

HEALTH-SQUAD DB SYSTEM

MSIS 661 Information Architecture

Group 3

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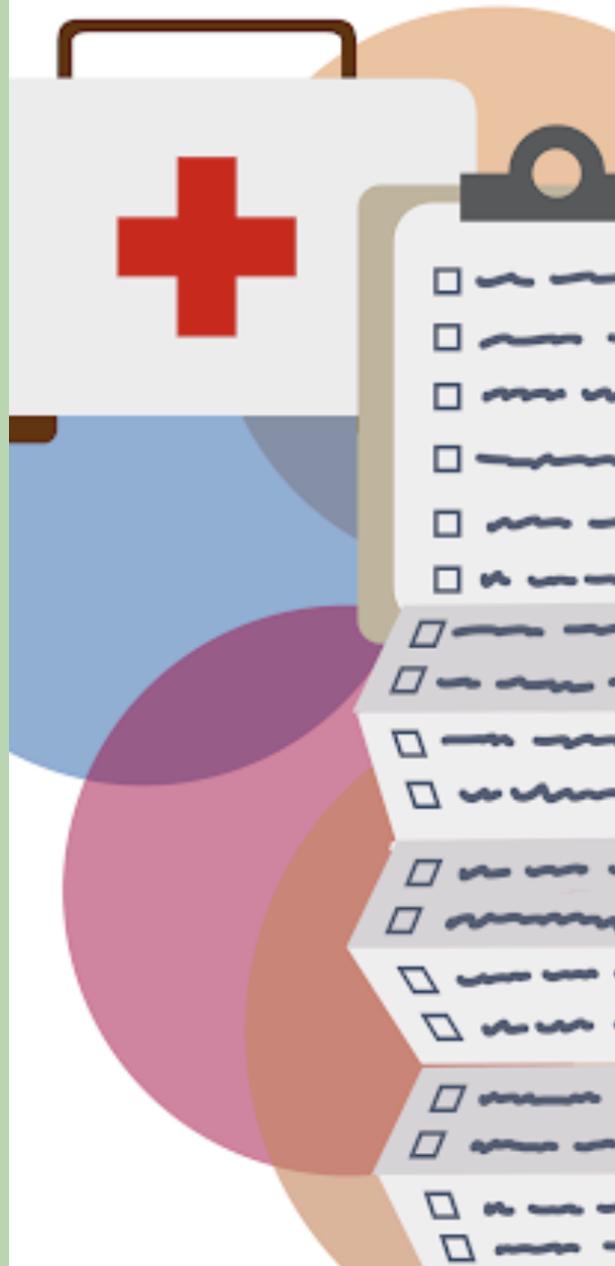
AGENDA

- 1 Problem Statement
- 2 System Goals
- 3 DB Process
- 4 DML Demo
- 5 User Interface
- 6 Learning Outcomes

PROBLEM STATEMENT

- 1 Missing appointments
- 2 Mismatching diagnosis data records
- 3 Missing diagnosis records

Reports from **Referral MD** shows that , “3 out of every 10 tests are re-ordered because results are not found”
- 4 Missing Patient's chart on doctor visit
- 5 Accessing of records by patient is not user friendly and not secure



SYSTEM GOALS

- 1 Efficient appointment booking system fully online
- 2 Store diagnosis records using unique identifier
- 3 Diagnosis records easily accessible online to patient and physician
- 4 Enhanced user experience for patients and physicians
- 5 Healthcare matching option for patients based on their locality





