İZMİR UNIVERSITY OF ECONOMICS

Studdy Buddy
07

SE 305 – Software Specification and Design
Term Project Design Document

Sanem Yaman
Hilal Rana Anarsay
Orkun Hacılar
Neslihan Özgün
Berk Muslu

January 22, 2021

1. Introduction

Our project is based on education of students. In this project, students can ask their questions and get support from others. Users who answer the questions can earn points and use these points to edit their avatars or to win prizes. We want students to have fun by asking and solving questions. Also students can help each other. This is a platform where they get to know each other and talk to each other as friends. In addition, we have a few systems where the winners of the week and the winners of the month will be given more points. In this way, we are encouraged to spend time on education.

2. Problem Definition

With the 'new normal' many things like education have become digital. Students can not reach their teachers and ask questions easily.

In StudyBuddy, students can ask their questions. In addition, people can help students find a solution by sharing your knowledge and having fun with active students.
In this application, students can reach lots of students and instructors. Our goal is to reach faster solutions without spending additional time and going to the classroom or an educational institution in this period of Coronavirus. Our project will meet the educational needs of students through an online platform.

3. Proposed System Design

3.1. Requirements

3.1.1 Functional Requirements:

1. The user should be able to register their name, surname, e-mail, phone number. It is important that the user gives their personal characteristics as single words.

2. Users can chat with other users.

3. The user should be able to upload their questions by taking a photo or writing clearly that is acceptable by the app.

4. The photos to be uploaded should be checked by a photo verification system.

5. Accounts will be verified with an e-mail or phone number.

6. The application is free and the user has the right to ask five questions per day.

7. If users exceed the daily asking limit, they can earn points by answering other students' questions. Users can update their avatars with these points and they can earn extra question limits.

8. The users can upgrade their avatars with in-app purchases.

3.1.2 Non-Functional Requirements:

1. For the system's security, user passwords shall contain capital and lowercase letters, numbers and special characters with a condition that each password contain at least 10 characters.

2. The system should start in at most 5 seconds.

3. The system's database will support up to 2 million users.

4. The question photos to be uploaded should be at most 5 MB.

5. The system must respond within 500 milliseconds.
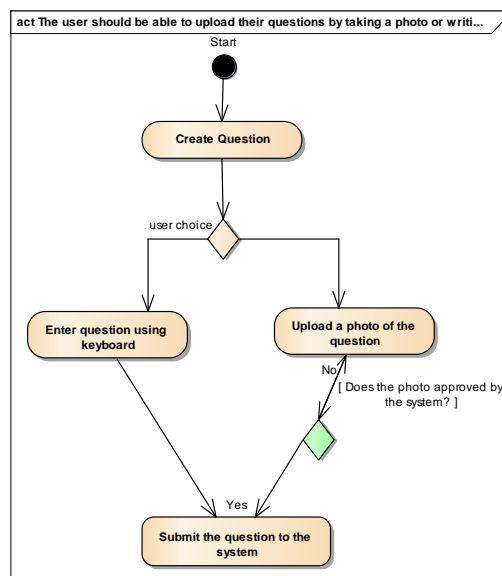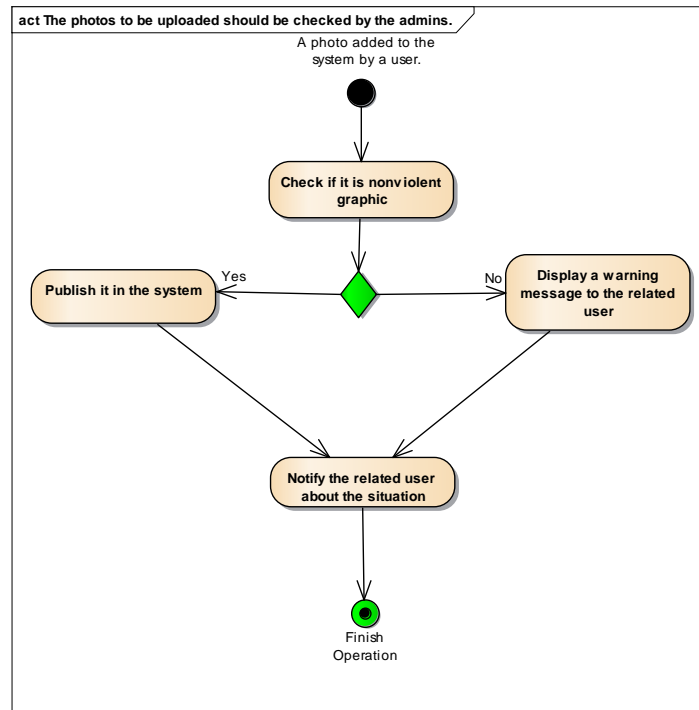
3.2. Activity Diagrams

