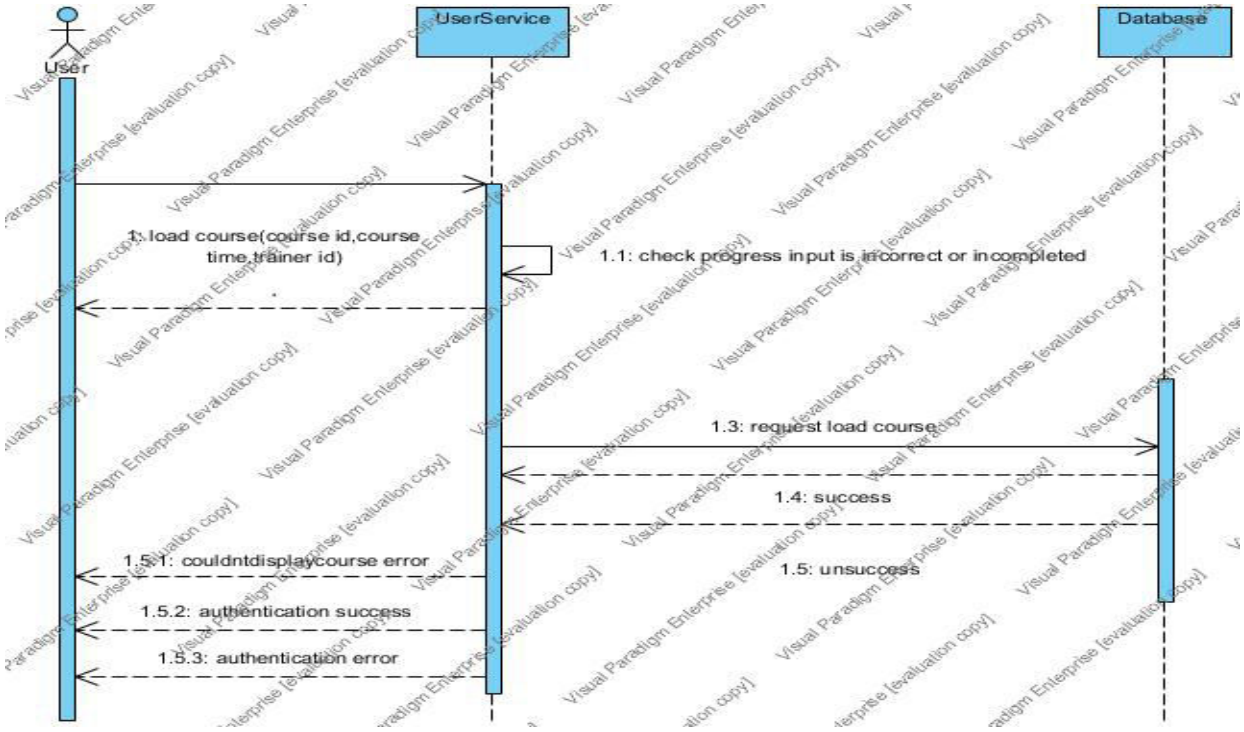
**Get Personal Data:**



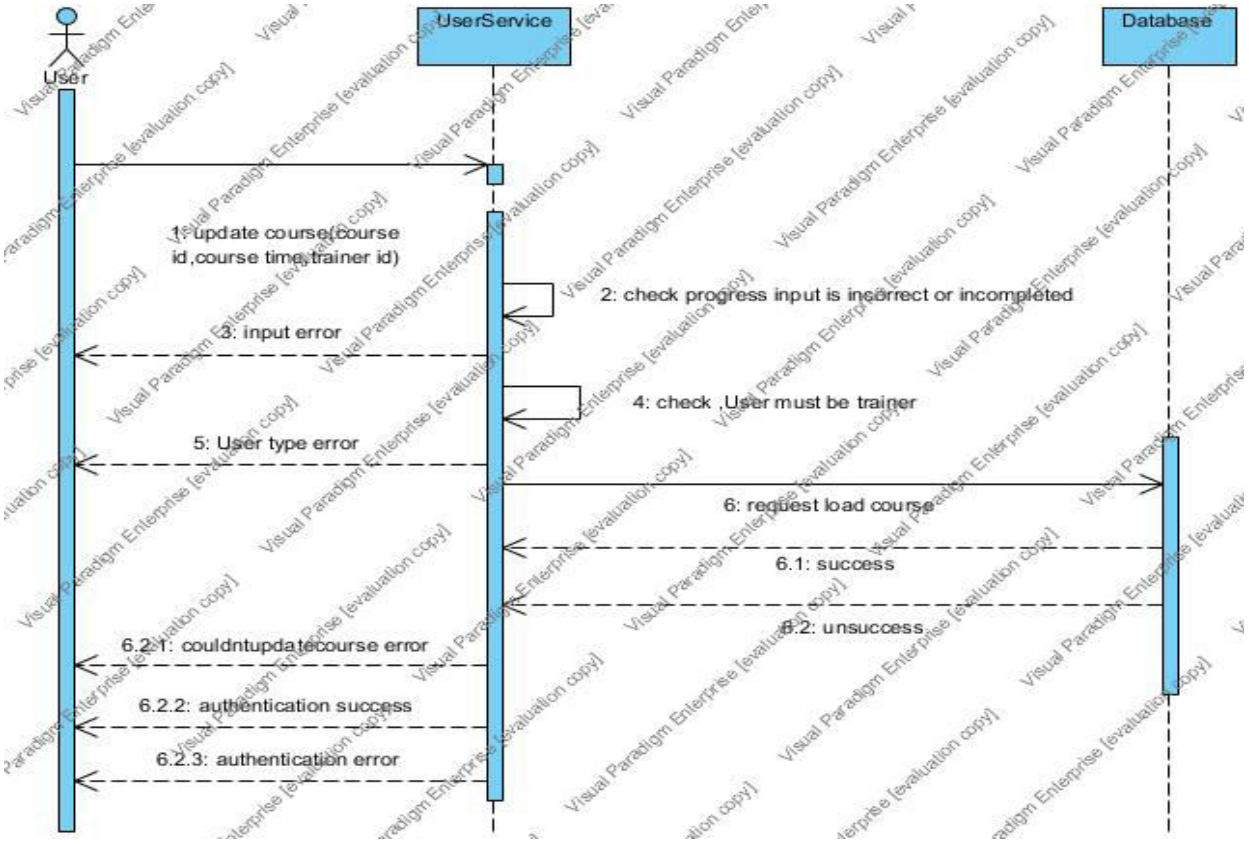