DATABASE DESIGN

The main phases that created our database design and their roles in the design



1. Conceptual design



2. Logical Design



3. Normalization



4. Physical Design

ENTITIES OF OUR DATABASE MODEL



Healthcare Facility



Physician



Patient



Appointment



Test Order



Screening Test



Diagnosis

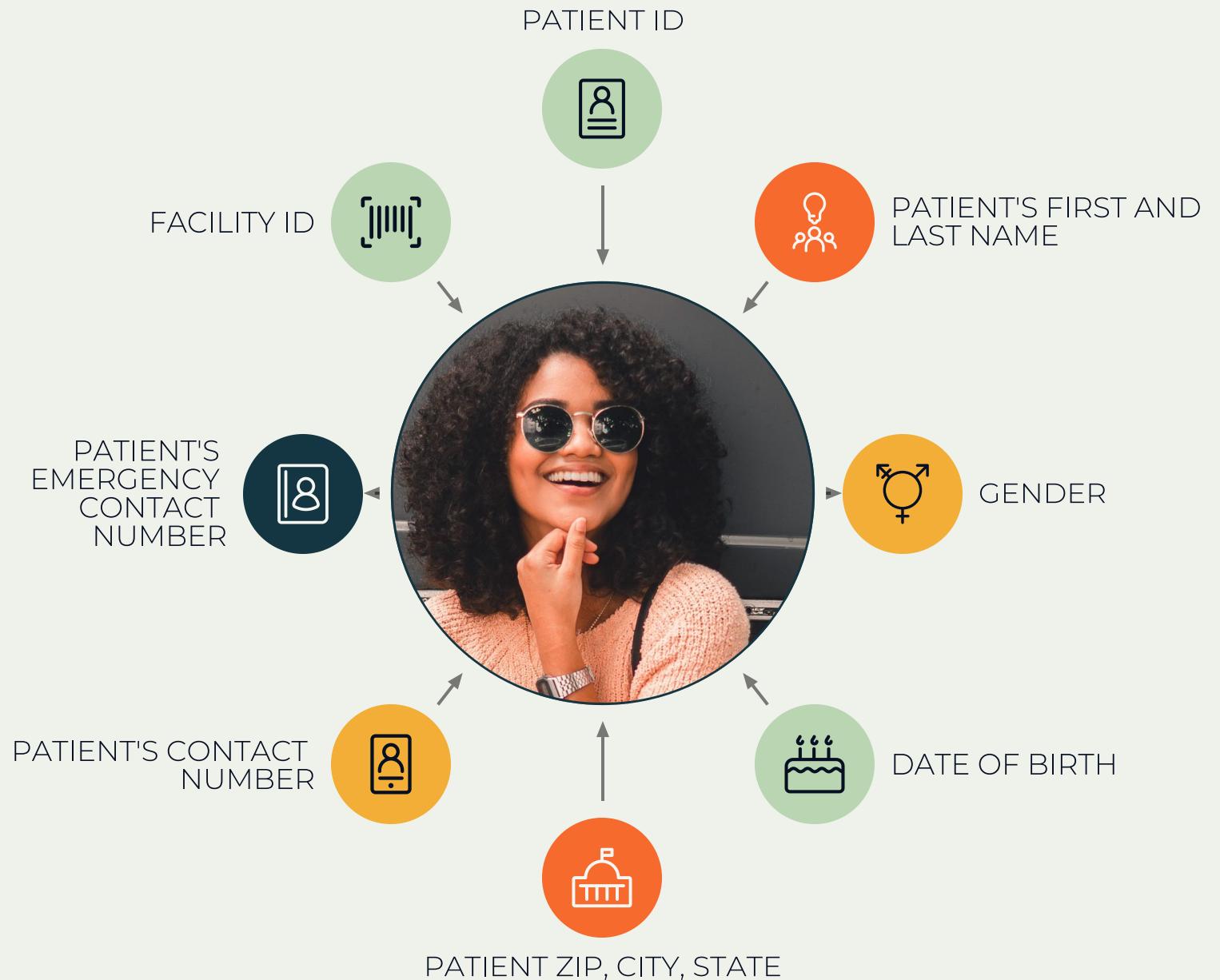


Diagnosis Record

HEALTHCARE FACILITY



PATIENT



PHYSICIAN





BUSINESS RULES

Each **HEALTHCARE_FACILITY** can have one or many **PATIENTs**

Each **PATIENT** can go to one **HEALTHCARE_FACILITY**

Each **HEALTCHARE_FACILITY** can have one or many **PHYSICIANS**

Each **PHYSICIAN** can belong to one and only one **HEALTHCARE_FACILITY**

An **APPOINTMENT** can have one and only one **PATIENT**

Each **PATIENT** can have one or many **APPOINTMENTS**