3.2.1 Activity Diagram 1: The user should be able to register their name, surname, e-mail, phone number. It is important that the user gives their personal characteristics as single words.
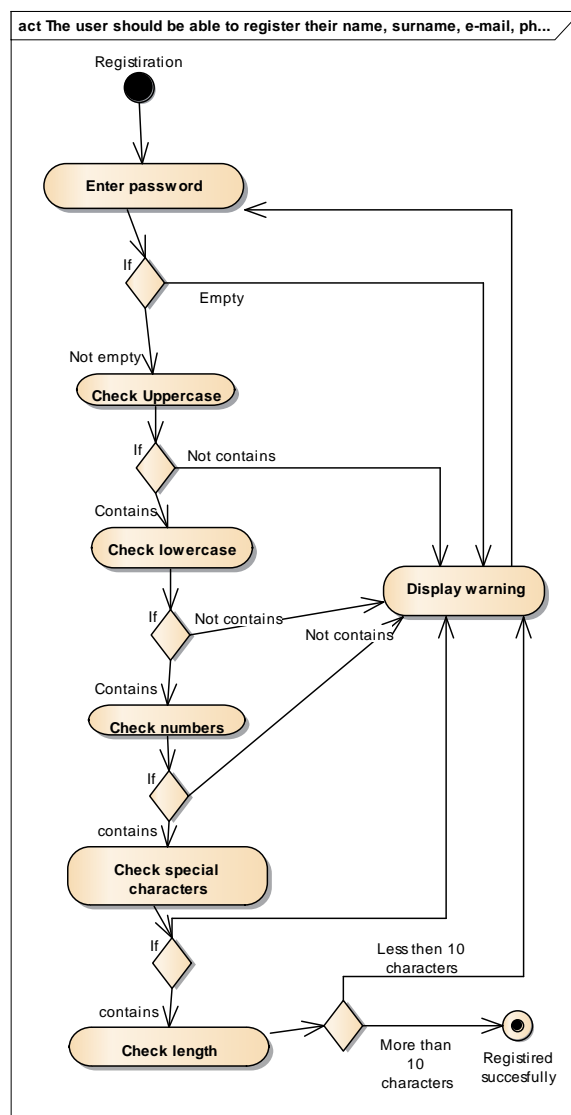
### 3.2.2. Activity Diagram 2: Users can chat with other users.
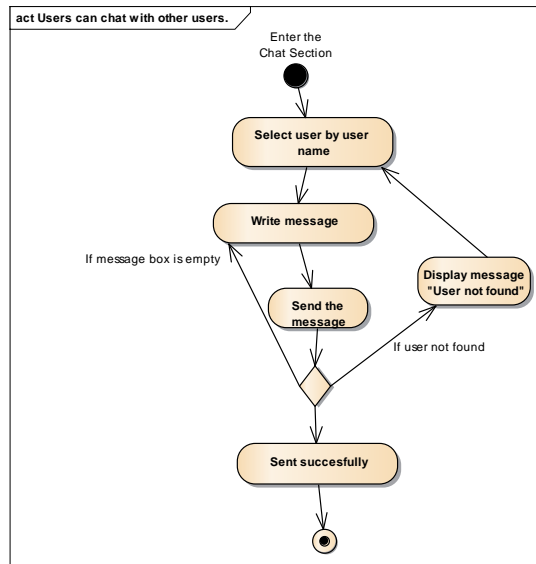
3.2.3. Activity Diagram 3: The user should be able to upload their questions by taking a photo or writing clearly that is acceptable by the app.

İZMİR UNIVERSITY OF ECONOMICS

3.2.4. Activity Diagram 4: The photos to be uploaded should be checked by a photo verification system.

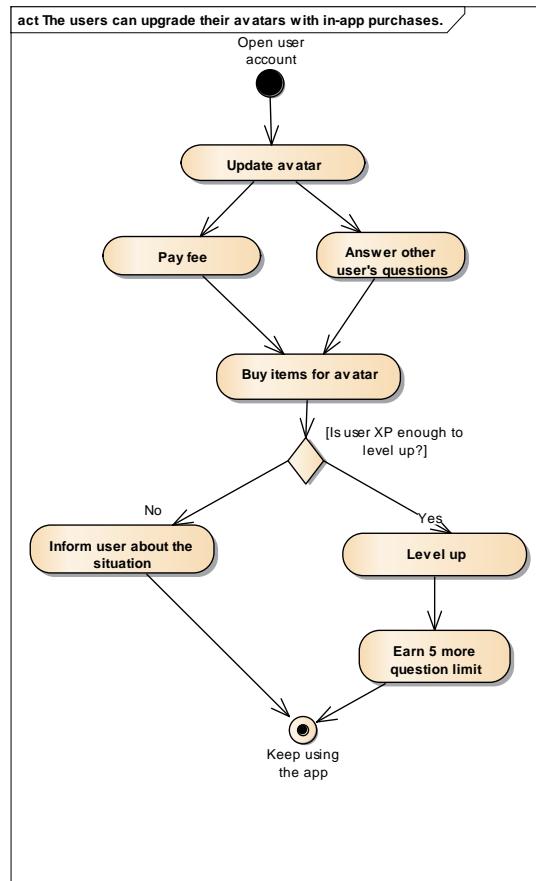3.2.5. Activity Diagram 5: Accounts will be verified with an e-mail or phone number.

