



CSE 3105 / CSE 3137

OBJECT-ORIENTED ANALYSIS AND DESIGN

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COURSE PROJECT: <Reunion>

System Design Document

Group 17

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1 Introduction

As an architectural choice, we opted for a layered architecture. Particularly, we emphasized high coherence and low coupling levels. To ensure the seamless operation of the system, we prioritized Usability, Robustness, and Efficiency. The diagrams and schematics in this report were crafted considering the information from the requirement analysis section.

1.1 Purpose of the System

1.2 Design goals

Our goal is to have a user-friendly interface and to ensure that users can reach their desired locations without difficulty, that data is protected in a way that cannot be stolen, and that the communication connection runs smoothly.

Functionality vs. Usability:

Our website prioritizes usability due to its focus on elderly users. Our goal is to ensure that users can navigate the platform comfortably and access the content they desire with ease. The reason for sacrificing functionality is to address the challenges that elderly individuals may encounter while using our website.

Cost vs. Robustness:

The system, fundamentally centered around communication, deems errors unacceptable as such instances could render the website non-functional. In this context, one of the elements that is deemed incomparable with cost is robustness. In essence, the fundamental priority of the website is to preserve the robustness of the system.

Efficiency vs. Portability:

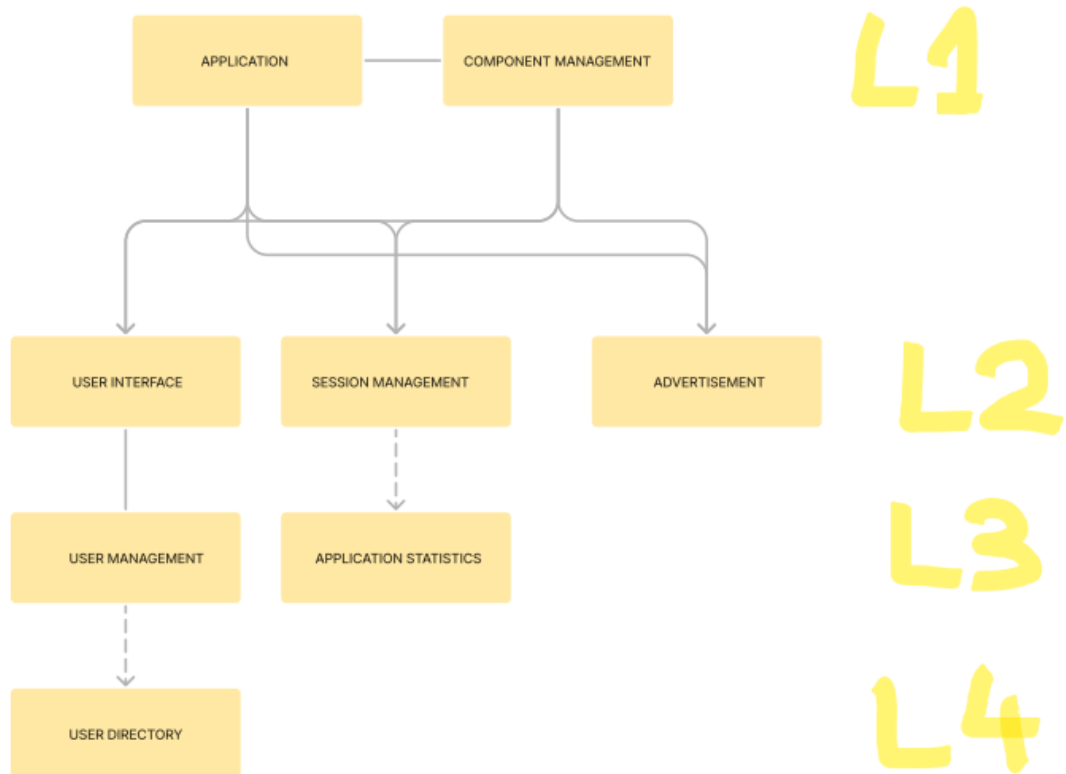
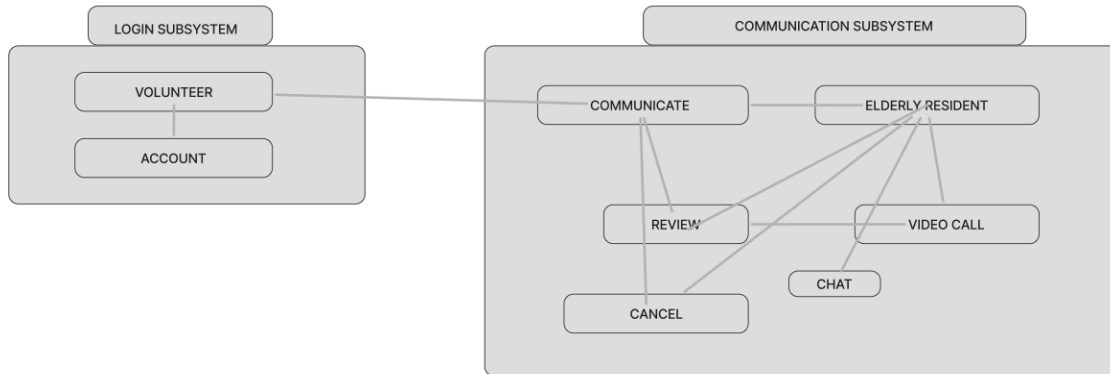
The system, as it can accommodate multiple users online, needs to have effective performance. In this context, efficiency should be prioritized.

