Ingegneria del software e progettazione web

Progetto A.A. 2022/2023

AROUND THE WORLD

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Contents

1. Introduction

1.1 Aim of the documentation

The aim of the documentation is to provide a full description of the software system developed following a well-defined approach, based on practices of software engineering, toward the satisfaction of the project goals.

1.2 Overview of the defined system

The project “Around the world” is a system that allows people from all over the world to live an experience studying a language abroad.

“Around the world” includes three types of users: student, family and agency.

With our system the students can find the perfect accommodation between residence or host family and request an approximate quote for the desired holiday.

By choosing the family option it is possible to contact a family that best reflects the student’s lifestyle according to their hobbies and preferences related to food, siblings and animals.

The family can manage all the requests by deciding whether to accept or reject; only accepted requests can be booked by the students.

When the student decides to book a study holiday in a residence, the request is sent to the agency that will reserve a room if available.

Both the student and the family can view their past and future travels and past holidays in family can be reviewed by students and the rating will be shown to the family.

In the system, the user can interact with the software through two interfaces: one graphic and the other by command line.

1.3 HW and SW requirements

The software and hardware requirements:

- RAM: 2GB of free RAM
- CPU: any modern CPU
- Disk Space: 3.5GB
- Monitor resolution: 1024x768
- Operating System: Microsoft 8 or later, macOS 10.14 or later, any Linux distributions that supports Gnome, KDE or Unity DE

1.4 Related systems, Pros and Cons

Other travel agencies like EF, Wep or Kaplan organize study holidays both in residence or family, but they don't allow students and families to manage requests and bookings directly in the system.

These systems merely let the user request quotes and download travel catalogues, while main activities must be done by contacting the agency. Furthermore, the family is assigned by the agency not giving the student the possibility to choose.

"Around the world" allows to view all the possible families in a selected city and helps the student in the choice of the perfect one by showing their compatibility with the family.

A con is that our system is single-user and does not allow concurrent usages from different users.

It should also be added the possibility for the student to delete the booking and the family should be able to require the agency to change the profile.

A pro is that other systems don't allow to create a profile where you can view the personal travel history with the student rating, however these agencies in the catalogues show reviews of the experiences accompanied by a short description and not only a vote from 1 to 5 like in our system.

2. User Stories

1. As an exchange student, I want to contact a host family according to my selected preferences* by sending a request, so that I can find a family with my same interests.

2. As an exchange student, I want to review my past travels in a family by selecting a grade from 1 to 5, so that I can let the family know how my experience was.

3. As a host family, I want to view the preferences* selected in the student request, so that I can decide whether to accept or reject.

4. As a member of the agency, I want to reserve a room for students who require to stay in the residence during a selected period, so that I can provide them with accommodation.

5. As an exchange student, I want to check the distance between the host family's house and the school, so that I can know how long it takes to go to school by bus, car, or foot.

6. As an exchange student, I want to book a study holiday in a residence by selecting the city, the arrival, the departure, and the type of room (single or double), so that I can study abroad and have an accommodation.

***preferences** = siblings, animals, hobbies (travels, books, nature, film, sport, cooking, video games), room (single or shared), food preferences (vegetarian, vegan).

3. Functional Requirements

1. The system shall show to the host family the requests of the exchange students with the student's name, surname, age and nationality, arrival and departure and the percentage of compatibility between the family's profile and the preferences* required.

2. The system shall provide the form to request a quote with the possibility to select whether to stay in a residence or in a family, in which city and period, by adding extra activities according to the selected city.

3. The system shall display the available rooms in the selected residence during the period for which the student applied.

4. The system shall provide the form to contact a host family with the possibility to select the city, the period and the preferences*.

5. The system shall display the distance between school and family's address and how long it takes to go by bus, car, or foot.

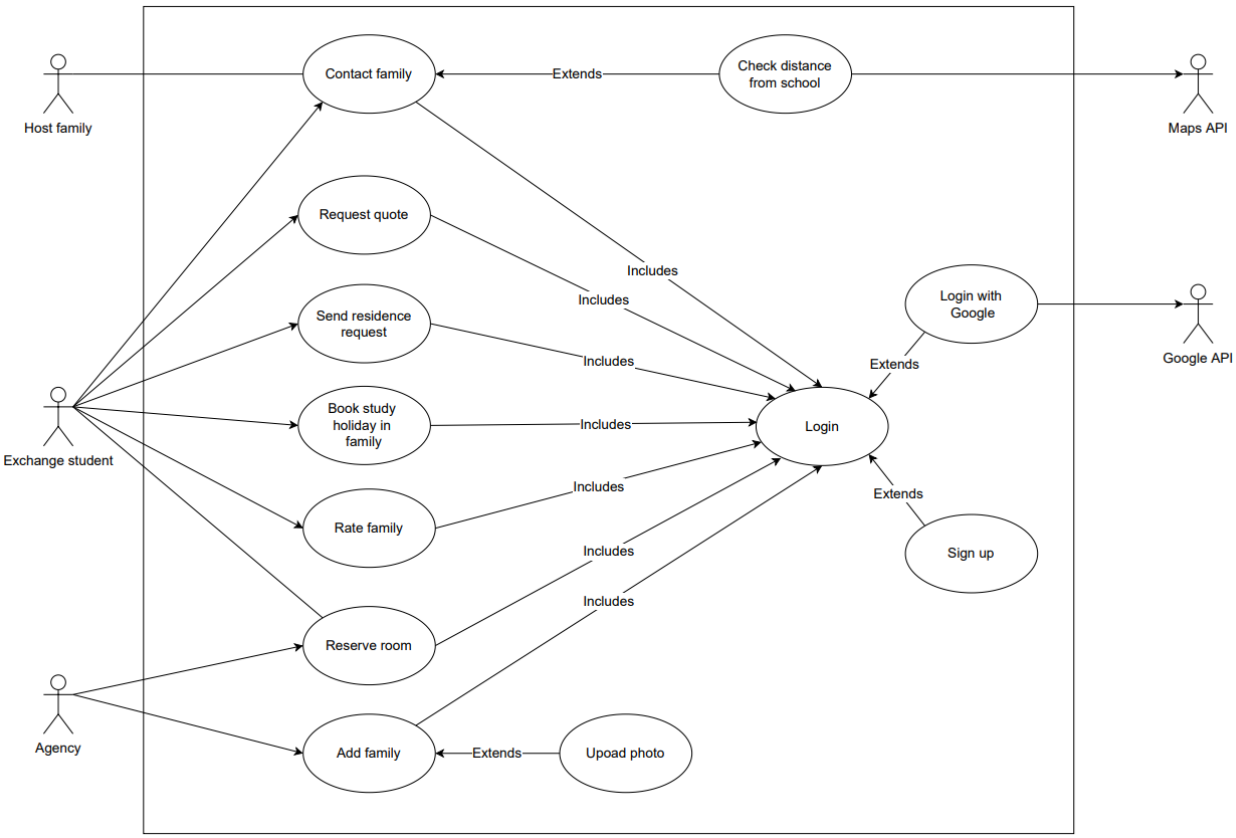
6. The system shall calculate the percentage of each family's profile's compatibility with the profile of the student who applied, according to the selected preferences*.