IZMIR UNIVERSITY OF ECONOMICS
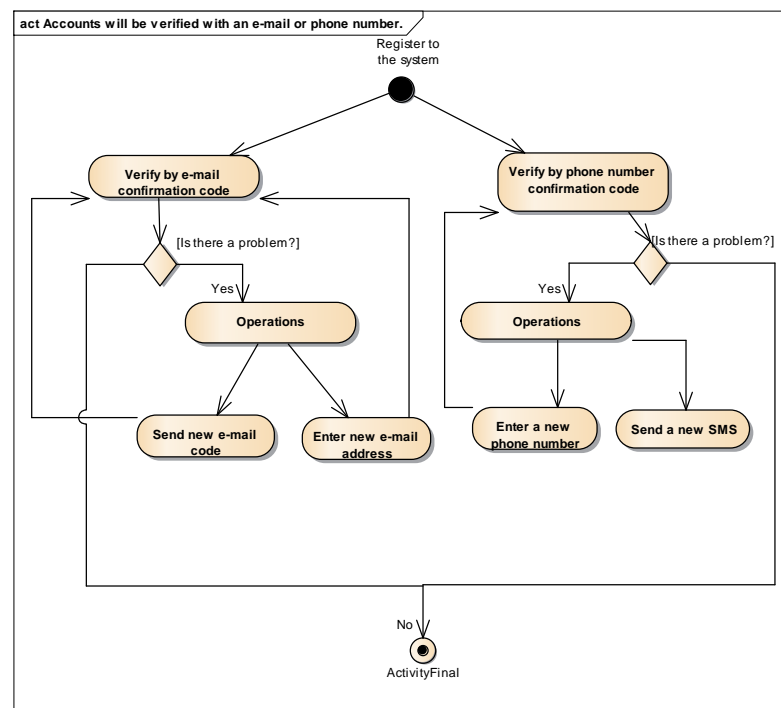
3.2.6. Activity Diagram 6: The application is free and the user has the right to ask five questions per day.
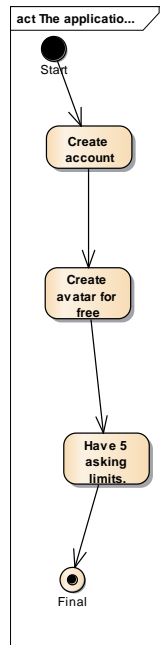
3.2.7. Activity Diagram 7: If users exceed the daily asking limit, they can earn points by answering other students' questions. Users can update their avatars with these points and they can earn extra question limits.
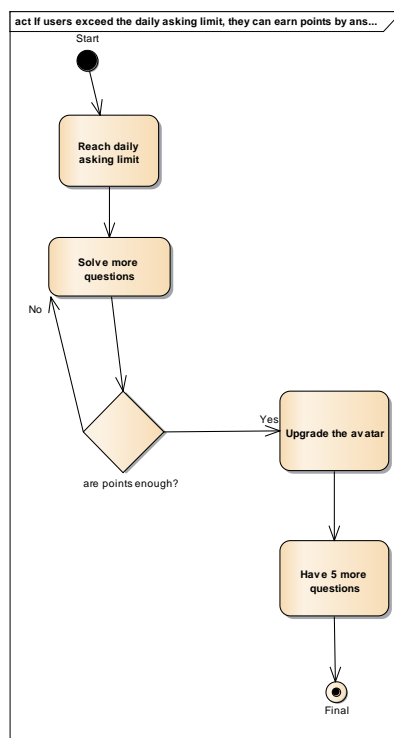
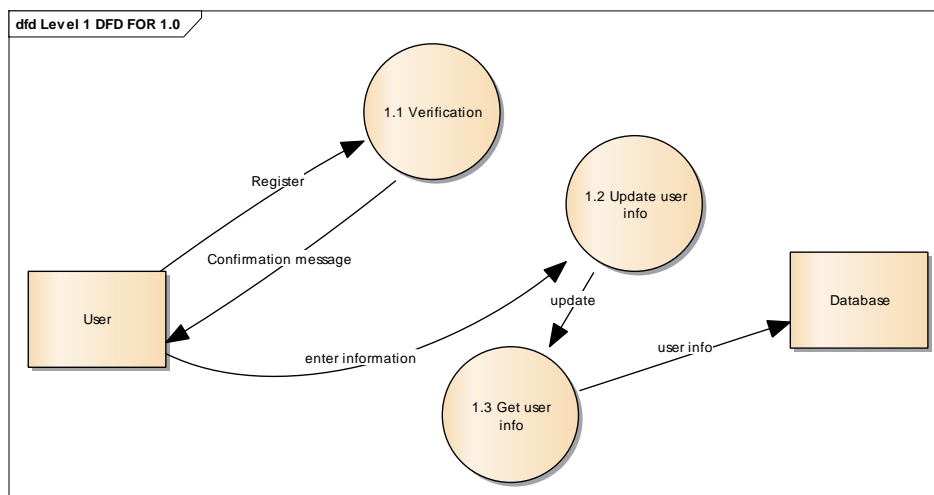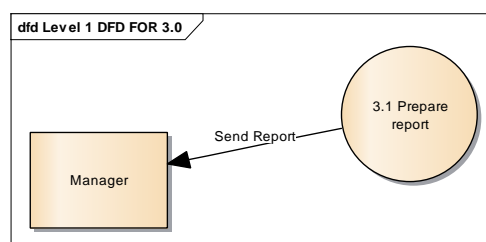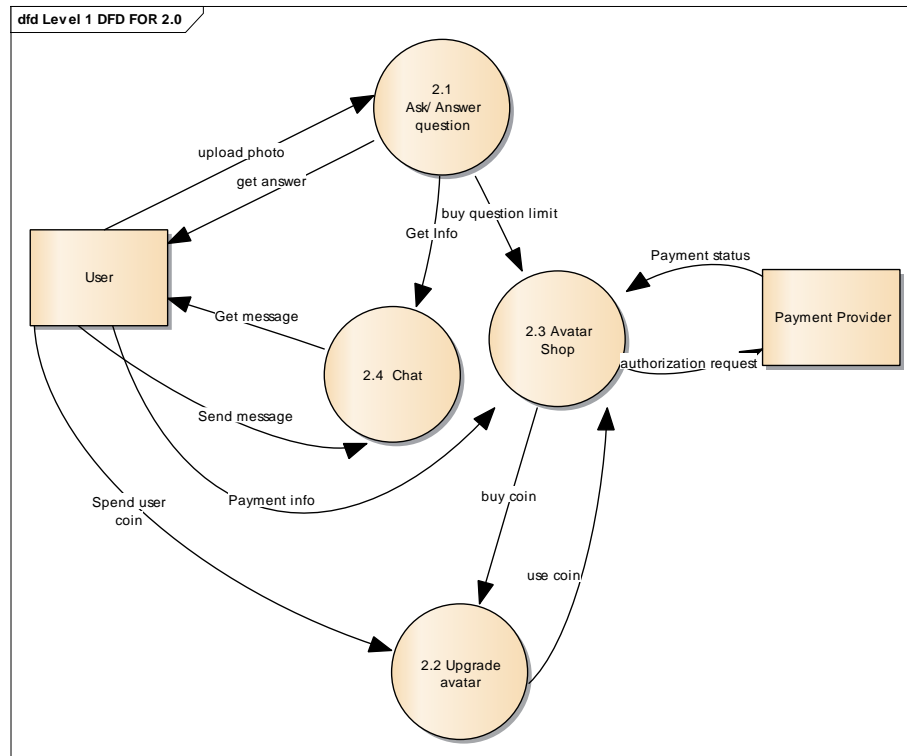3.2.8. Activity Diagram 8: The users can upgrade their avatars with in-app purchases.

act The users can upgrade their avatars with in-app purchases.

