MediSync Solutions

EMR Scheduling System

Ali Akcin

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EMR Scheduling System

- Objective is to simplify and enhance efficiency in appointment booking in healthcare
- Streamlines scheduling process (eliminating phone calls and wait times)
- Patients have easy access to the available appointment schedule and their medical history
- Empower patients and medical professionals through technology to make healthcare more accessible, convenient, and efficient

Functional Requirements (Providers)

1. **Insert Appointment Slot:**

   Process-oriented

   2.1 Enable medical specialists to insert their available appointment time slots.

   2.2 Specify available time slots, dates, and specialization of the medical specialist for each available slot

1. **Modify Appointment Slot:**

   Process-oriented

   3.1 Provide functionality for medical specialists to modify existing appointment time slots.

   3.2 If the appointment has been taken, the patient will receive a notification for rescheduling.

1. **Delete Appointment Slot:**

   Process-oriented

   4.1 Enable medical specialists to delete their appointment time slots.

   4.2 Notify patients if appointments are canceled, providing reasons and options for rescheduling.

1. **Appointment Reminders:**

   Information-oriented

   5.1 Send appointment reminders to medical specialists 48 hours before scheduled appointments.

   5.2 Include relevant details such as time, date, and patient information.

1. **Insert Appointment Summary:**

   Process-oriented & Information-oriented

   6.1 Allow medical specialists to provide appointment summaries after scheduled appointments.

   6.2 Ensure visibility to both medical providers and patients for medical history reference

1. **Appointment Prioritization:**

   Process-oriented

   7.1 The EMR system applies an automated prioritization algorithm to evaluate the urgency of the patient.

   7.2 The EMR system generates priority assessments for patients with the most critical condition.

Functional Requirements (Patients)

1. **Create Patient Profile:**

   Process-oriented

   7.1 Allow patients to register and create their accounts.

   7.2 Capture essential details such as name, contact information, and medical history during profile creation.

1. **Schedule Appointments:**

   Process-oriented

   8.1 Enable patients to schedule appointments with medical specialists.

   8.2 Provide options to filter open appointment slots based on the department or specialization needed.

1. **Appointment Cancelation:**

   Process-oriented

   9.1 Allow patients to cancel their appointments as needed.

   9.2 Notify medical specialists about the cancellation and the reasons for it.

   9.3 Provide patients with options for rescheduling.

1. **Appointment Reminders:**

   Information-oriented

   10.1 Send appointment reminders to patients 48 hours before scheduled appointments.

   10.2 Include relevant details such as time, date, and medical specialist information in the reminder.

1. **Access to Medical History:**

   Information-oriented

   11.1 Allow patients to access appointment summaries provided by medical specialists after scheduled appointments.

   11. 2 Allow patients to overview their past appointments, and medical history.

   Virtual Waiting System:

1. **Process-oriented & information-oriented:**

   12.1 Implement a virtual waiting system for patients to check-in remotely before their scheduled appointments.

   12.2 Display real-time queue status, indicating the estimated wait time and their position in the queue.

   12.3 Provide patients with health-related news, tips, and updates while they wait.

Acquisition Strategy

Hybrid Approach Overview:

Custom Development: Building critical components such as patient account creation, appointment scheduling, and reminder functionalities in-house.

Outsourcing: Leveraging external expertise for non-core functionalities like the virtual waiting system, ensuring efficiency and cost-effectiveness.

Reasons for Choosing Hybrid Approach:

Flexibility: By blending custom development and outsourcing, we attain flexibility to tailor patient-centric features while efficiently managing non-core tasks.

Risk Mitigation: Diversifying resources through a hybrid model mitigates risks associated with development challenges, ensuring continuity in service delivery.

