A3: System Models

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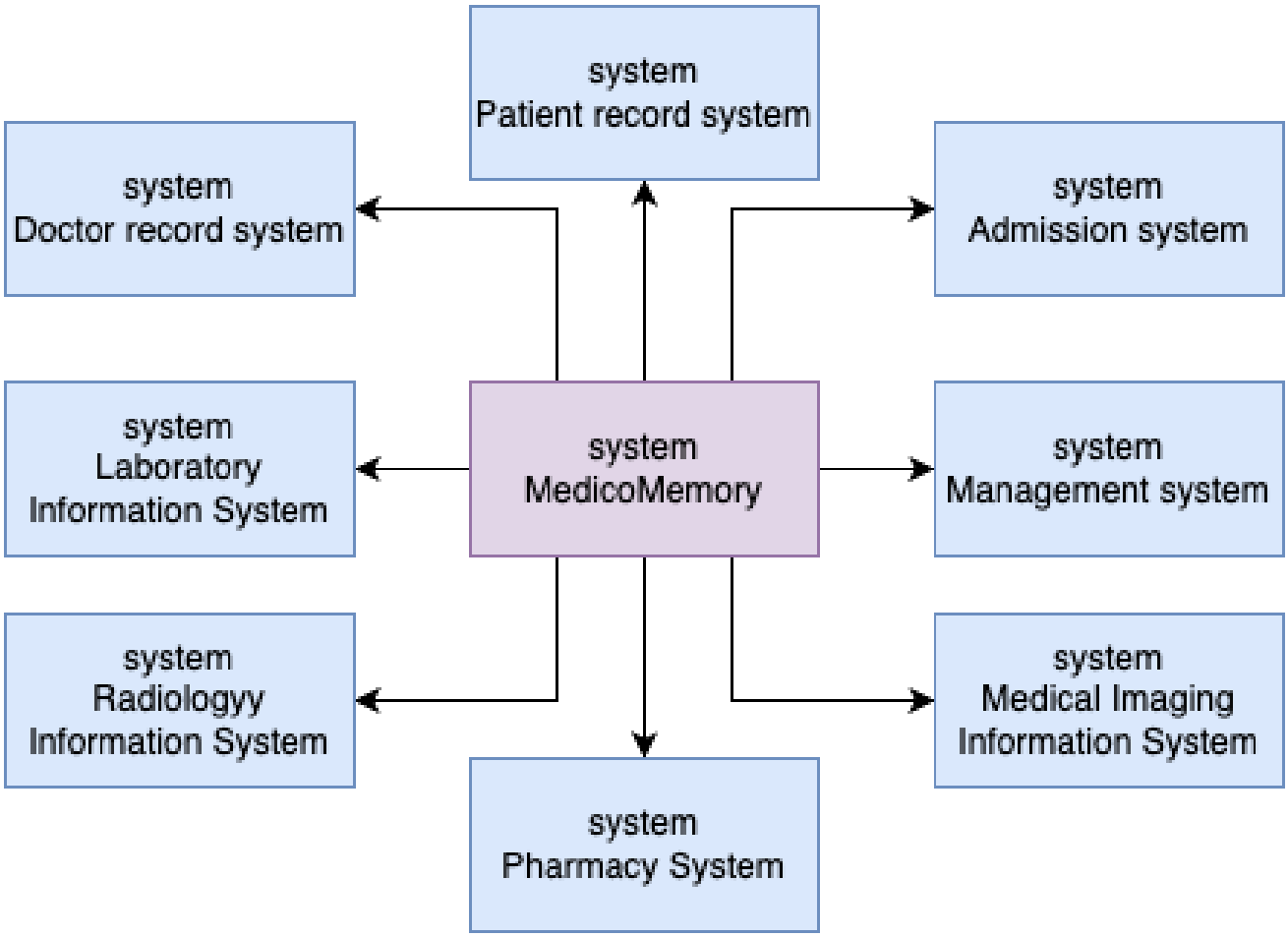
Introduction

In our project, MedicoMemory, we've developed a comprehensive system that ensures secure patient access to personal, hospital, and family history information while streamlining doctors' efficiency in managing patient details. This system seamlessly integrates with various external systems, including management, admission, patient records, doctor records, laboratory information, radiology, and pharmacy, offering a holistic approach. To enhance organisational clarity, we employ multiple models, such as context, sequence, use case, and activity models. The significance of system models is crucial across domains, simplifying the understanding of complex systems by breaking them down into manageable components. Acting as a common language for stakeholders, these models aid in effective communication and decision-making by simulating scenarios. They play a fundamental role in guiding efficient solutions during design and development, contributing to risk management optimisation, and serving as valuable documentation for system architecture and behaviour across diverse fields.