**Add Course**



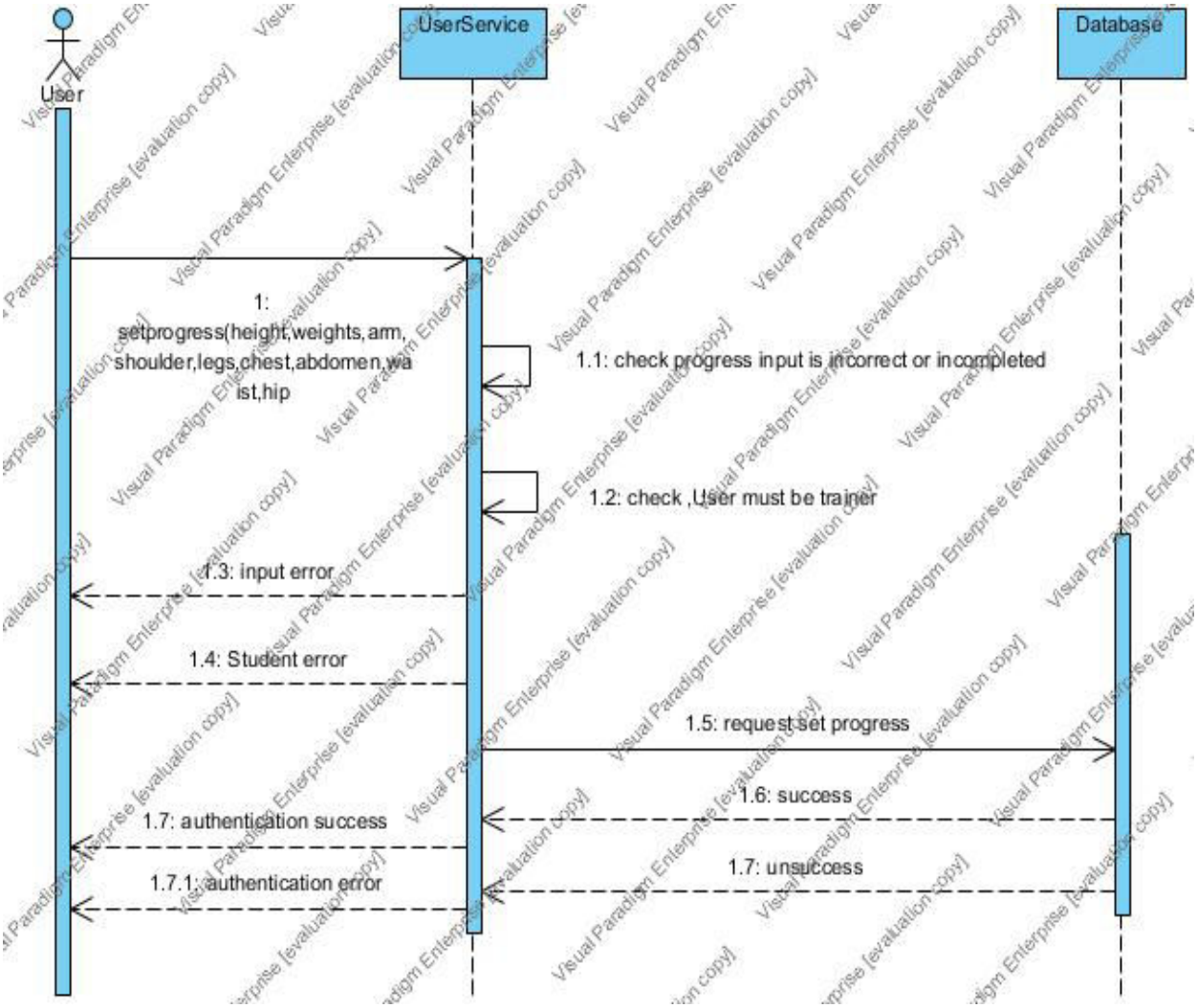
**Load Course:**



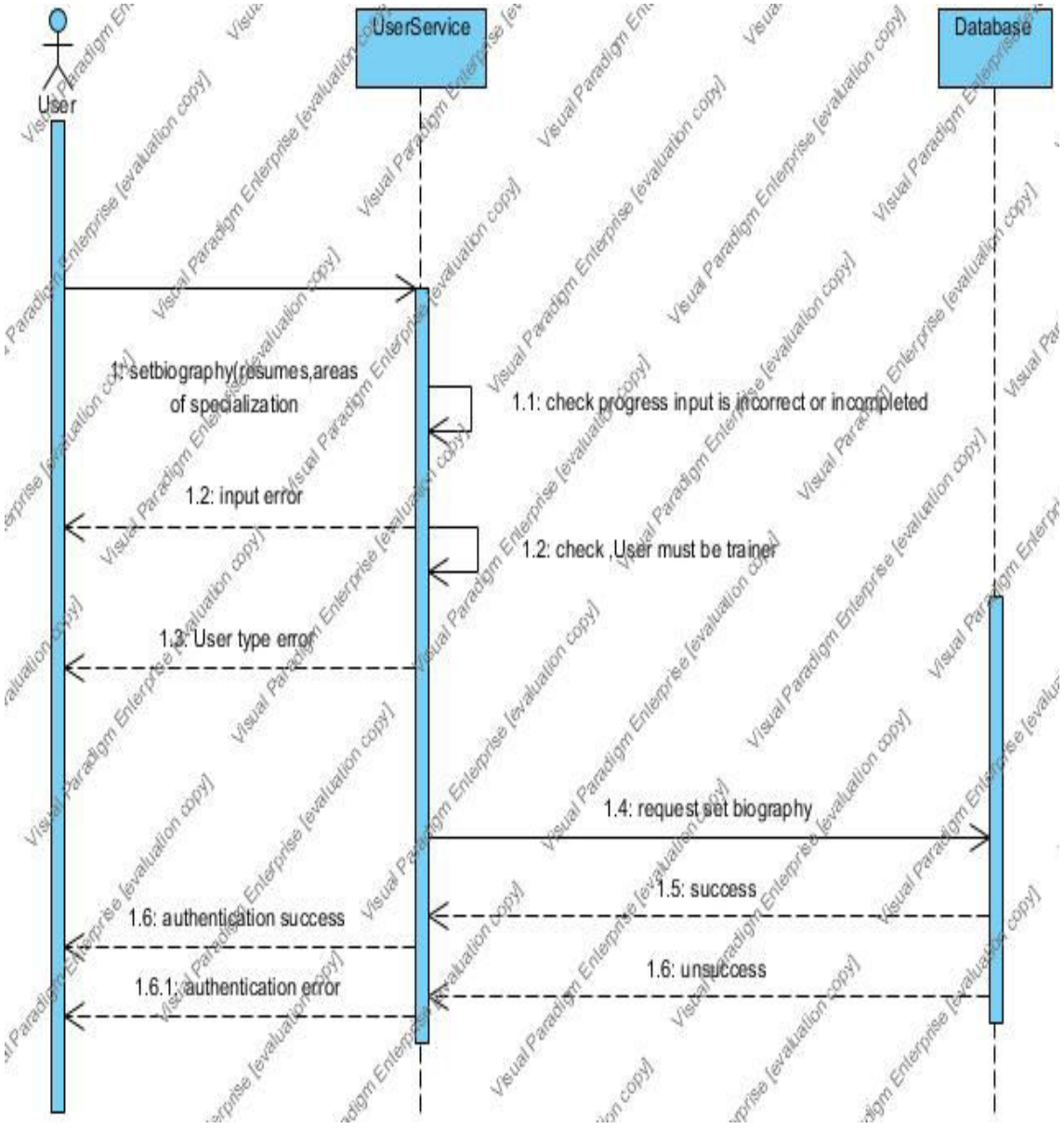