***preferences** = siblings, animals, hobbies (travels, books, nature, film, sport, cooking, video games), room (single or shared), food preferences (vegetarian, vegan).

4 Use Cases

4.1 Diagram

Link:
https://github.com/silviaperelli/Deliverables_AroundTheWorld/tree/60c7c69fc6c25e655cfbaba7d1f057d84c202712/Use%20Case%20Diagram



NOTE: Use Case *Check the distance from school*, *Login with Google* are NOT implemented

4.2 Internal Steps

Use case: Reserve room

1. The agency requests to reserve a room
2. The system gets the information selected in the student booking request
3. The system gets available rooms compatible with the request
4. The system displays the available rooms
5. The agency selects a room
6. The system fetches the selected room
7. The system checks if the type of the selected room is the same of the one required
8. The system saves the reservation

3a. *There are no available rooms:* the system shows the message “No available rooms” and deletes the request.

4a. *The agency does not select any room and wants to go forward:* the system shows the error message “Room must be selected” and go back to 4.

7a. *The room has a different type from the one required:* the system sends to the student the request modified.

Use case: Add family

1. The agency requests to add a family
2. The system provides a blank form for the insertion of a photo and family information
3. **The agency uploads the photo of the family**
4. The agency enters the family information
5. The agency selects to save the family
6. The system fetches the information
7. The system saves the family

2a. *The agency does not upload the photo:* the system set the default photo

5a. *The form is not completed:* the system shows the error message “Please complete the field”

6a. *The family already exists:* the system notifies the agency and terminates the use case

NOTE: Step 3 corresponds to the extends use case *Upload photo*

5. Storyboards

LINK:
https://github.com/silviaperelli/Deliverables_AroundTheWorld/tree/60c7c69fc6c25e655cfbaba7d1f057d84c202712/UI%20Prototypes

NOTE: As a student start the visualization of the UI prototypes from the file accesPageStudent.html

As a family start the visualization of the UI prototypes from the file accesPageFamily.html

As the agency start the visualization of the UI prototypes from the file accesPageAgency.html