An **APPOINTMENT** can have one and only one **PHYSICIAN**

Each **PHYSICIAN** can have one or many **APPOINTMENTS**



BUSINESS RULES

Each **PHYSICIAN** can order one or many **TEST_ORDERs**

Each **TEST_ORDER** can be ordered by one and only one **PHYSICIAN**

A **SCREENING_TEST** belongs to one and only one **TEST_ORDER**

A **TEST_ORDER** can have one or many **SCREENING_TESTS**

Each **DIAGNOSIS** can have one or many **SCREENING_TESTS**

A **SCREENING_TEST** belongs to one and only one **DIAGNOSIS**

An **APPOINTMENT** can have one or many **SCREENING_TESTS**

Each **SCREENING_TEST** can belong to one and only one **APPOINTMENT**

BUSINESS RULES



Each **PATIENT** has one or many **DIAGNOSIS_RECORDs**

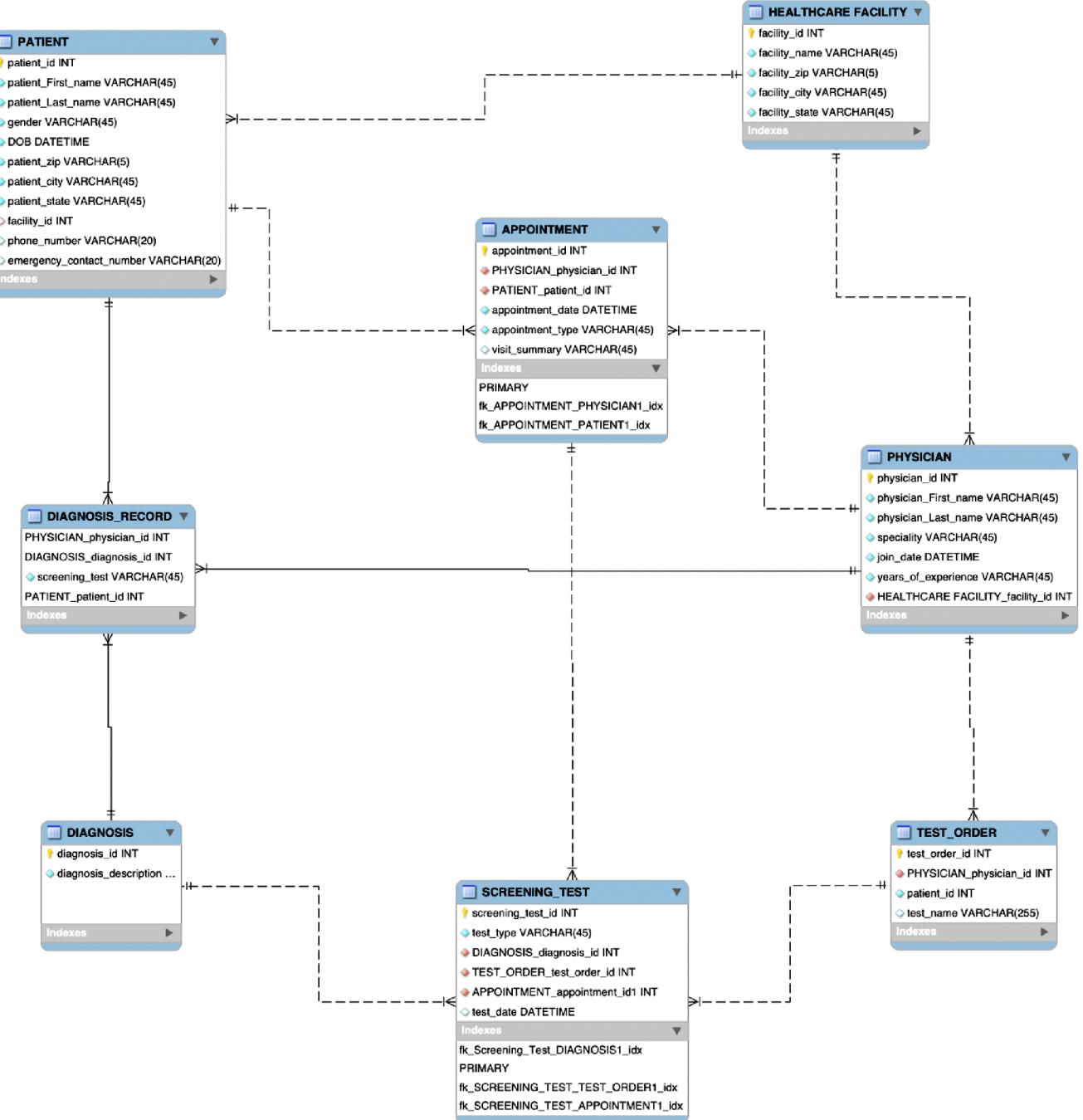
A **DIAGNOSIS_RECORD** belongs to one and only one **PATIENT**