Current Software Architecture

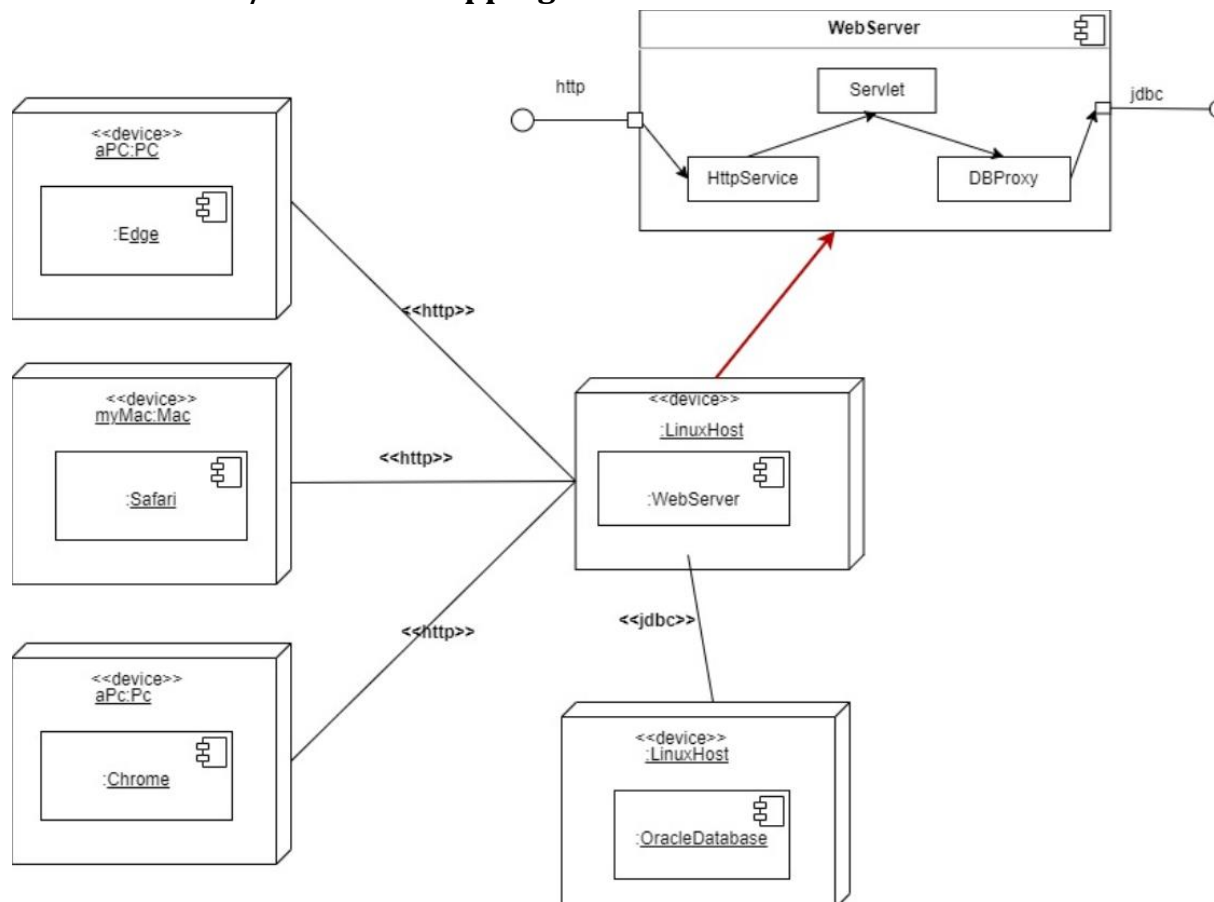
While developing this website, we introduced a completely new idea and avoided imitating any existing projects. However, we drew inspiration from current social media applications, such as the video and voice call feature in WhatsApp. Nevertheless, unlike WhatsApp, our system provides the opportunity to communicate with anyone online, not limited to specific individuals. Our application shares similarities with Instagram, featuring video and voice calls. Unlike Instagram, users do not share their activities on our platform, and our project is oriented towards providing social benefits.