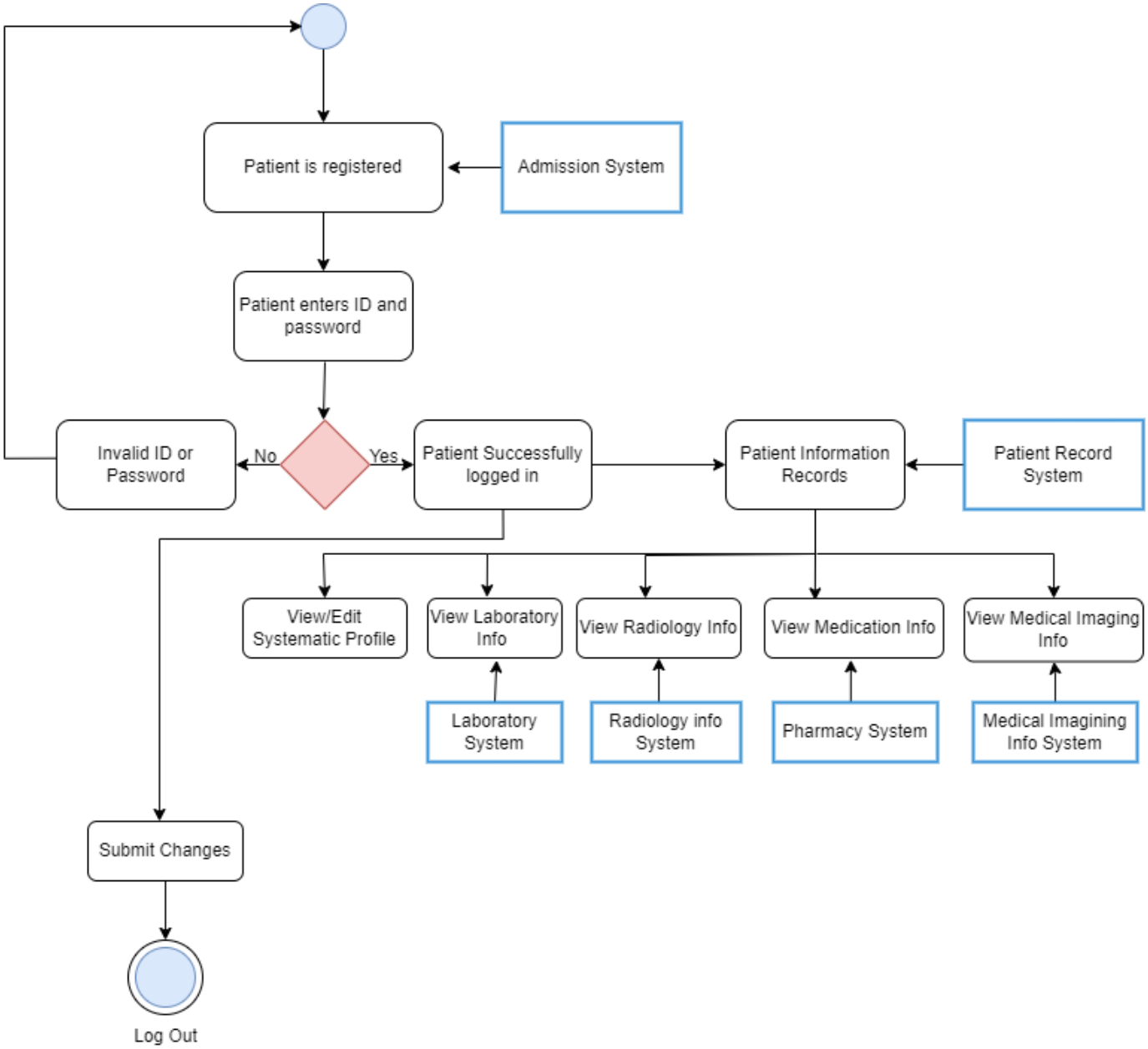
Team Designation

Our designated team leader is Sarah Alshumairyi; she divided the tasks among the team members and made sure that our work was efficient. Leen and Sara worked on the Activity Diagram and the Use-Case model. Ameera, Reema and Lujain worked on the Sequence Diagram, Context Model, documentation and references.