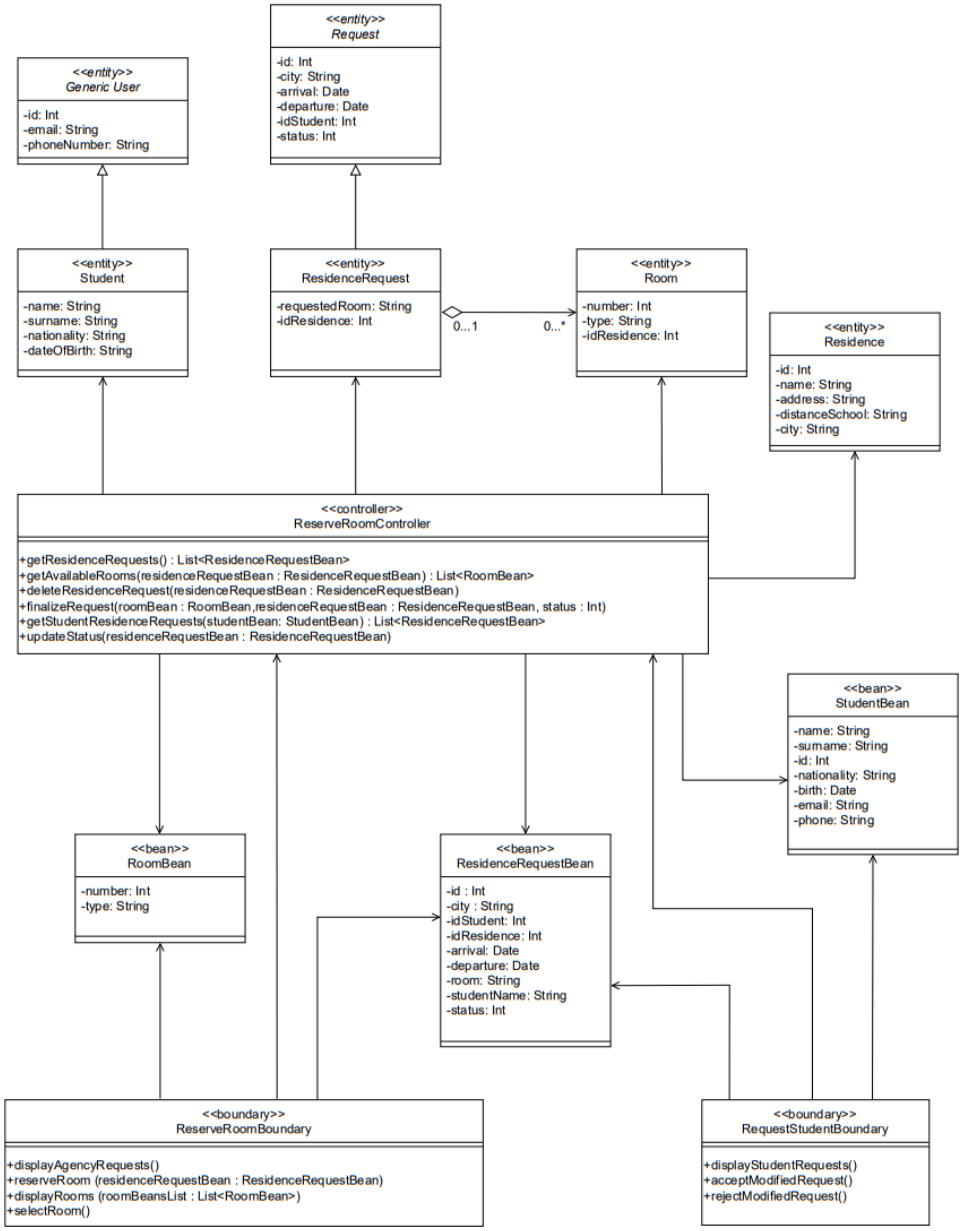
6. Class Diagram

6.1 BCE

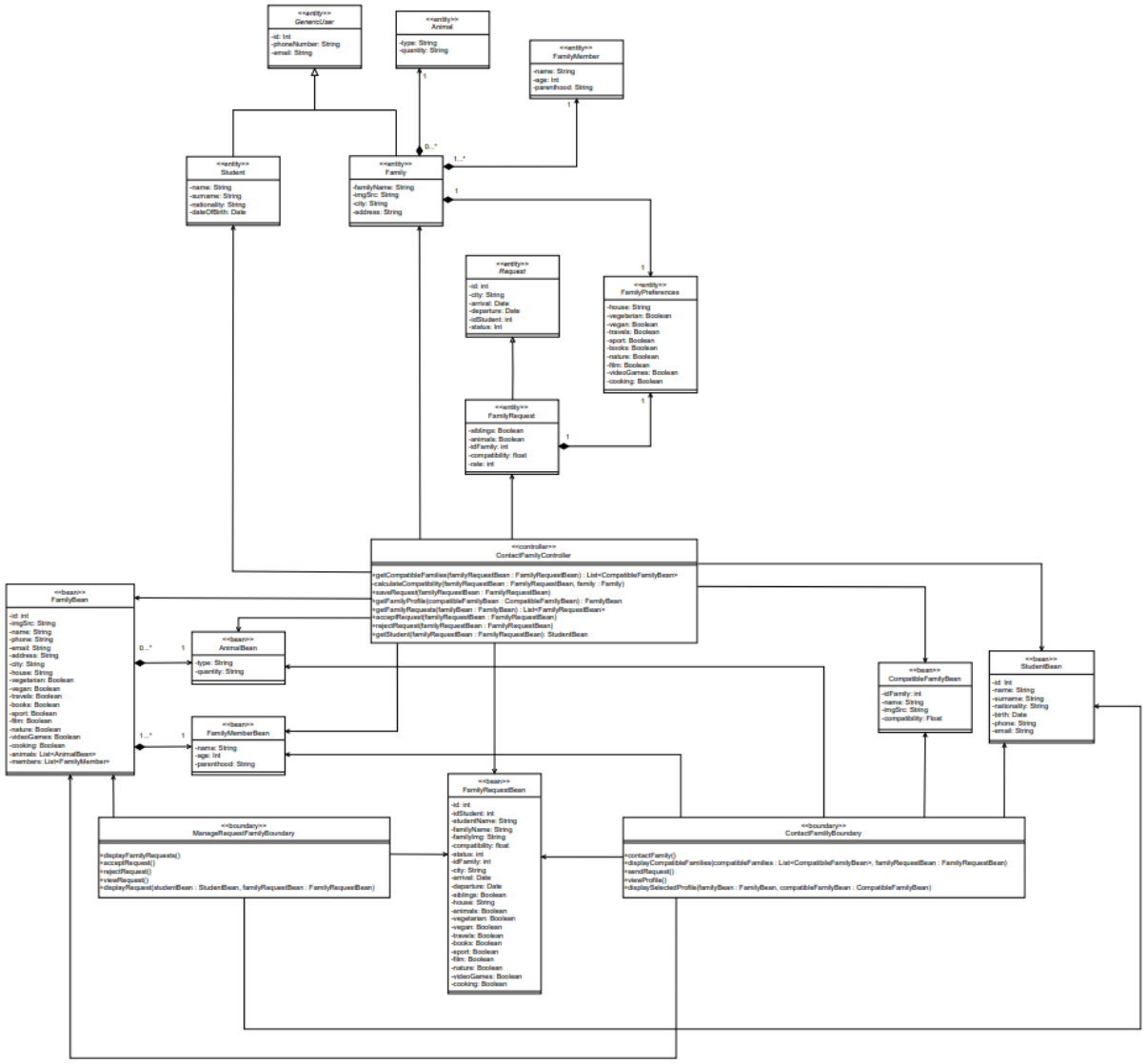
Link:

https://github.com/silviaperelli/Deliverables_AroundTheWorld/tree/0edab2ab6a3841944c78112610bb1d78e89faff2/BCE