Each **DIAGNOSIS** has one or many **DIAGNOSIS_RECORDs**

A **DIAGNOSIS_RECORD** belongs to one and only one **DIAGNOSIS**

A **PHYSICIAN** updates one or many **DIAGNOSIS_RECORDs**

DIAGNOSIS_RECORD is updated by one and only one **PHYSICIAN**



LOGICAL DATABASE DESIGNING

DDL

CREATE TABLES PHYSICAL MODEL

DML

CREATE
INSERT
UPDATE
MERGE
DELETE

DQL

SELECT

WELCOME TO THE HOMEPAGE

E-Hospital

Your luxury journey
begins here



Patient Login

patient id *

pwd *

Login

Add New

Physician Login

physician id *

pwd *

Login

Add New

Patient Menu

1
Search
Healthcare
Facility

2
Choose The
Physician

3
Make The
Appointment

4
Diagnosis
Record

5
Managing
Appointment

PATIENT LOGIN

Healthcare Facility Only For
You

Search the matching one

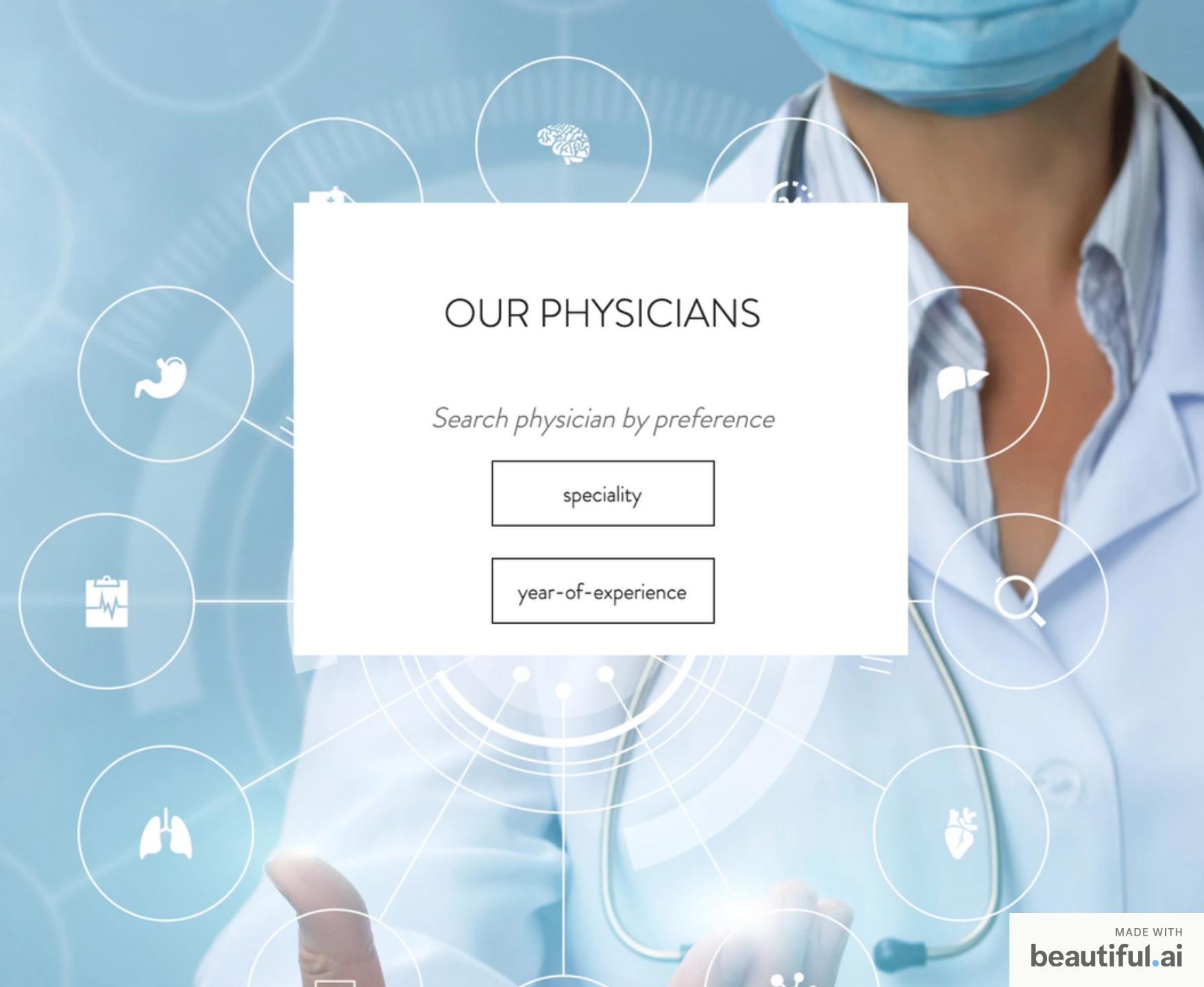
city

state

zip

• • •

CHOOSE THE PHYSICIAN



EXAMPLE

Jake Paul

physician_id: 1001001

speciality: Dermatology

year of experience: 10 years

Get an Appoinment

Justin Levi

physician_id: 1001002

speciality: Pediatrics

year of experience: 10 years

Get an Appointment



Bob Mendes

physician_id: 1001007

speciality: Neurology

