

CCS 3221 - Computing Fundamentals
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Hospitals Appointment Management System

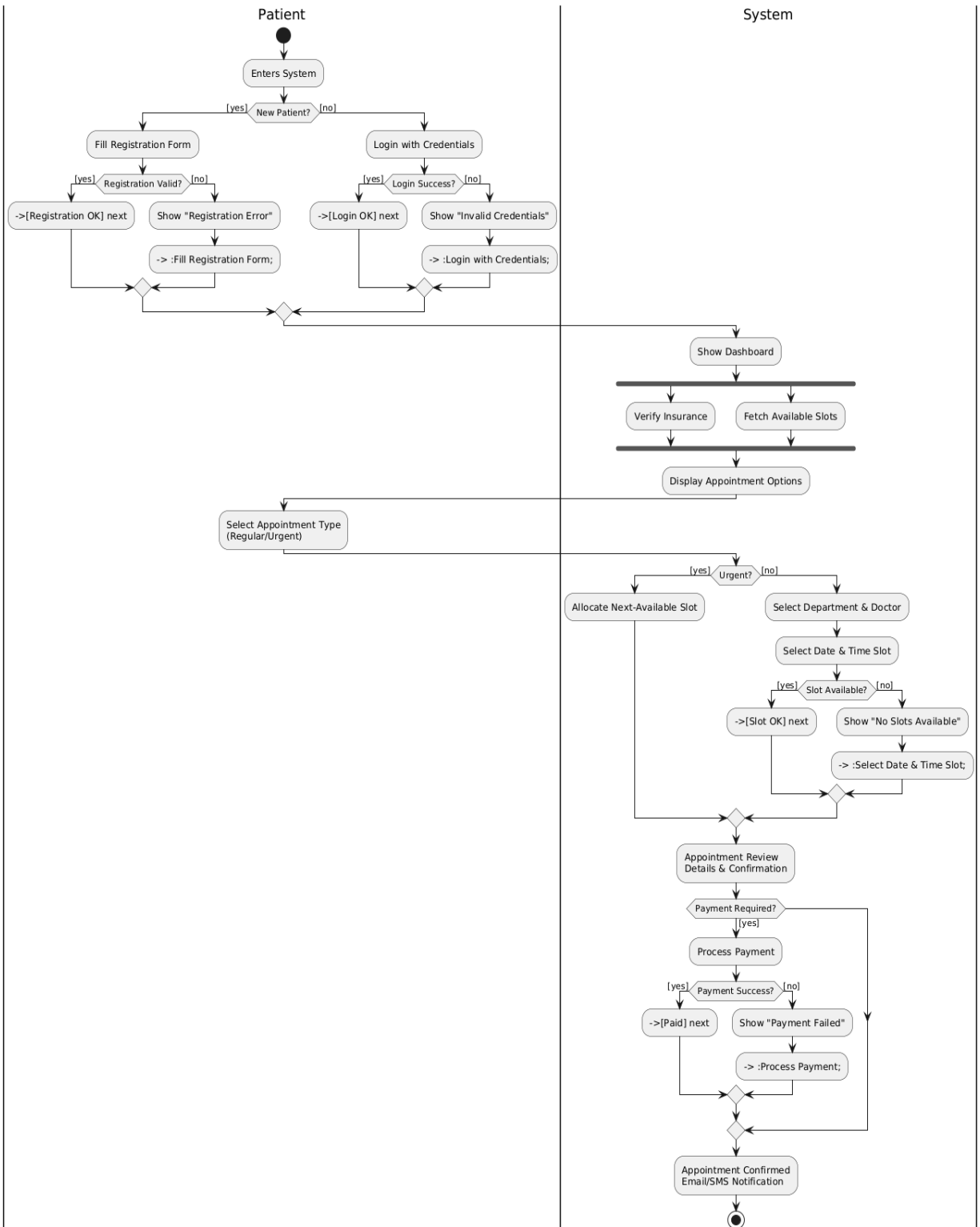


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The UML Diagram



Introduction

In these times we can do almost everything from the comfort of our home and the hospitals and health care systems are no exception, sometimes we find it hard to go to a hospital maybe because there isn't anyone to take us there or we are out of town and so on, thus an appointment management system will help both hospitals and patients to get better experience in their day-to-day life.