İZMİR UNIVERSITY OF ECONOMICS

3.3. Context Model

dfd Context Diagram

Payment Provider

Payment status
Authorization Request

Studdy Buddy

User information
Avatar update
Upload question
Give answer to question
Pay fee
Send message
Payment confirmation
Send warnings
Send chat answer
Show question answers
Show other users

User

Reports

Manager

İZMİR UNIVERSITY OF ECONOMICS

3.4. Data Flow Diagrams

Level 0 DFD:

Level 1 DFD's:

İZMİR UNIVERSITY OF ECONOMICS

dfd Level 1 DFD FOR 2.0

dfd Level 1 DFD FOR 3.0
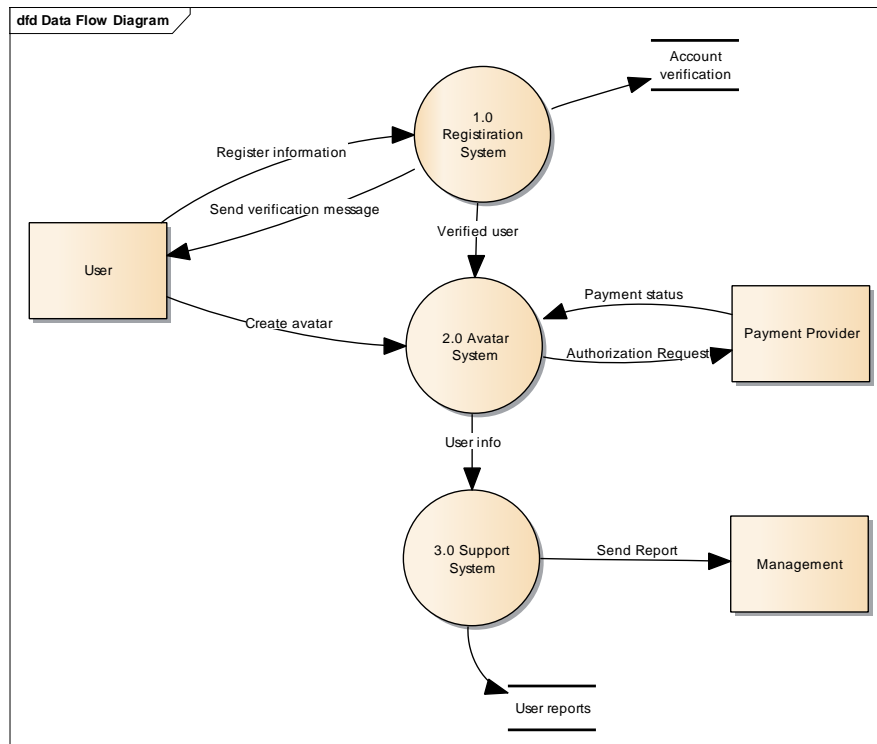
İZMİR UNIVERSITY OF ECONOMICS