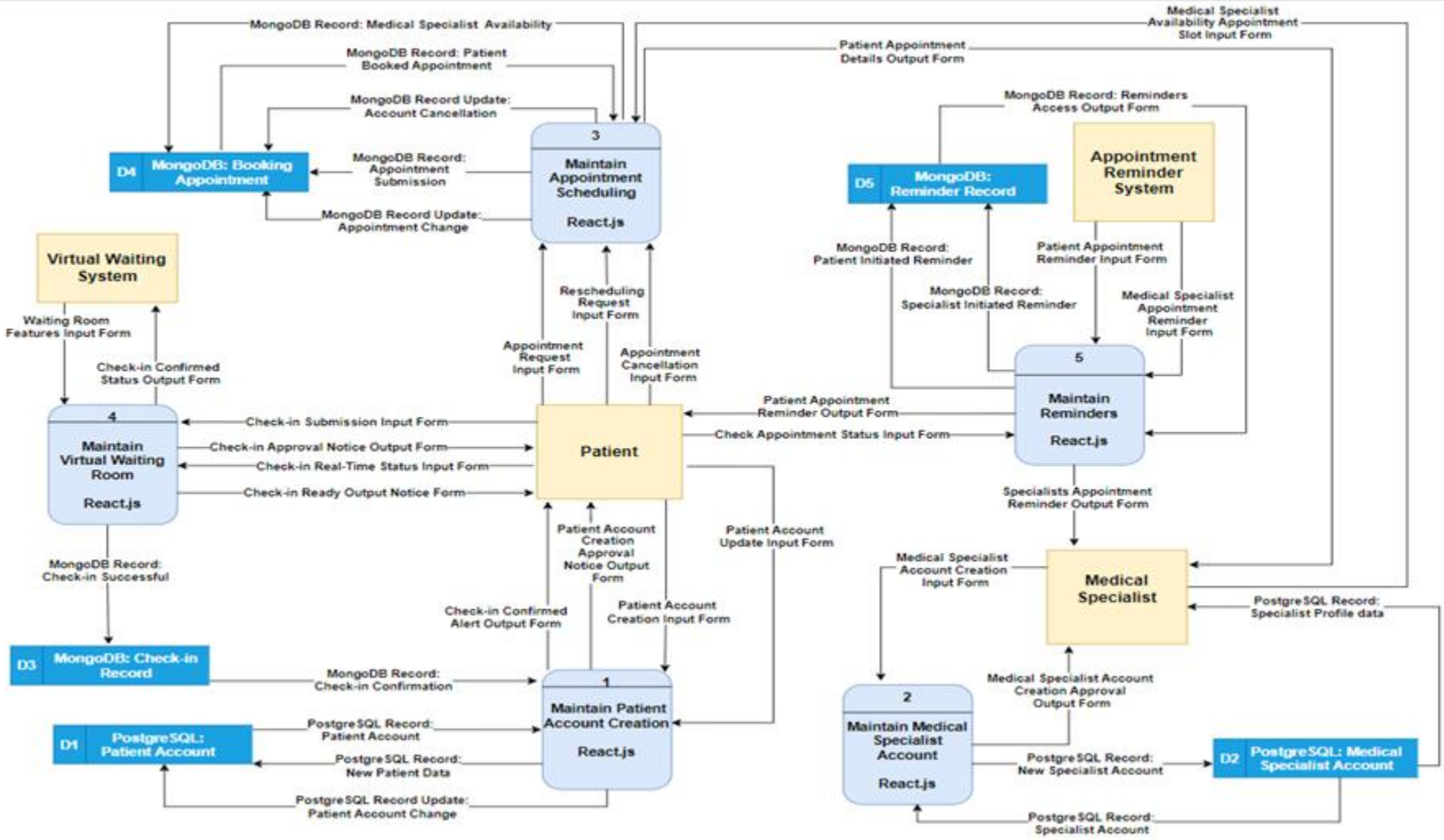
Cost Efficiency: Outsourcing non-core functionalities helps control costs, optimizing resource allocation while maintaining focus on critical aspects of the project.

Adaptability: The hybrid approach allows us to adapt to evolving requirements or circumstances, ensuring our system remains agile and responsive to user needs.