Today we will look at one of these systems, which would include a lot of cool and innovative ideas that we will hopefully be able to use in our future careers and projects.

Stakeholders

In this part we will take a look at who would be involved in such a system:

- **Patients:** arguably the most important user in this system, and the one that the system was made for to begin with.
- **Doctors:** in these system some times in may be unclear how the doctor will benefit from such a system, but I think the second most benefited user after the patient is the doctor, in traditional healthcare systems, doctors tends to have issues managing patients a lot of system have been placed to help with this but nothing beats a fully automated system to handle scheduling in way that works for both the doctor and the patient, not to mention that the doctors in these systems have their own dashboards from which they can upload their schedule, update information to the patient about his situation.
- **Front-desk Staff:** Having a system that can retrieve the information for the patient in front of you in seconds will bring incredible benefits, it will be easier to help patients around the hospitals and edit and manage their appointment even if the doctor was away or they needed to change doctors.

Importance & Benefits

It's better to think of a scenario that would help us comprehend how beneficial the system would be in real world applications.

We have Ahmed, he came to the hospitals to check for weird symptoms he've been feeling lately, he goes to the receptionist but here is the thing there is a long line of people waiting just to appoint, and all he wants to do is ask if a doctor is available for the specific part of the body that he feels the weird symptoms at, but as we saw the hospital is short-staffed.

He waits in line after 15 minutes his turn came up, he asks for a doctor luckily for him the doctor was available (or else the 15 minutes wait would be a waste of time), he makes the appointment, he checks his ticket number, it says 50, no worries maybe because the doctor was here for the hole day, goes to the clinic checks the current ticket number it says 25!

Now this entire interaction would've been solved in seconds if the hospital had an appointment management system, Ahmed would have been able to check if the doctor is available what time should he come for his turn and even communicate with staff in customer support if needed.

System Usage

The ways that the system is used can vary, depending on the role and purpose of each facility/organization.

Taking for example private health care facilities (clinics, hospitals, etc):

Ahmed, while he gets checked for weird symptoms as mentioned previously, is also handled in a specific order of flow by the hospital in order to ease operations.

Ahmed schedules an appointment via a website, app, or by. Upon arrival, Ahmed announces his arrival through either a self-service kiosk, app, or at a reception. Lastly, he waits to be served.

Another use of this system can be used for **Government healthcare institutions**, back when COVID-19 was spread around, The government of KSA had to take action to organize how citizens can take their vaccines efficiently without creating chaotic waiting queues.

And that's where the Sehhaty app came in handy, and Sehhaty is basically an application made by the government itself that helps in booking vaccine appointments.

Take a step healthcare through:

- Immediate consultations.
- Booking and reviewing appointments.
- Remote appointments.

System Necessity

Today's hospitals treat hundreds or thousands of patients every day, and without an effective system, scheduling appointments by hand causes confusion, delays, and discontent. A digital appointment management system is crucial for increasing patient trust, lowering human error, and streamlining operations.

Examples

Sehhaty App – Used by millions in KSA during the pandemic.

Mayo Clinic – Allows patients to book appointments and access medical records online.

King Faisal Specialist Hospital – Offers integrated patient portals with appointment management and follow-ups.

Islamic University's app - an integrated system within the University's application that helps ease booking appointments by basically booking through the app and attending on the given time.

Conclusion

Hospitals and patients benefit greatly from appointment management systems since they cut down on wait times, increase scheduling precision, and improve the patient experience in general. These kinds of solutions will be essential to providing effective, easily accessible, and patient-friendly care as the healthcare industry undergoes a digital transformation.

Resources

<https://www.qmatic.com/blog/appointment-systems-in-hospitals>

<https://helloyubo.com/the-role-of-appointment-management-in-hospital-systems/>

<https://www.moh.gov.sa/en/eServices/Sehhaty/Pages/default.aspx>