**Update Course:**



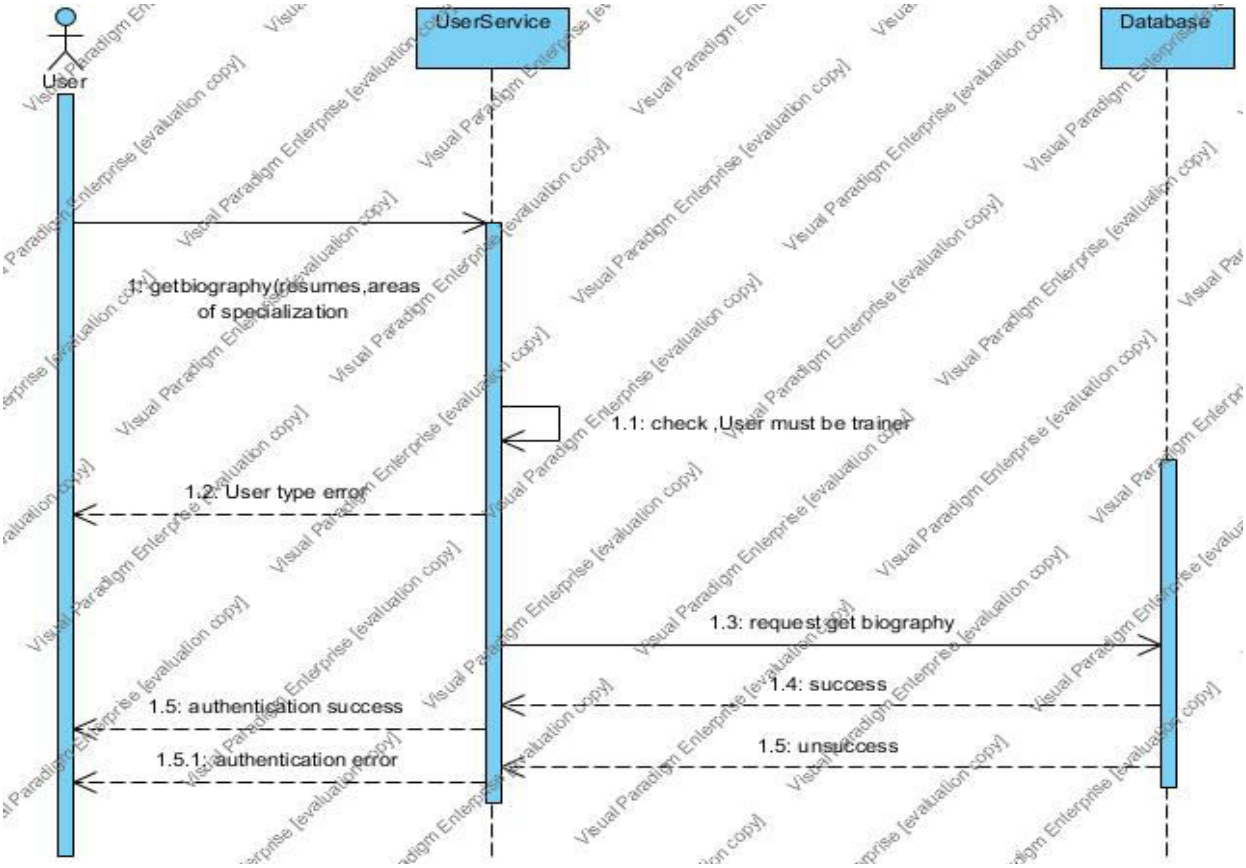
**Set Progress:**



**Set Biography:**