3.5. Use Cases
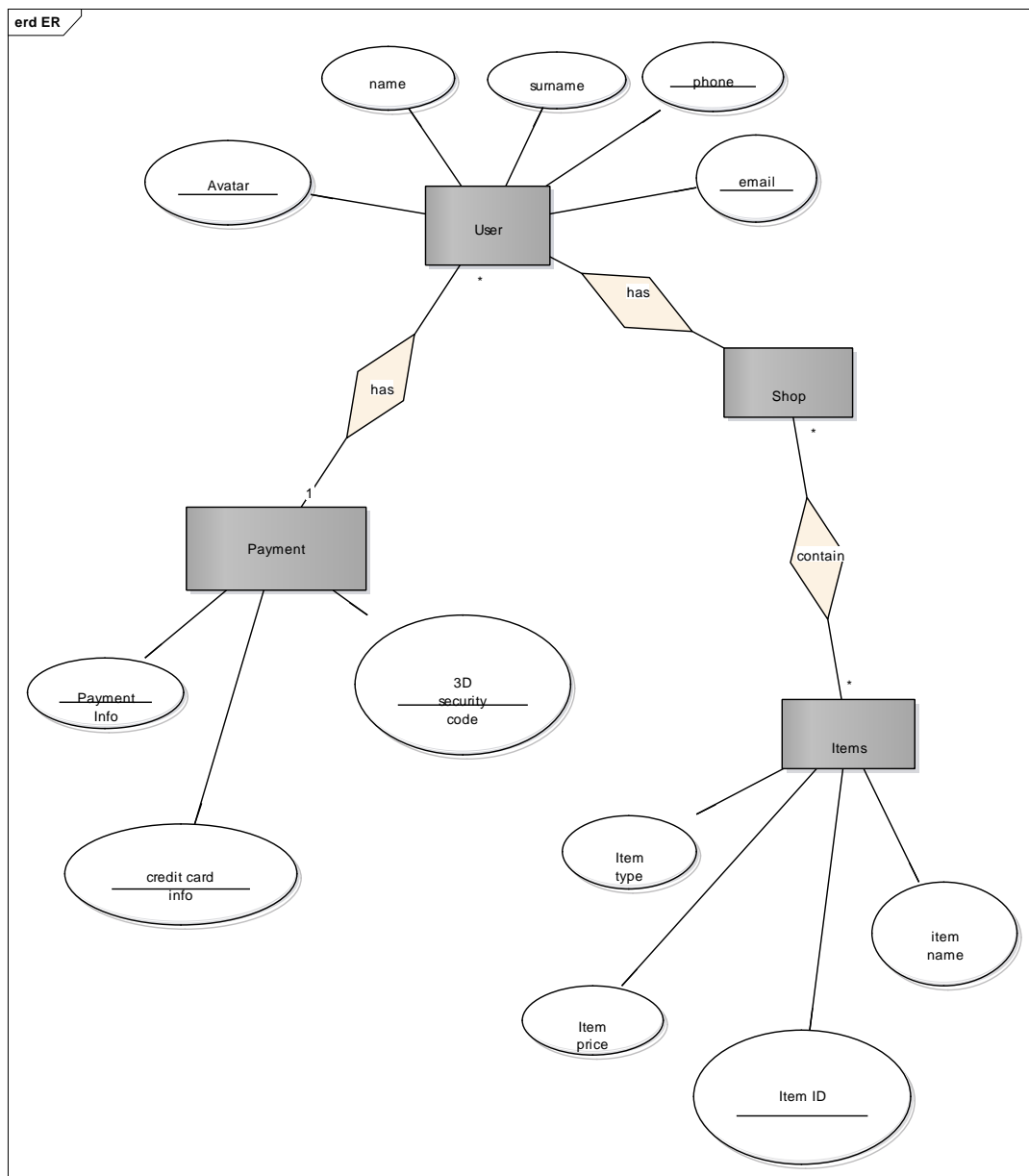### 3.5.1. Actors
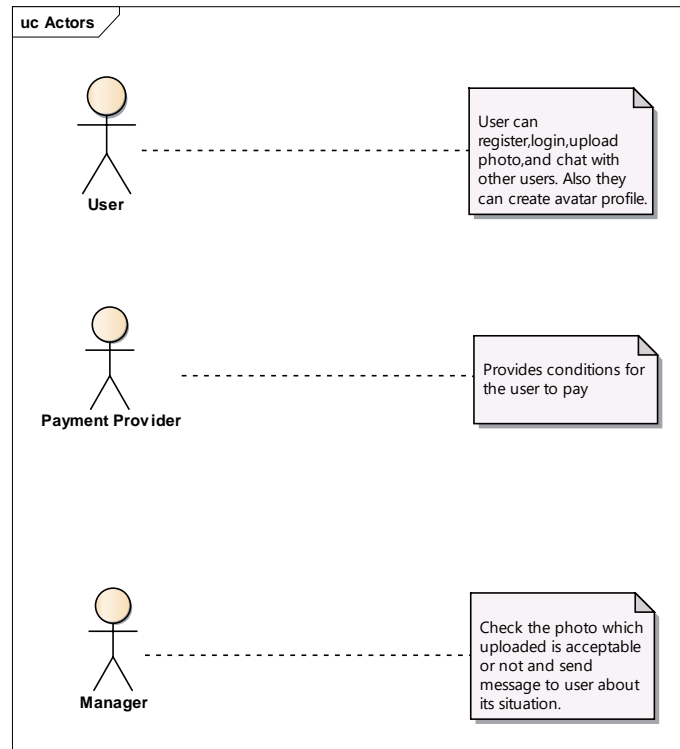
3.5.2. Use Case Diagrams
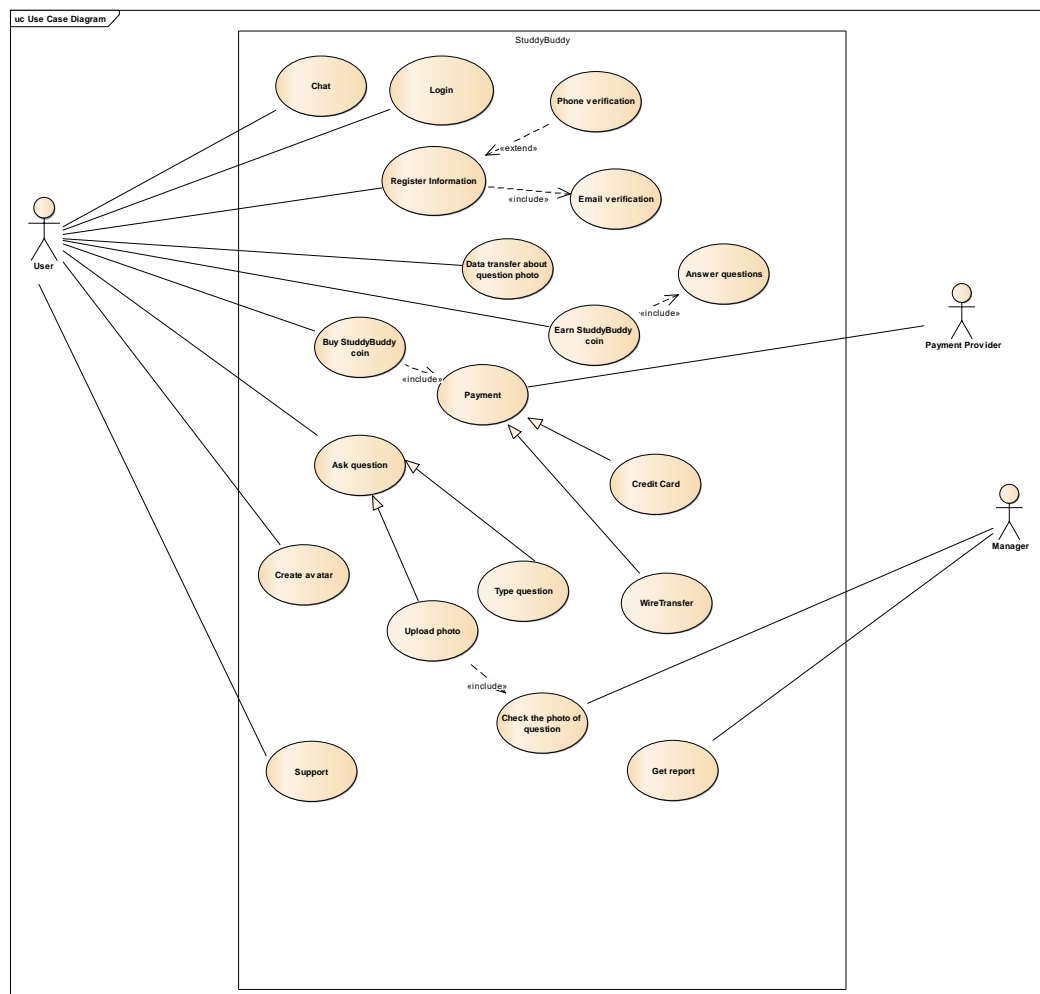