Reserve room



Contact family

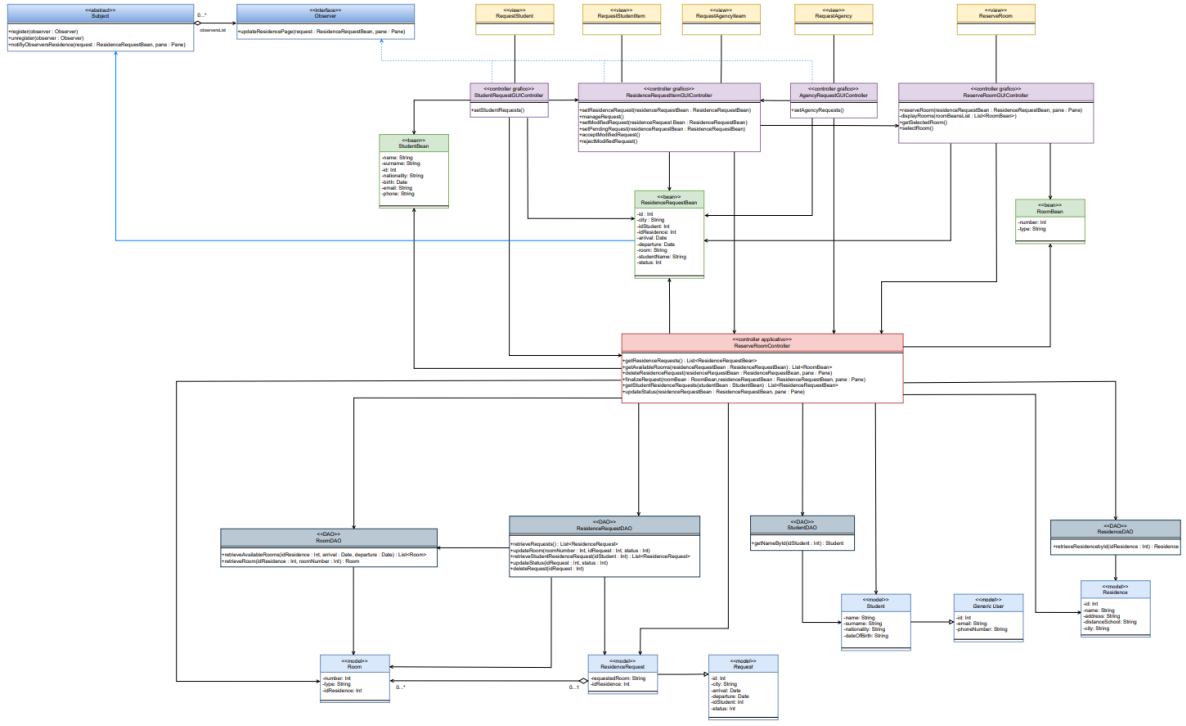


6.2 MVC

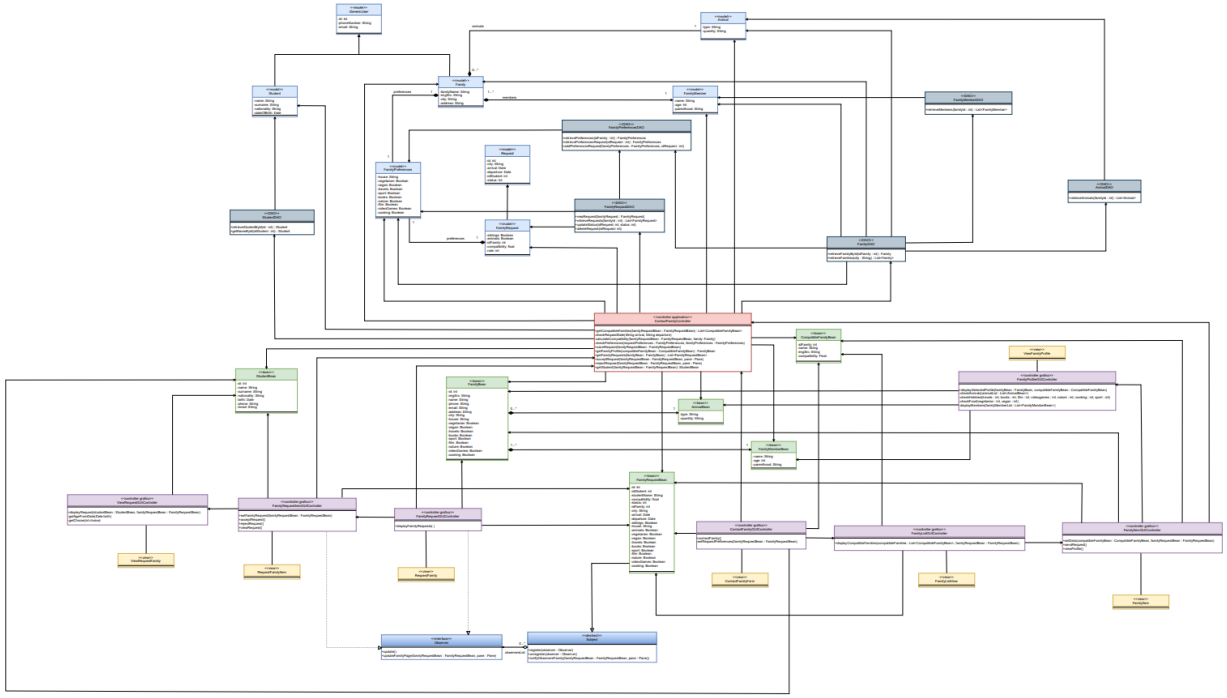
Link:

https://github.com/silviaperelli/Deliverables_AroundTheWorld/tree/62cbd8e3a864068bc89fd5ddc936c93423056edc/MVC

Reserve room



Contact family

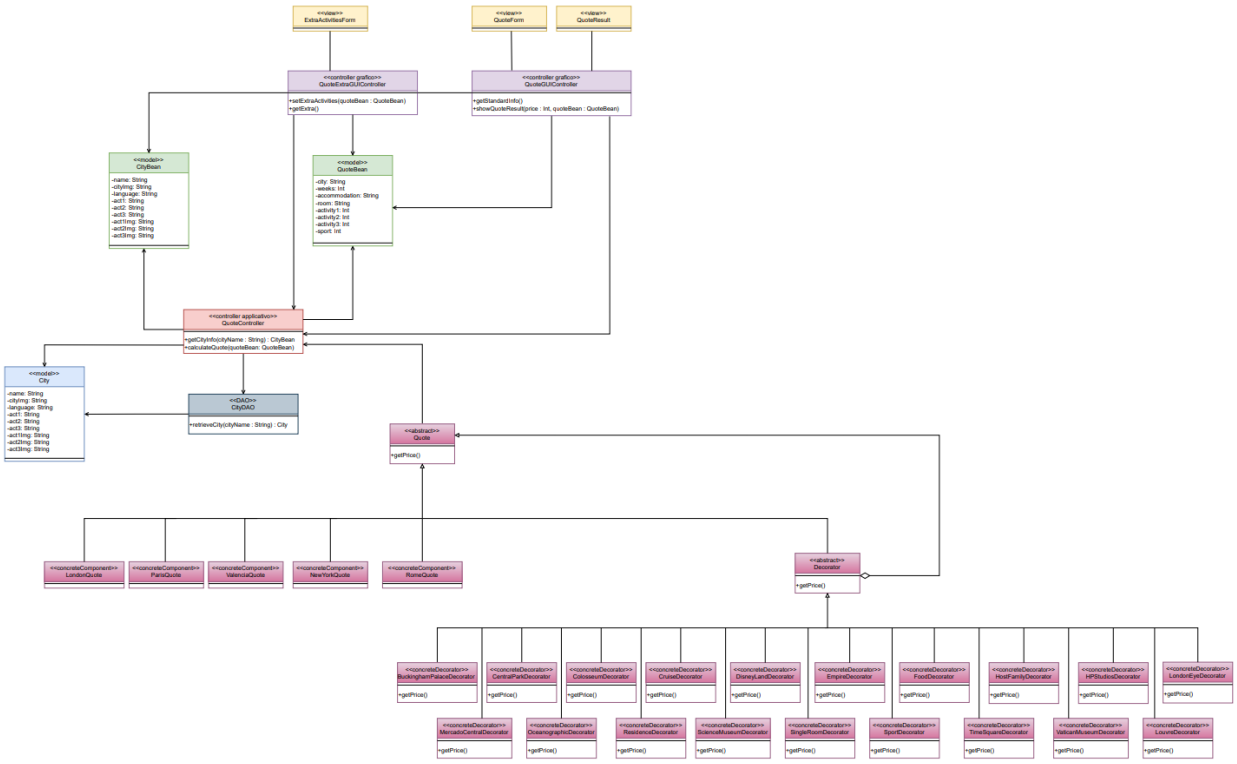


6.2 Design Pattern

Link:

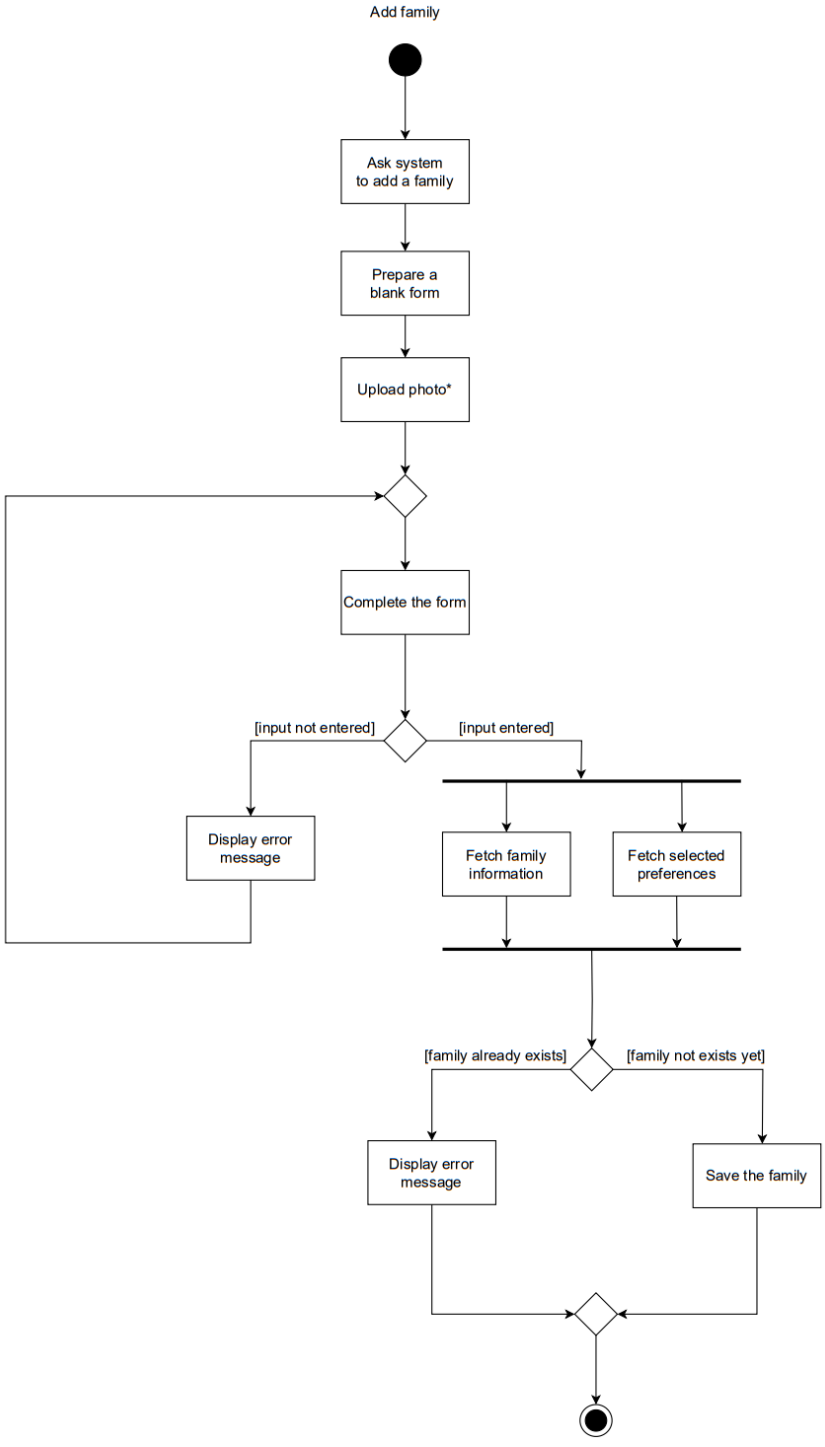
https://github.com/silviaperelli/Deliverables_AroundTheWorld/tree/62cbd8e3a864068bc89fd5ddc936c93423056edc/MVC