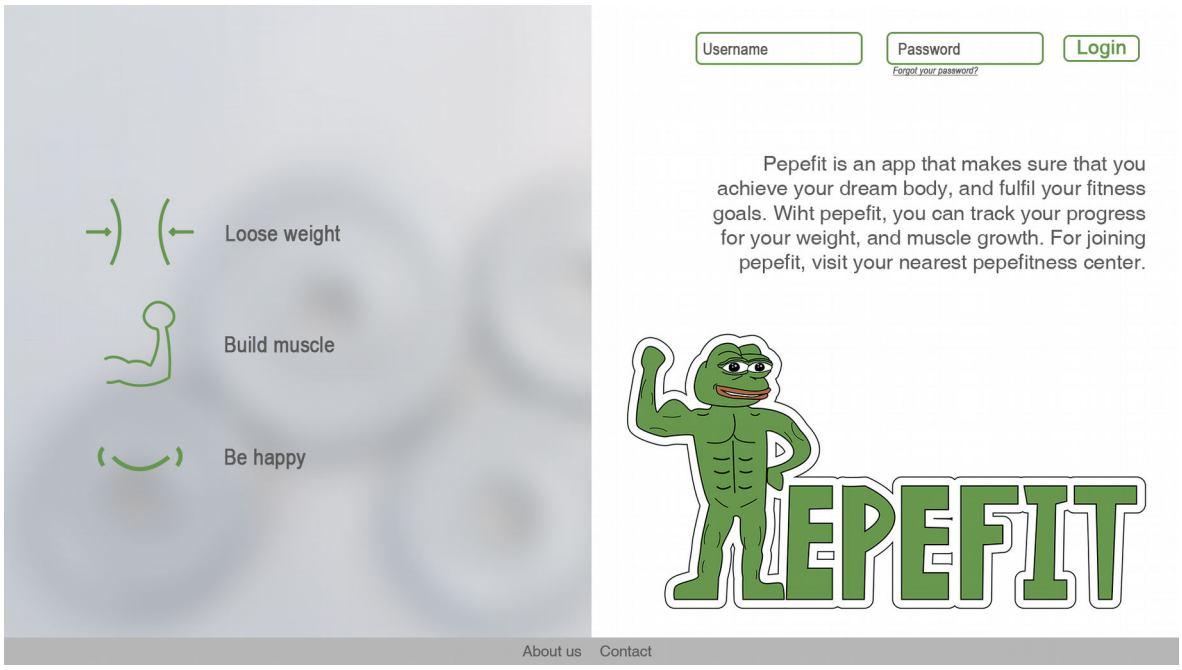


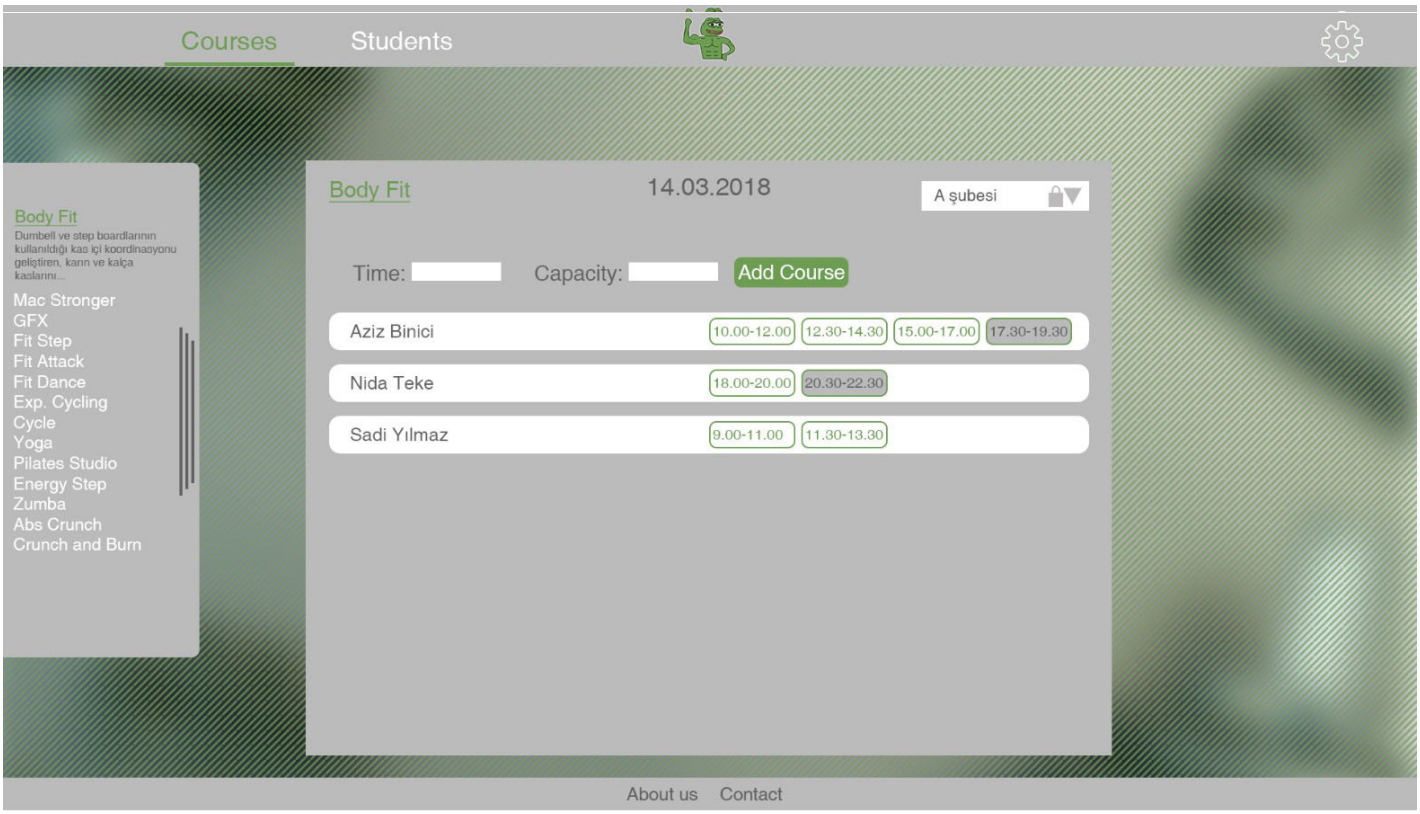
**Get Biography:**



## Appendix B:

GUİ VİSUALS:

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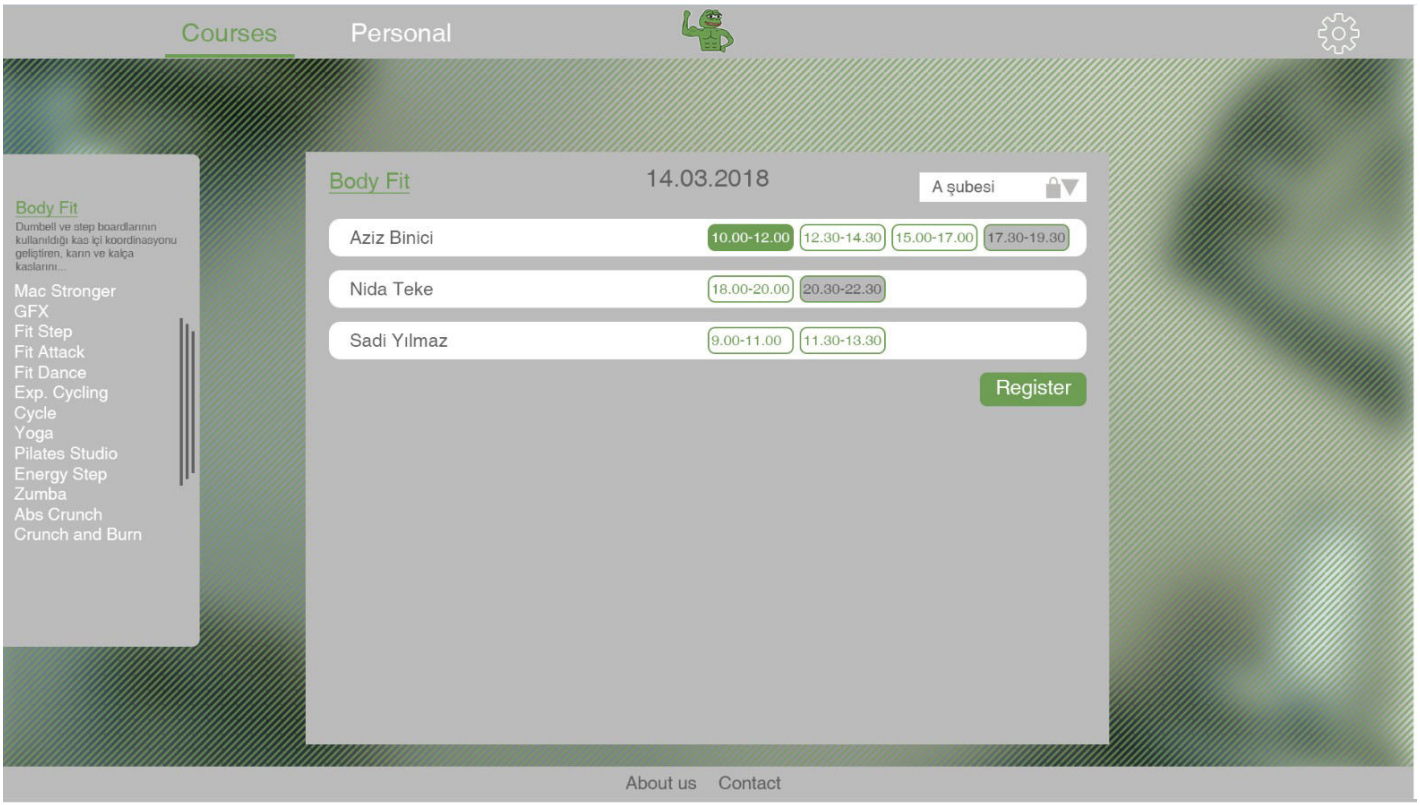
Students
Body Fit
Dumbell ve step boardlarının kullanıldığı kas içi koordinasyonu geliştiren, karın ve kalça kaslarını...