3.6. Class Diagrams
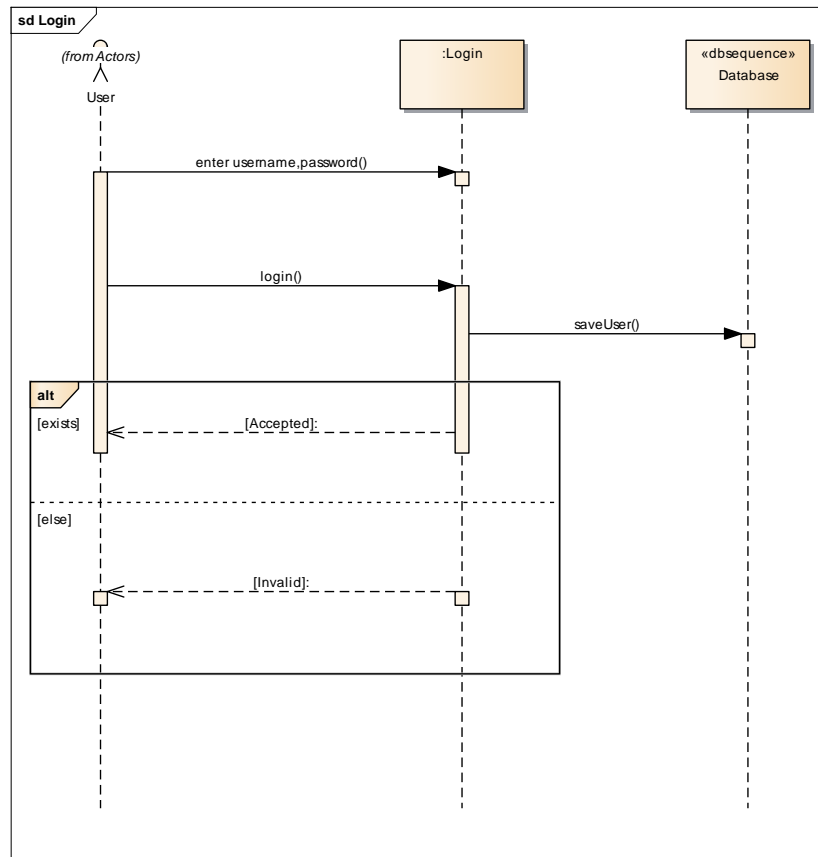
3.6.1. Class Diagram 1: *Studdy Buddy Class Diagram*
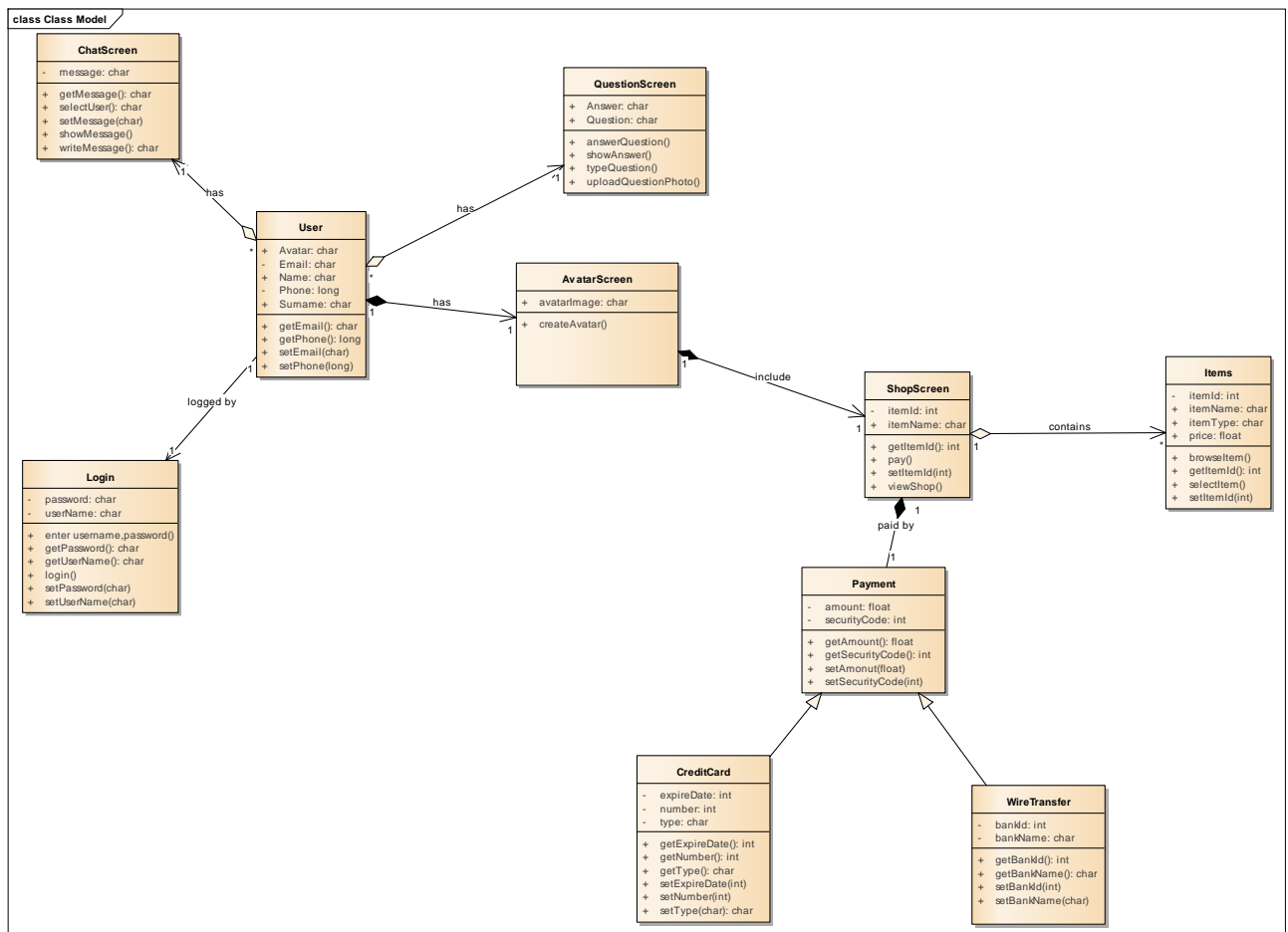
3.7. E/R Diagrams