Calculate quote

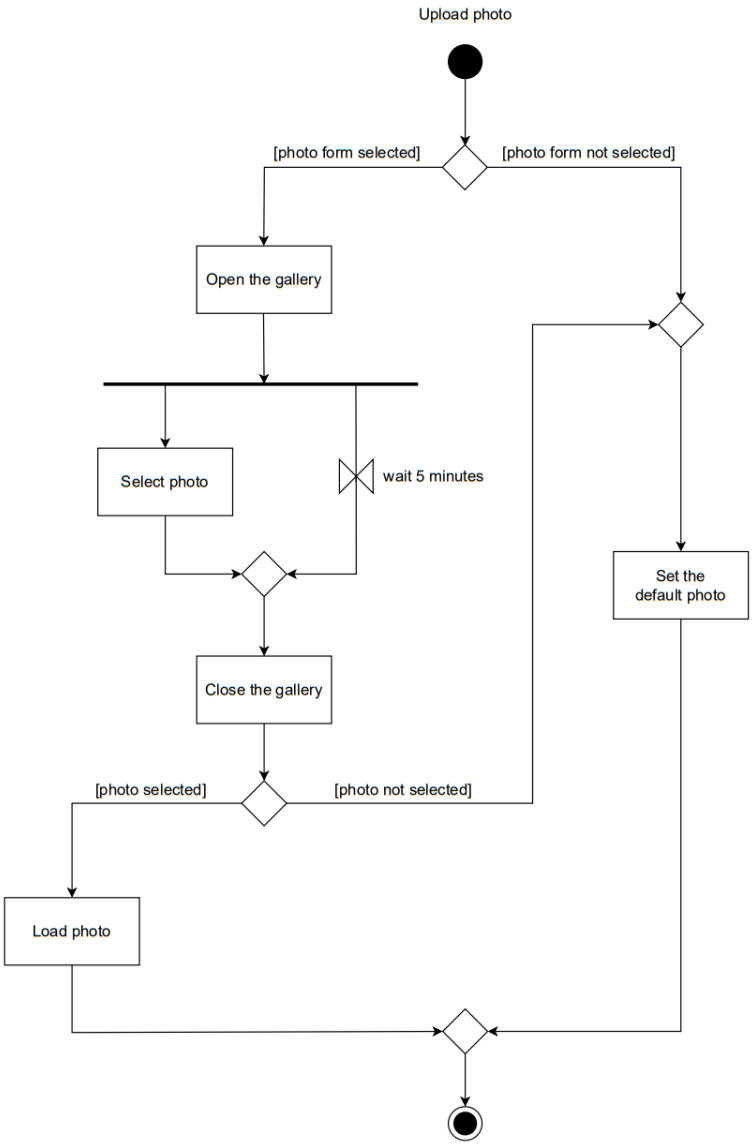


7. Activity Diagram

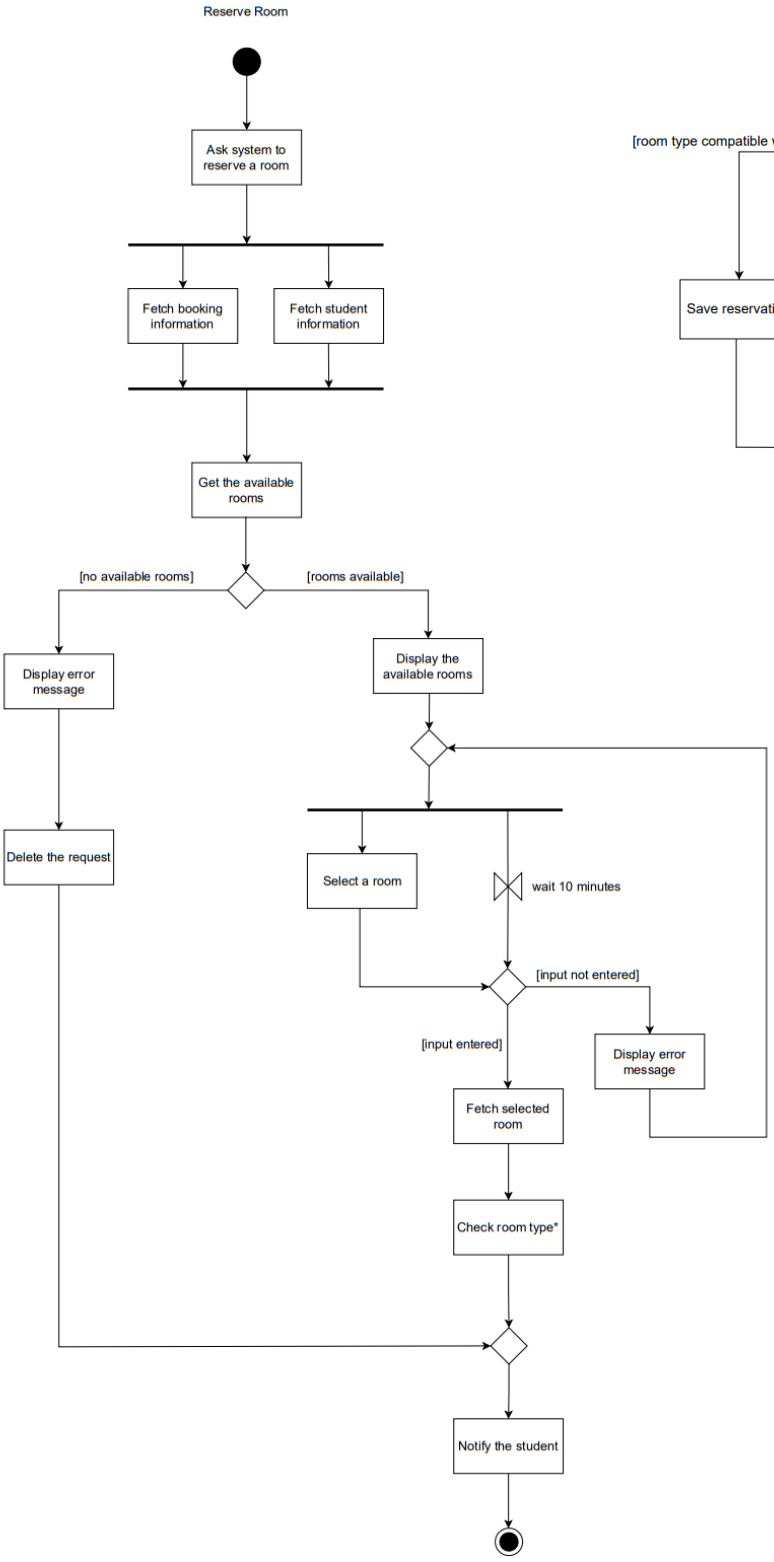
Link:
https://github.com/silviaperelli/Deliverables_AroundTheWorld/tree/60c7c69fc6c25e655cfbaba7d1f057d84c202712/Activity%20Diagram

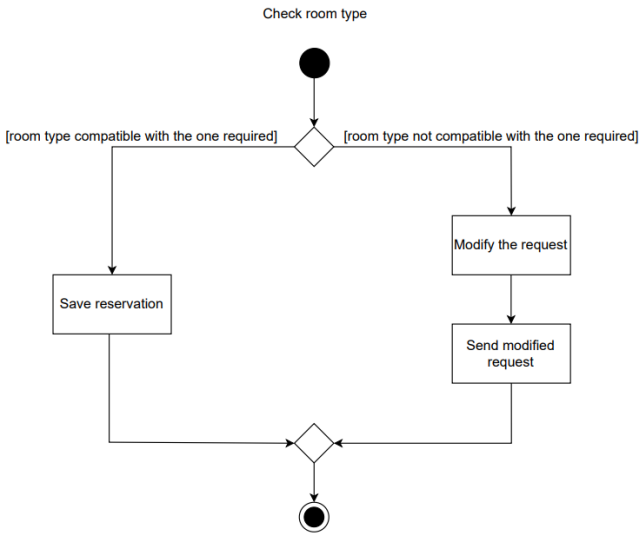


NOTE: The actions *Fetch family information* and *Fetch selected preferences* are not simultaneous in the implementation.



NOTE: The timeout is not implemented.