Mac Stronger
GFX
Fit Step
Fit Attack
Fit Dance
Exp. Cycling
Cycle
Yoga
Pilates Studio
Energy Step
Zumba
Abs Crunch
Crunch and Burn
Body Fit
14.03.2018
A şubesi
Time:
Capacity:
Add Course
Aziz Binici
10.00-12.00
12.30-14.30
15.00-17.00
17.30-19.30
Nida Teke
18.00-20.00
20.30-22.30
Sadi Yılmaz
9.00-11.00
11.30-13.30
About us
Contact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Body Fit
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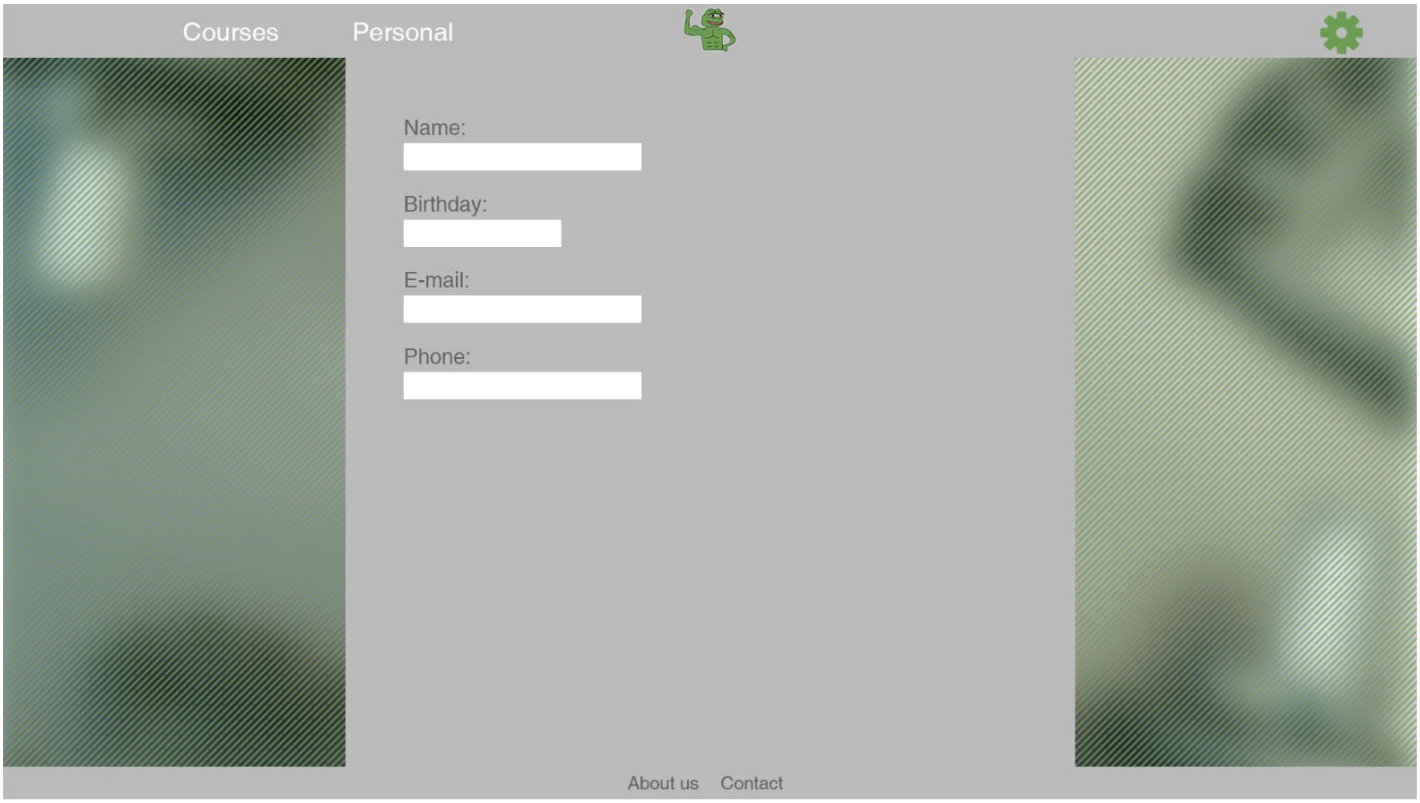
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Personal
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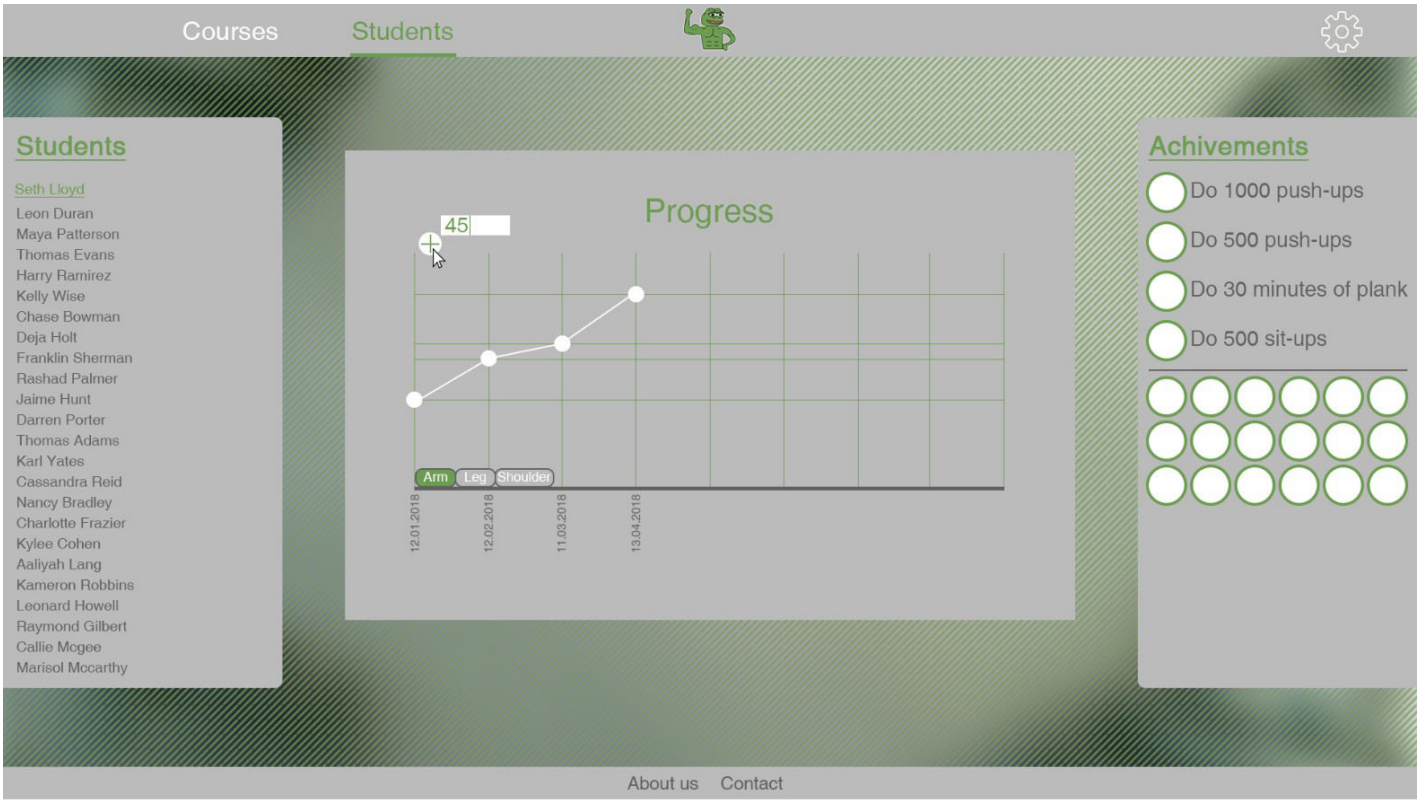
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Students
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Leon Duran
Maya Patterson
Thomas Evans
Harry Ramirez
Kelly Wise
Chase Bowman
Deja Holt
Franklin Sherman
Rashad Palmer
Jaime Hunt
Darren Porter
Thomas Adams
Karl Yates
Cassandra Reid
Nancy Bradley
Charlotte Frazier
Kylee Cohen
Aaliyah Lang
Kameron Robbins
Leonard Howell
Raymond Gilbert
Callie Mcgee
Marisol Mccarthy
Progress
45
Arm
Leg
Shoulder
12.01.2018
12.02.2018
11.03.2018
13.04.2018
Achivements
Do 1000 push-ups
Do 500 push-ups
Do 30 minutes of plank
Do 500 sit-ups
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