year of experience: 10 years

Get an Appointment

June 2021						
Su	Mo	Tu	We	Th	Fr	Sa
30	31	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			
July 2021						
Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31
August 2021						
Su	Mo	Tu	We	Th	Fr	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

DEMO	3/7/2021	3/8/2021	3/9/2021	3/10/2021	3/11/2021	3/12/2021	3/13/2021
12 AM							
1 AM							
2 AM							
3 AM							
4 AM							
5 AM							
6 AM							
7 AM							
8 AM							

Physician Menu

01
Appointment
Assigned

02
Diagnosis Record

03
Screening Test
Order

Search patient id

Appointment Assigned



Appointment ID



Appointment Date

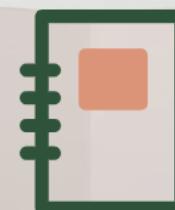


Appointment Type



Patient Profile

- *patient id*
- *patient first name*
- *patient last name*
- *contact information*



Visit Summary

Screening Tests Order



Test Order ID



Test Date



Test Type



Patient Profile

- *patient id*
- *patient first name*
- *patient last name*
- *contact information*

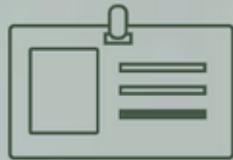


Physician Ordered

- *physician id*
- *physician first name*
- *physician name*
- *contact information*