Context Model

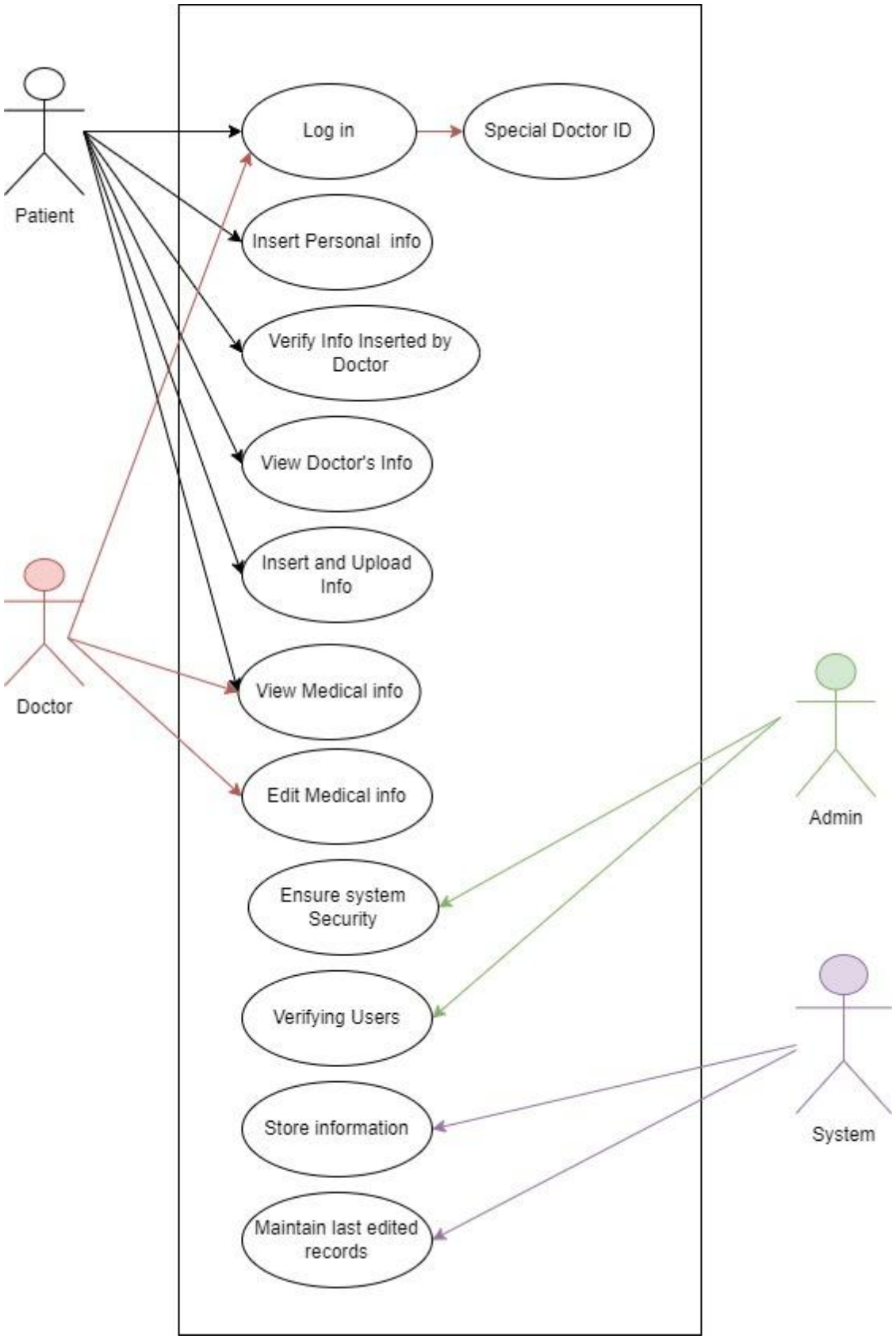


Activity Diagram

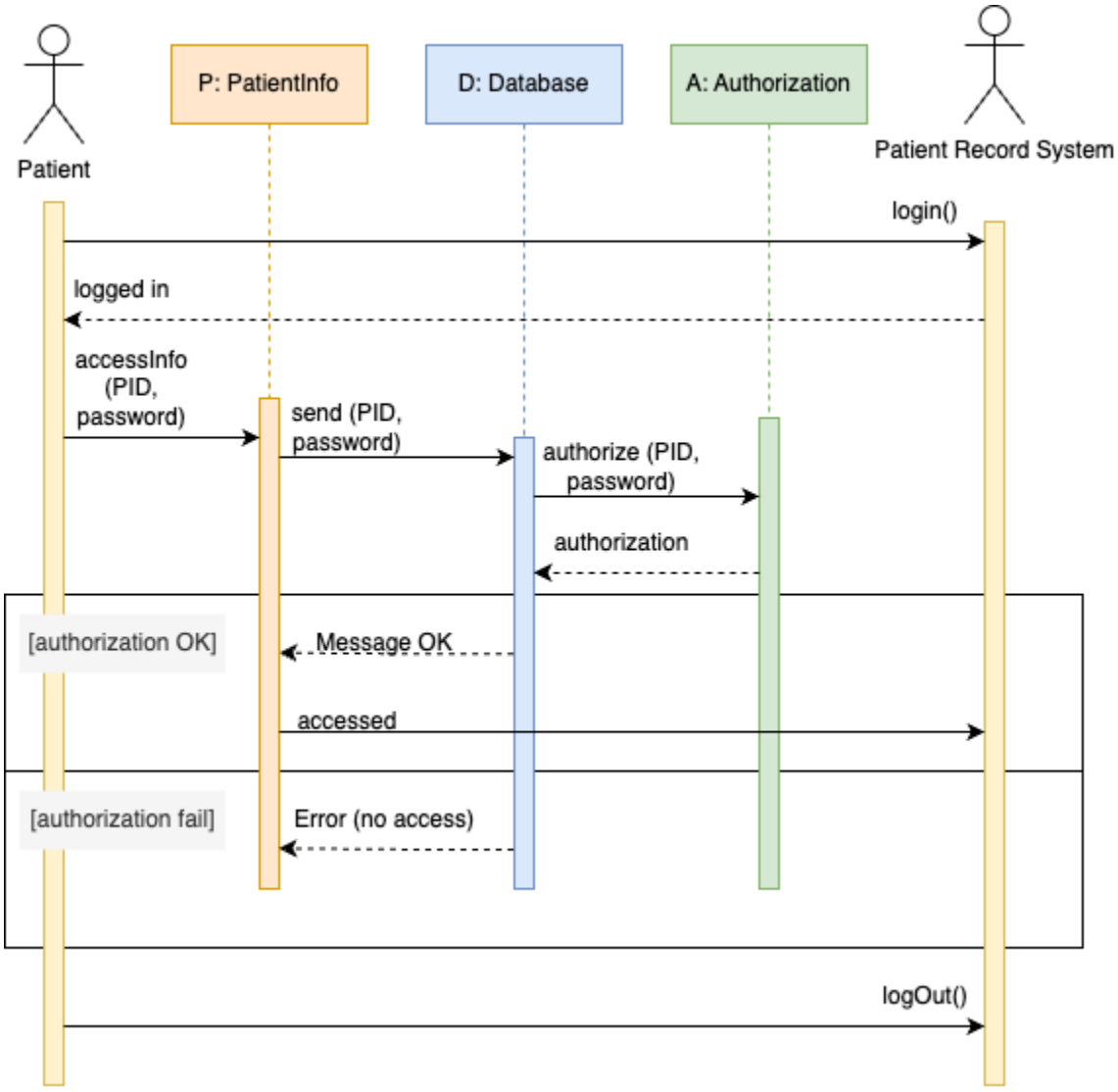


Use Case

Actors	Functionalities
Patient	1. Log in to the system.
	2. Insert personal information (name, DOB, address, etc.).
	3. View own medical information.
	4. Verify the information inserted by the doctor.
	5. View doctor's information (name, specialty, phone number, email).
Doctor	1. Log in to the patient's account with a special ID.
	2. Edit the medical information of the patient.
	3. Insert required medications for the patient.
	4. Upload documents of medical reports and imaging information.
Admin	1. Provide authentication and verification of patient accounts.
	2. Ensure system security.
System	1. Store all patient record information, including patient information, medications, laboratory, radiology/non-radiology info, etc.
	2. Maintain a record of the last edited name (doctor's name) when changes are made to the records.


Patient
Log in
Special Doctor ID
Insert Personal info
Verify Info Inserted by Doctor
View Doctor's Info
Insert and Upload Info
Doctor
View Medical info
Edit Medical info
Admin
Ensure system Security
Verifying Users
System
Store information
Maintain last edited records

Sequence Case



Conclusion

In conclusion, the significance of these diagrams in understanding, designing, and implementing our system cannot be overstated. They serve as invaluable tools that bridge the gap between conceptualisation and realisation, providing a visual roadmap for stakeholders involved in the project. These diagrams, whether contextual, sequential, use case or activity models, offer a shared language that enhances communication among team members. In the design phase, they guide decision-making, providing a comprehensive view of the system's architecture and functionality. During implementation, they act as a guiding framework, ensuring that the envisioned system is brought to life with clarity and precision. Ultimately, these diagrams are not just static representations; they are dynamic instruments that facilitate collaboration, mitigate risks, optimize processes, and lay the foundation for the successful development and deployment of our system.

References

https://www.researchgate.net/publication/320802075_SIGNIFICANCE_OF_SOFTWARE_DEVELOPMENT_MODELS