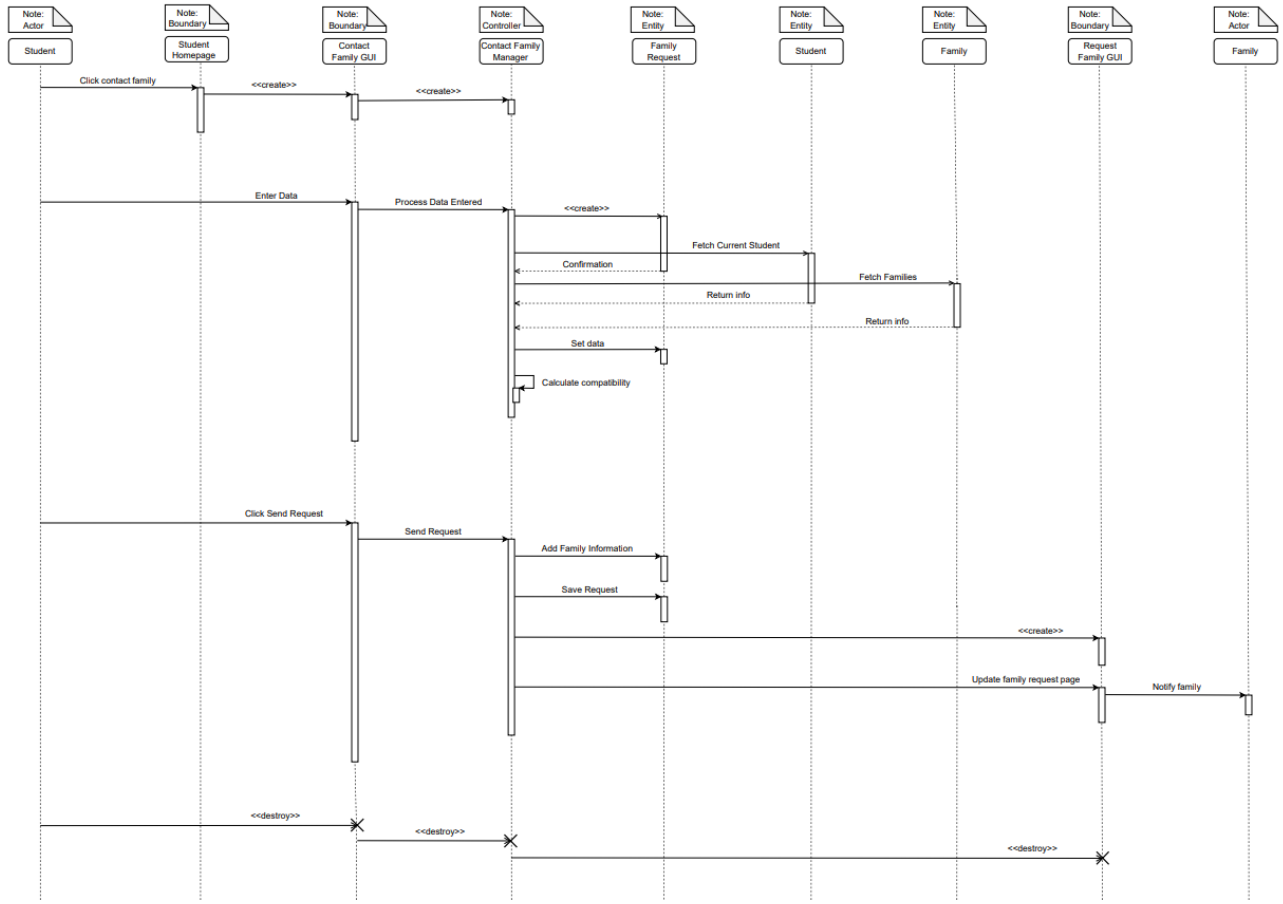


NOTE: The timeout is not implemented and the actions *Fetch booking information* and *Fetch student information* are not simultaneous in the implementation.

8. Sequence Diagram

Link:
https://github.com/silviaperelli/Deliverables_AroundTheWorld/tree/60c7c69fc6c25e655cfbaba7d1f057d84c202712/Sequence%20Diagram