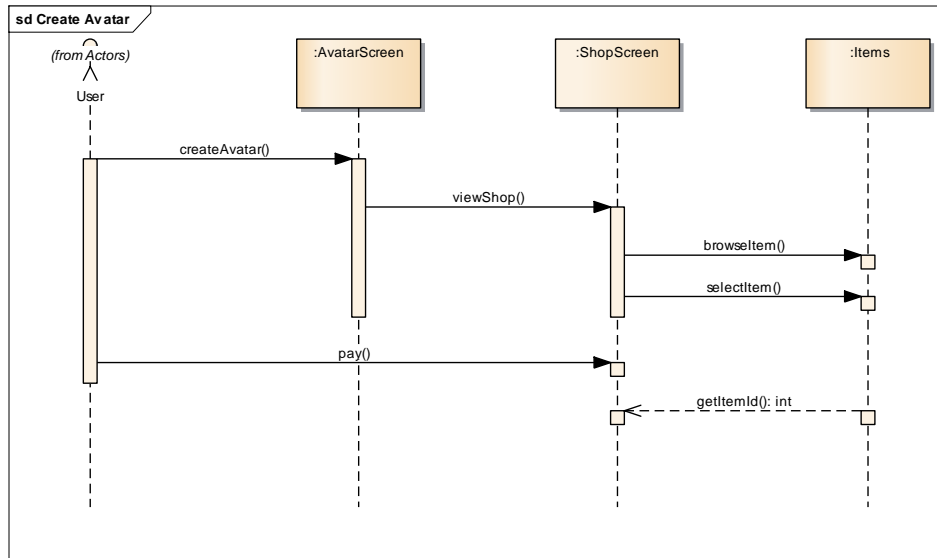
3.7.1. E/R Diagram 1: *Studdy Buddy E/R Diagram*
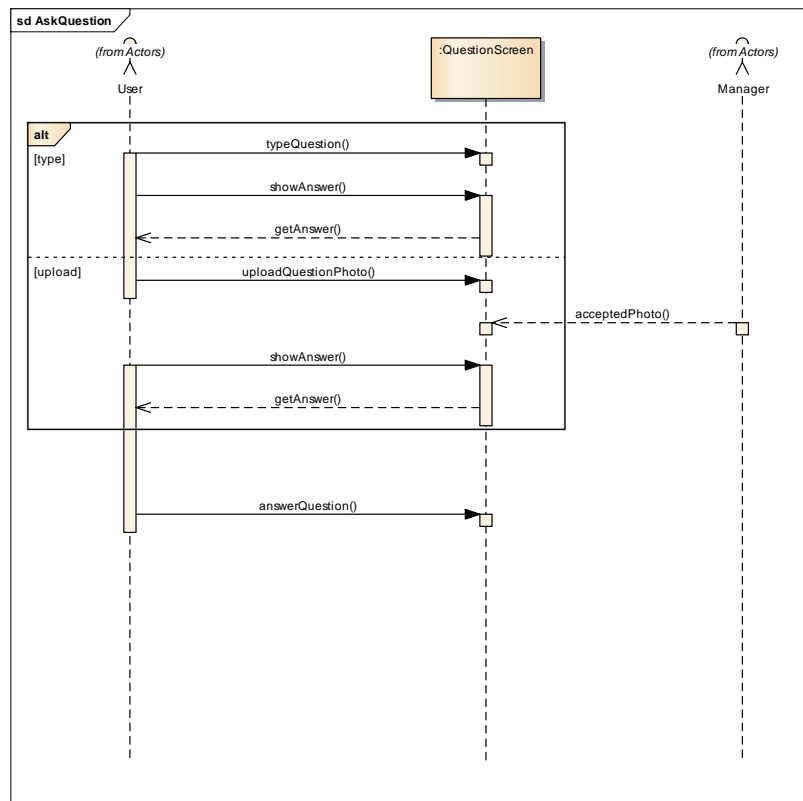
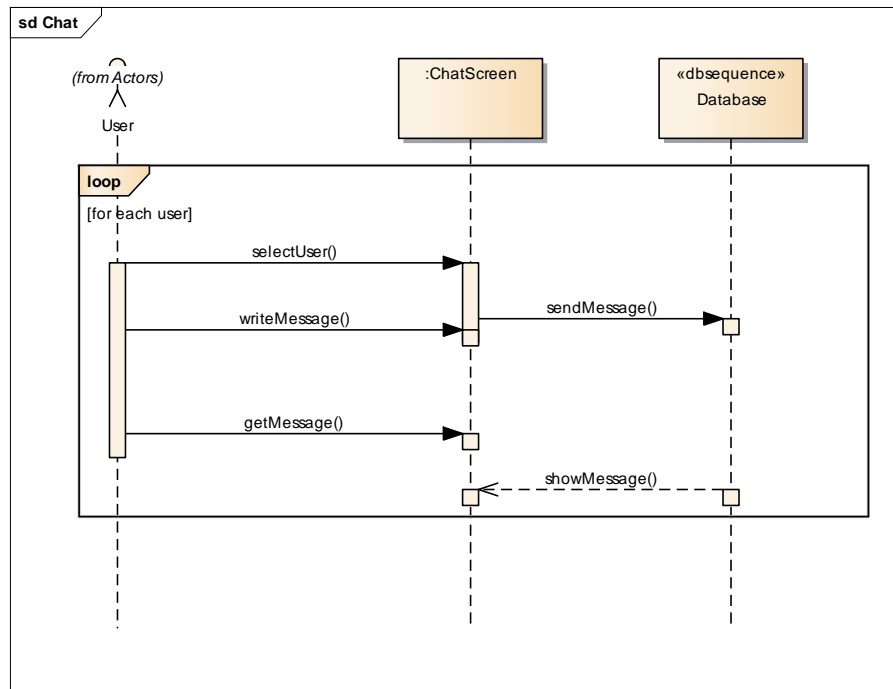# 3.8. Sequence Diagrams