2 Proposed Software Architecture

2.1 Subsystem decomposition



2.2 Hardware/software mapping



2.3 Persistent data management

- REUNION deals with four sets of objects that must be stored:
- The objects that are created and accessed by the communicate, schedule, and review subsystems.
- Objects created by and holding users. (e.g. Volunteer, Psychologist, Elderly Resident, System Manager).
- not change much during the lifetime of REUNION
- cost vs. scalability trade-off
- Mixed strategy:
 - We use both flat files and relational databases because our aim is to find the optimal solution that is both fast and takes up little space. We will keep the image files as files and keep the path of the image files in the database so that we can easily access them on the web page.
- The objects that are created and accessed by the
- It allows the user to log in to the REUNION site and see his/her own information after logging in.
- specific to each User
- We use Oracle database as a database because:

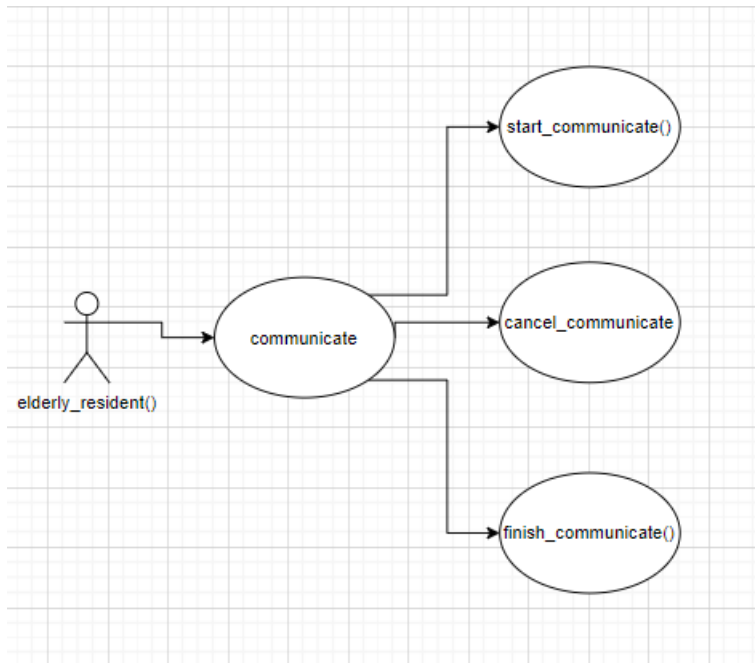
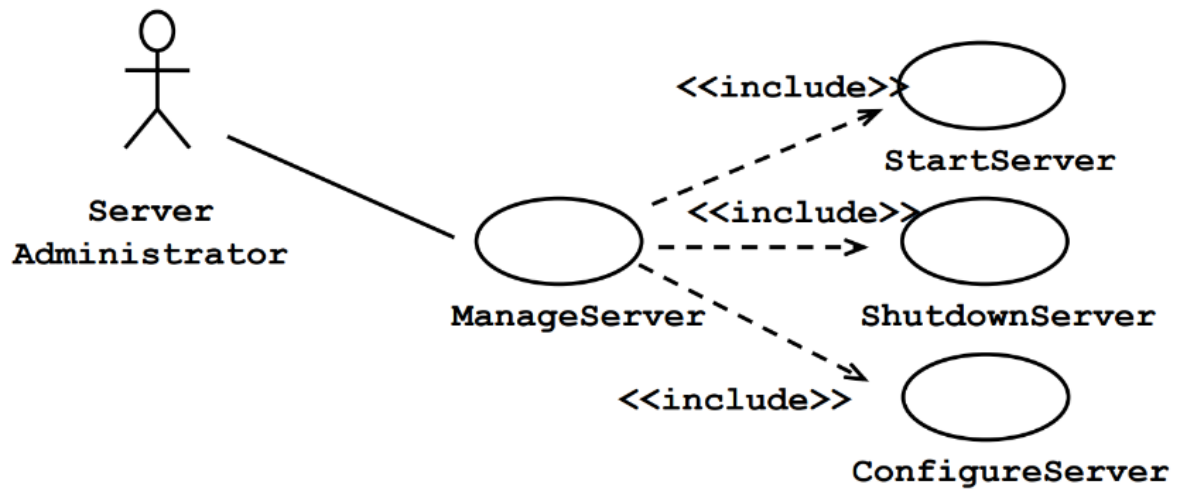
- Performance: Oracle is a high-performance database system. It is powerful at handling large data loads, running complex queries quickly, and providing stable performance for large-scale applications.
- Reliability and Durability: Oracle offers a reliable structure in matters such as ensuring data integrity, backup, recovery and recovery in case of disaster. It is known for its high usability and durability features.
- Advanced Features: With its rich feature set, Oracle has many features that can meet complex business needs. For example, it offers features such as data encryption, automatic storage management, load balancing, and automatic backup.
- Scalability: Oracle can be used on a wide scale, from small businesses to large organizations. It is easy to scale systems with growth and increase resources as needed.
- Support and Application Ecosystem: Oracle has a large user community. This makes it easier to access online resources, forums and help resources. Additionally, a large ecosystem of third-party applications and tools is available.