- *PPD*
- *Viral Fever test*
- *Pap test*

Diagnosis Record



Diagnosis ID



Other Diagnosis



Screening Test Result



Patient Profile

- *patient id*
- *patient first name*
- *patient last name*
- *contact information*

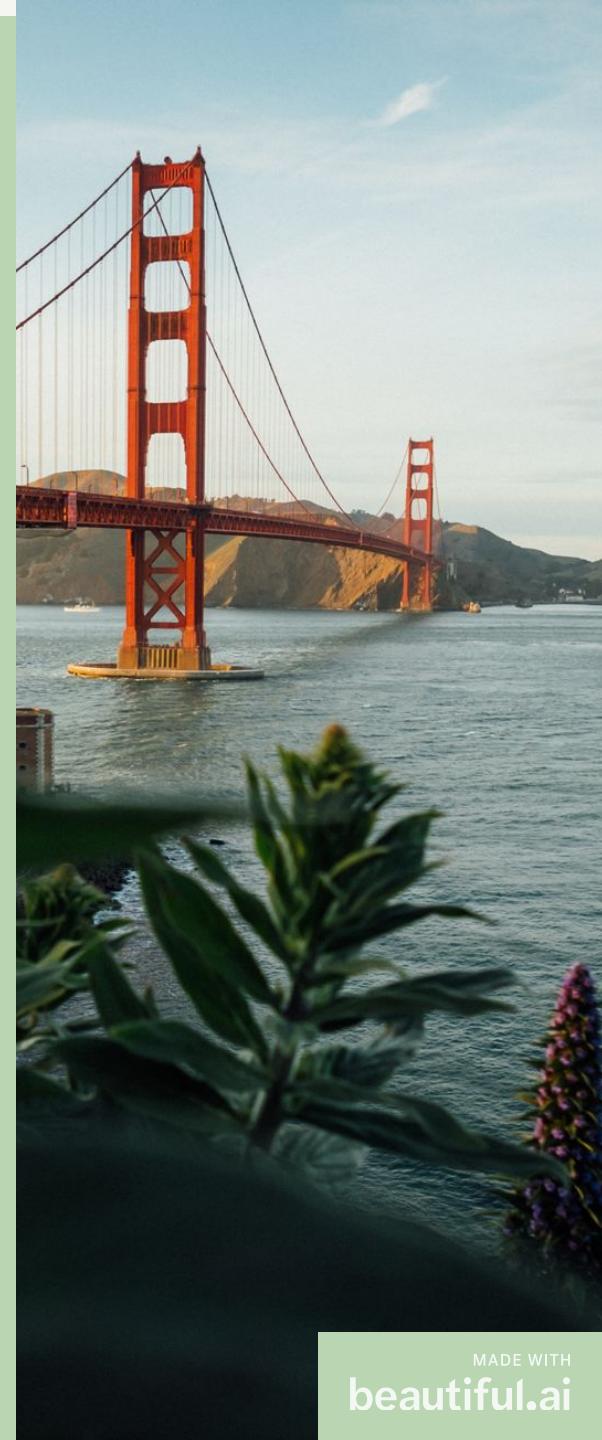


Physician Profile

- *physician id*
- *physician first name*
- *physician name*
- *contact information*

NEXT STEP

- 1 Synchronize medical record to larger E-Hospital system
- 2 Add sensor equipment- virtual visiting & tracking



LEARNING OUTCOMES

- Fix errors at the ERD level
- Suitable data types
- Balancing real world scenarios and schema
- Normalization
- Database accessibility
- Navigating MySQL Workbench
- Debugging issues when populating database
- SQL queries

REFERENCES

ReferralMD. 30 Healthcare Statistics That Keep Hospital Executives Up At Night. Retrieved February 01, 2021, from
<https://getreferralmd.com/2016/08/30-healthcare-statistics-keep-hospital-executives-night/>



THANK YOU

Questions?