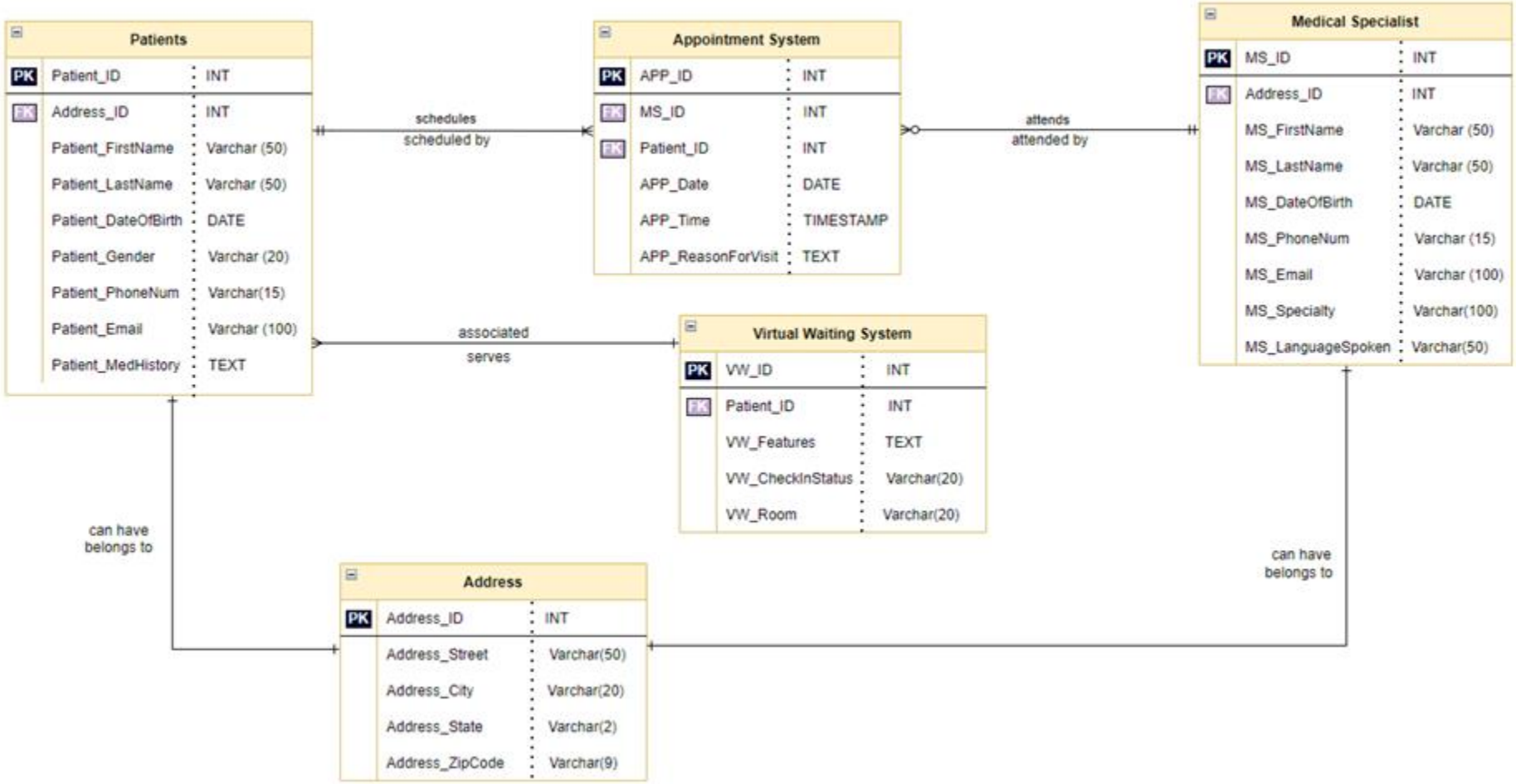
Compliance and Security: Custom development enables us to implement robust security measures tailored to healthcare standards, ensuring data privacy and regulatory compliance.

In summary, the hybrid acquisition strategy combines the benefits of custom development and outsourcing, providing the flexibility, risk mitigation, cost efficiency, adaptability, and security necessary for the success of our healthcare project.