2.4 Access control and security

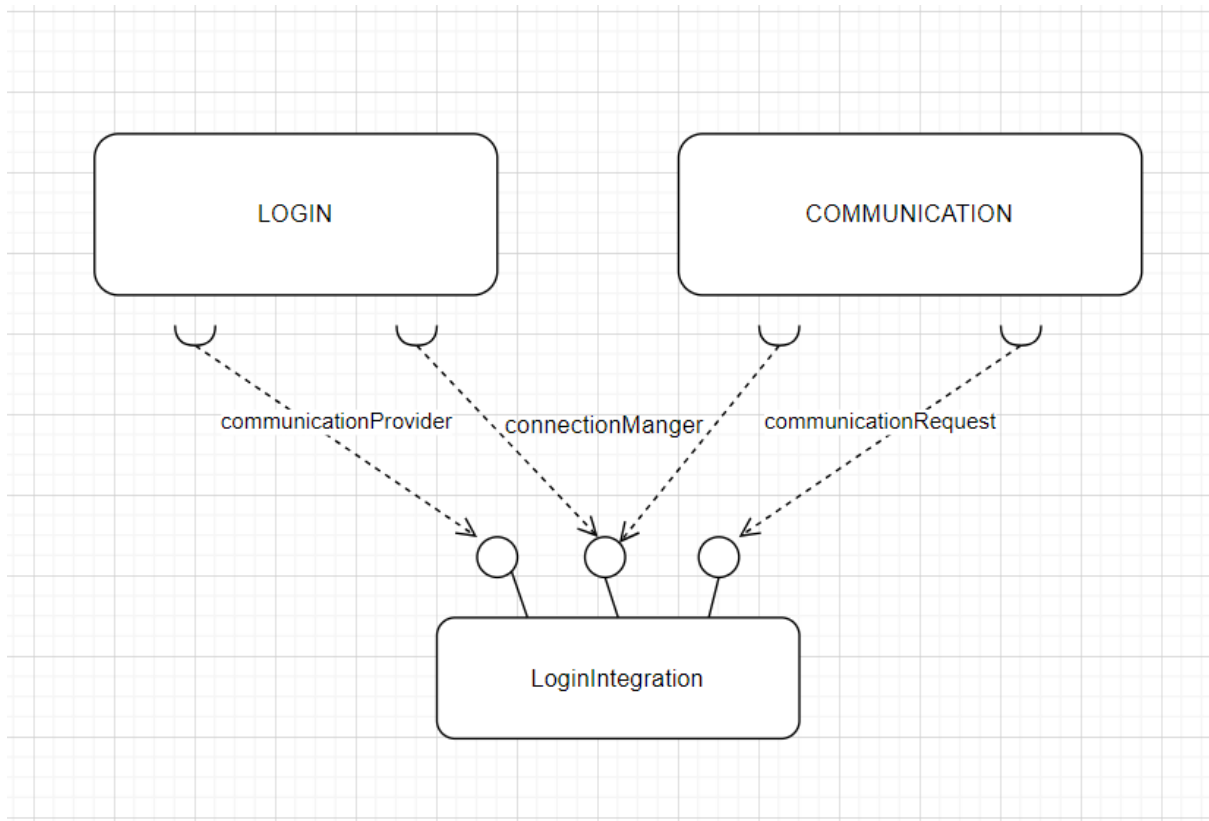
psychologist	Application	User	Account
	login() sign_up()	communicate() displaySchedule() review() help() playGame()	display_HomePage() enter_live() reload_Page() enter_schedule() enter_game()
volunteer	login() sign_up()	communicate() displaySchedule() review() help() playGame()	display_HomePage() enter_live() reload_Page() enter_schedule() enter_game()
system manager	login() sign_up()	communicate() displaySchedule() review() help() playGame()	manageSystem() display_HomePage() enter_live() reload_Page() enter_schedule() enter_game()
elderly resident	login() sign_up()	communicate() displaySchedule() review() help() playGame() selectPartner()	display_HomePage() enter_live() reload_Page() enter_schedule() enter_game()

The authentication mechanism for the system will rely on passwords. Passwords must be at least 8 characters long and include uppercase letters, lowercase letters, punctuation marks, and numbers.

2.5 Boundary conditions



3 Subsystem Services



4 Glossary

5 References

6 Appendix

- Annex – I: Distribution of Work
- Annex – II: Meeting Minutes

Distribution of Work

Meeting Minutes

Date:	01.01.2024
Location:	teams
Duration:	20 minutes
Participants:	Batın Taha Önal, Bilal Ayakdaş, Mehmet Alpergün, Selvanur Kıraç
Content of the meeting (briefly explain the agenda, decisions, work distributions, etc.)	
We have divided tasks. We have assigned the subsystem decomposition and boundary conditions sections to Batın, hardware-software mapping and persistent data management to Bilal, Mehmet and Selvanur will handle the remaining sections.	

Date:	03.01.2024
Location:	teams
Duration:	2 hours 13 minutes
Participants:	Mehmet Alpergün, Selvanur Kıraç
Content of the meeting (briefly explain the agenda, decisions, work distributions, etc.)	
Mehmet and Selvanur handled the remaining sections.	

Date:	06.01.2024
Location:	teams
Duration:	34 minutes
Participants:	Batın Taha Önal, Bilal Ayakdaş, Mehmet Alpergün, Selvanur Kıraç
Content of the meeting (briefly explain the agenda, decisions, work distributions, etc.)	

Annex – II

We checked the final version of the project. We fixed the some mistakes and prepared the report