3.8.1. Sequence Diagram 1: *Login*

İZMİR UNIVERSITY OF ECONOMICS

3.8.2. Sequence Diagram 2: *Create Avatar*

3.8.3. Sequence Diagram 3: *Ask Question*

İZMİR UNIVERSITY OF ECONOMICS

3.8.4. Sequence Diagram 4: *Chat*

3.8.5. Sequence Diagram 5: *Payment*

İZMİR UNIVERSITY OF ECONOMICS
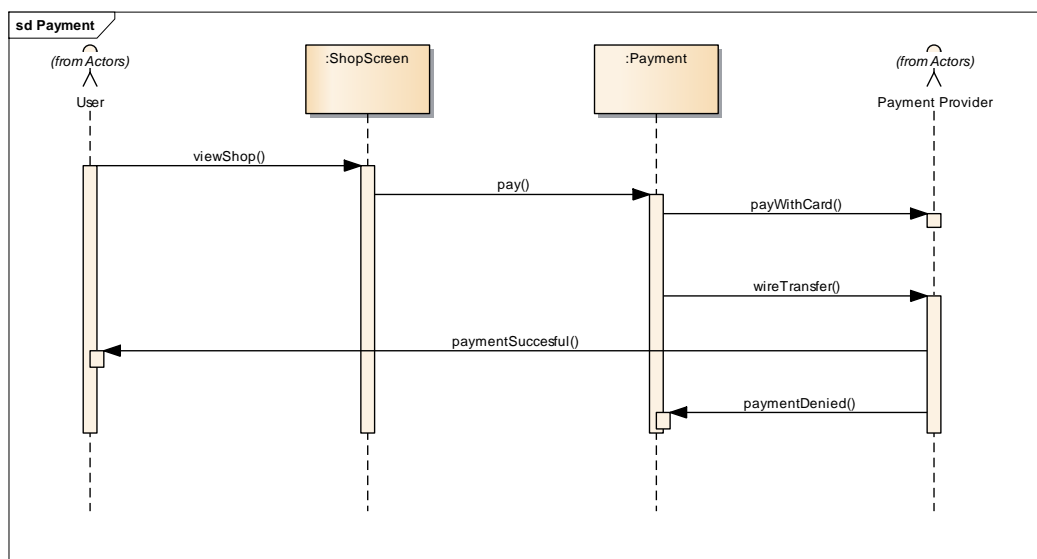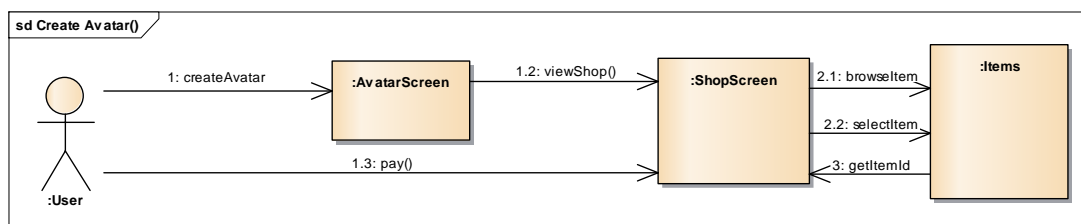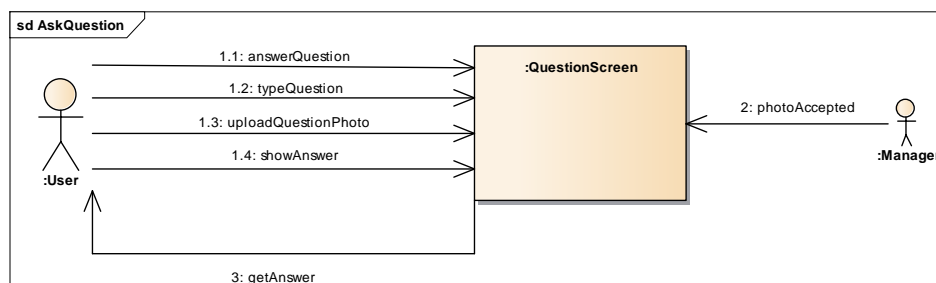
3.9. Communication Diagrams

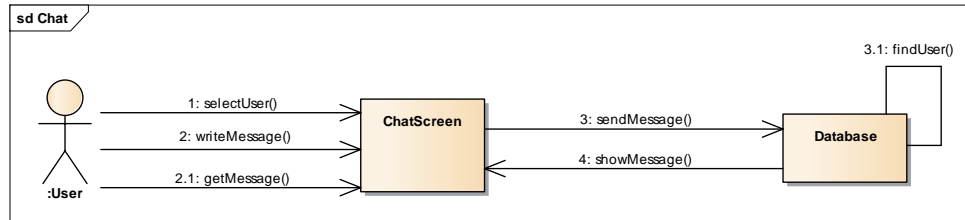## 3.9.1. Communication Diagram 1: *Login*
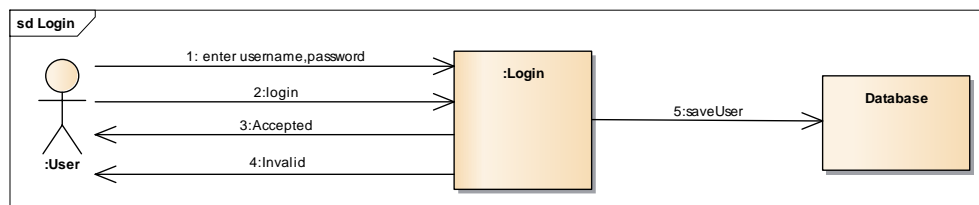
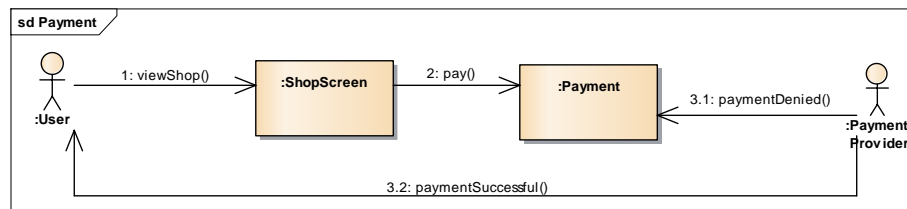## 3.9.2. Communication Diagram 2: *Create Avatar*

3.9.3. Communication Diagram 3: *Ask Question*

3.9.4. Communication Diagram 4: *Chat*

3.9.5. Communication Diagram 5: *Payment*

4. Conclusion

We have determined the functional and nonfunctional requirements in our project. Accordingly, a little project has been shaped in our minds and thus we started to draw our diagrams. As we drew the diagrams, our project became more detailed and started to get clearer in our minds. Since some of our diagrams are interconnected, we worked on them and made some corrections. When we finished all the diagrams, our project became more understandable.