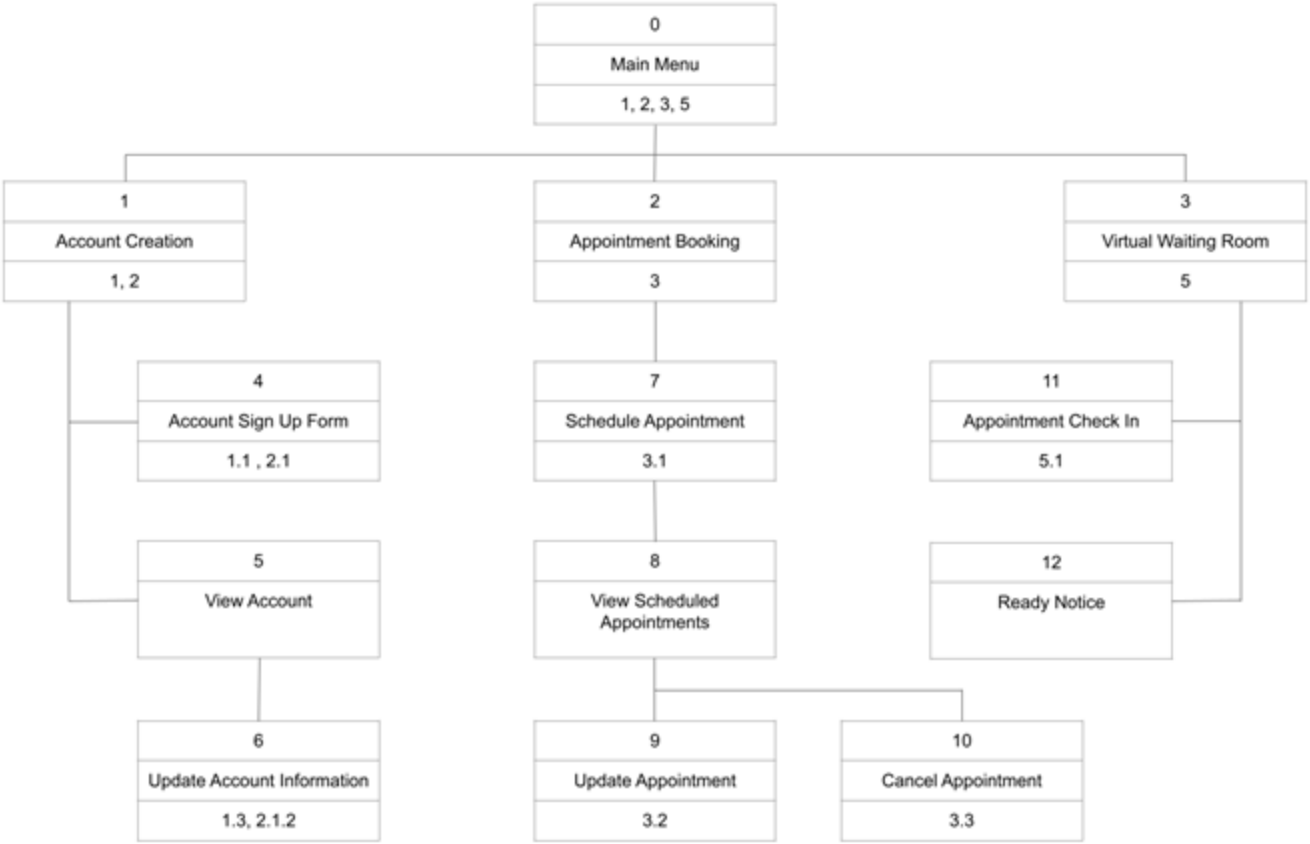
The Physical Level 0 Diagram



The Physical ERD



Interface Structure Design



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Virtual Waiting Room

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Fill out each box to create your account.

First Name | Last Name | Date of Birth | Phone Number

MM/DD/YYYY | (___) - ___ - ____

Email Address | Mailing Address

Medical History | Password (requires 8+ characters and 1+ numbers)

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Account Information

First Name: Bob

Last Name: Smith

Date of Birth: 05/06/2000

Phone Number: (123) 456 - 7890

Email Address: bobsmith@email.com

Mailing Address: 123 Smith Lane Baltimore, Maryland 21210

View Medical History

Upcoming Appointments

Monday May 13th, 2024 10 AM - 11 AM
with Dr. Jeff

Thursday June 24th, 2024 2 PM - 3 PM
with Dr. Susan

Virtual Waiting Room

✏️- update information

❌- cancel appointment

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Project Reflection

Problems

-The project scope was large, so I concentrated on developing the scheduling component.

-Managing time effectively was challenging given the amount of work involved.

-Maintaining thorough documentation throughout development required consistent effort.

What I learned

-Developing the scheduling EMR system provided valuable insight into real-world healthcare challenges.

-The Software Development Life Cycle highlighted the importance of careful planning and iterative feedback during development.

Thank you for your time!