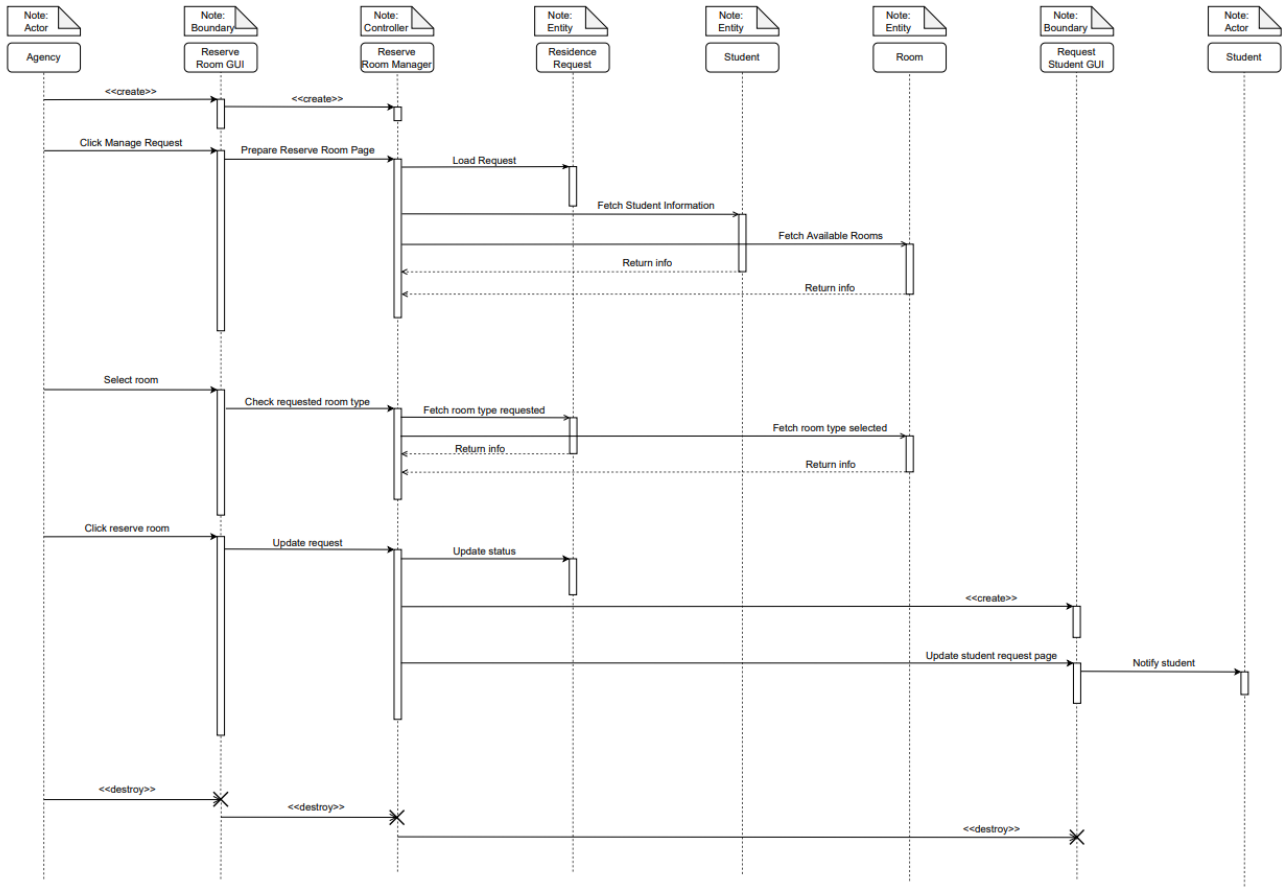
Send request to family



NOTE: All the asynchronous calls are synchronous in the implementation.

The destroys are not implemented since the deallocation in Java is in charge of the Garbage Collector.

Reserve room



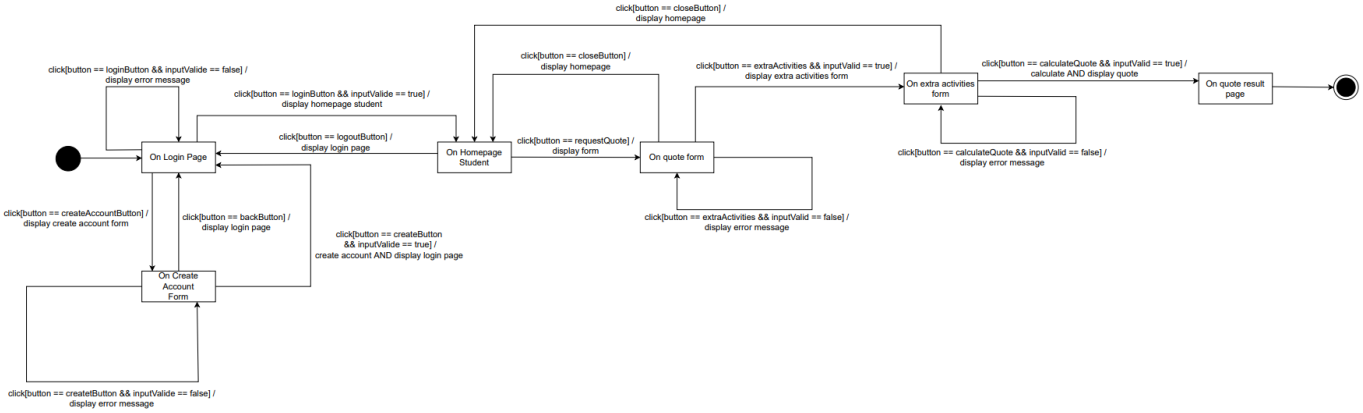
NOTE: All the asynchronous calls are synchronous in the implementation.

The destroys are not implemented since the deallocation in Java is in charge of the Garbage Collector.

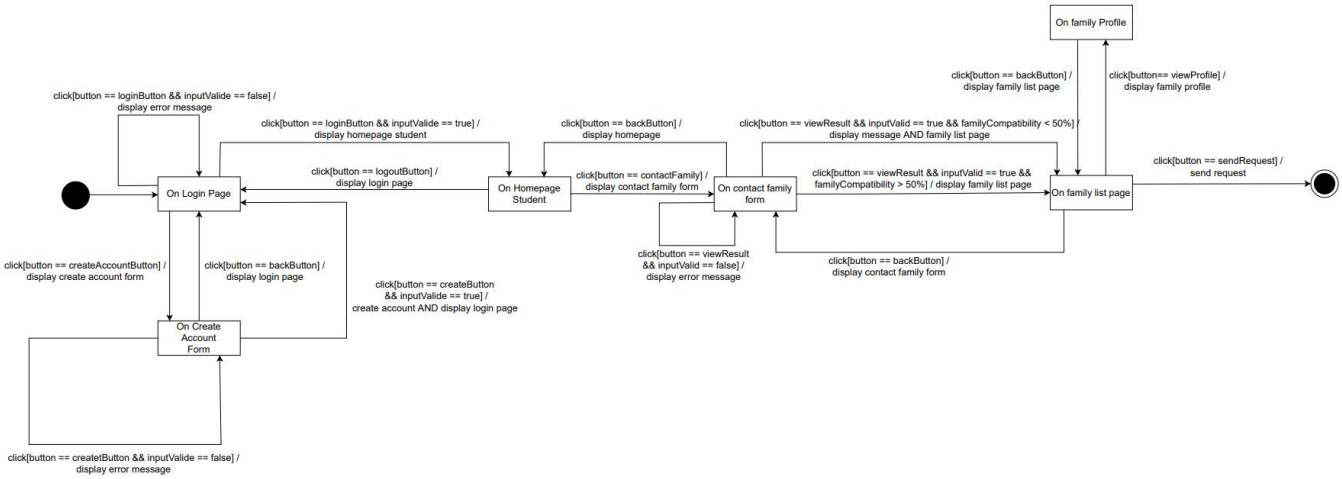
9. State Diagram

Link:
https://github.com/silviaperelli/Deliverables_AroundTheWorld/tree/60c7c69fc6c25e655cfbaba7d1f057d84c202712/State%20Diagram

Request quote



Send Request to family



10. Testing

10.1 Selenium Test Via GUI

Link:
https://github.com/silviaperelli/Deliverables_AroundTheWorld/tree/60c7c69fc6c25e655cfbaba7d1f057d84c202712/Test%20Selenium%20GUI

10.2 Selenium Test Via API

Link:

https://github.com/silviaperelli/Deliverables_AroundTheWorld/tree/b8963c006d3e3764c26feb09cb60115a0ea61f91/Test%20Selenium%20API

11. Code

Link:

https://github.com/silviaperelli/AroundTheWorld.git

12. Video

Link:
https://github.com/silviaperelli/Deliverables_AroundTheWorld/tree/60c7c69fc6c25e655cfbaba7d1f057d84c202712/Video

13. Sonar Cloud

Link:

https://sonarcloud.io/summary/overall?id=silvia166_AroundTheWorld