

Mental Health Diagnosis and Treatment

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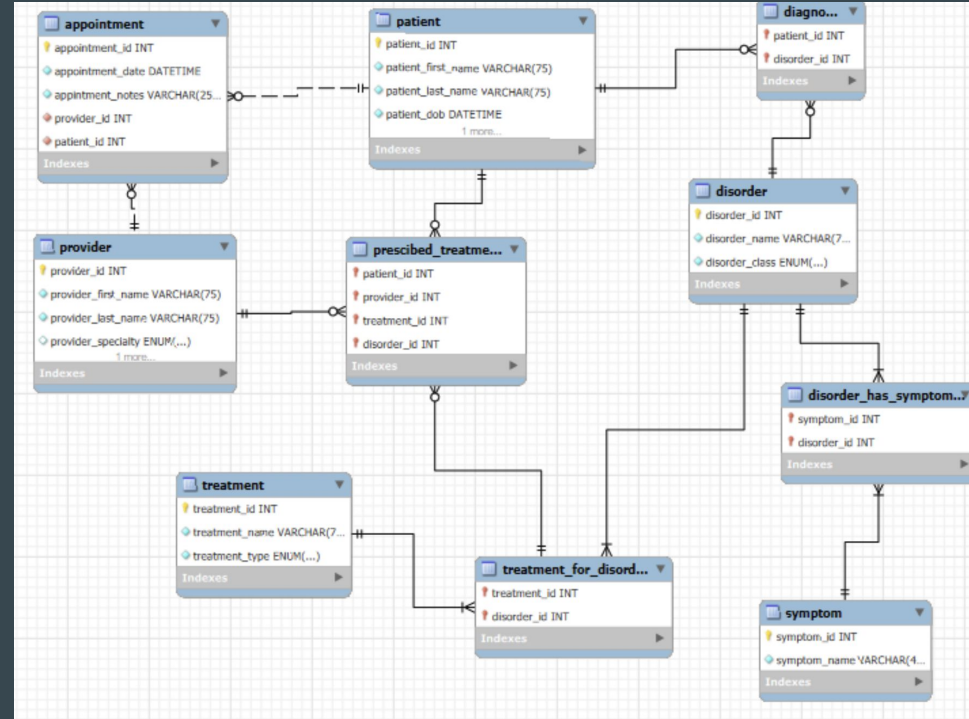
Introduction

- Our project aims to address the growing need for organized, accessible, and comprehensive data management in mental health care.
- By developing a relational database, our goal is to streamline the tracking of patients, providers, diagnoses, symptoms, and treatments, enabling better care delivery and more informed decision-making.



Database Design

- Disorders, patients, providers, treatments, appointments
- Several intermediary many-to-many tables with composite primary keys
- Enums for classes of things like disorder types, treatment types, to prevent duplication or misspelling



Queries

- Our queries allowed user specific utility, as well as broader analytics, querying across all tables of the database

```
-- what disorders might a patient with symptom: "Loss of Interest" have?
• select
  disorder_name
from disorder
join disorder_has_symptom on disorder.disorder_id = disorder_has_symptom.disorder_id
join symptom on disorder_has_symptom.symptom_id = symptom.symptom_id
where symptom.symptom_id = 8;

-- what treatments are available for someone with MDD?
• select
  treatment_name,
  treatment_type
from disorder
join treatment_for_disorder on disorder.disorder_id = treatment_for_disorder.disorder_id
join treatment on treatment_for_disorder.treatment_id = treatment.treatment_id
where disorder.disorder_id = 2;

-- is there an association between disorder class and treatment type?
select
  disorder_class,
  treatment_type,
  count(*)
from disorder
join treatment_for_disorder on disorder.disorder_id = treatment_for_disorder.disorder_id
join treatment on treatment_for_disorder.treatment_id = treatment.treatment_id
group by disorder_class, treatment_type;
```

	disorder_name
▶	Major Depressive Disorder
	Post-Traumatic Stress Disorder

	treatment_name	treatment_type
▶	SSRI	Pharmaceutical
	Cognitive Behavioral Therapy	Therapy

	disorder_class	treatment_type	count(*)
▶	Mood	Pharmaceutical	2
	Anxiety	Therapy	3
	Mood	Therapy	1
	Trauma	Therapy	2

- Additionally, covered scheduling and appointments, finding doctors for patients, and other uses

Stored Procedure - Screening and Appointment Scheduling

The stored procedure, **screening** takes in parameters of the patient's first and last name, the symptom, and an appointment date.

- The procedure finds the optimal provider for the patient based on symptoms.
- Checks if the provider is suited for the patient's age.
- Redirects based on check.
- Inputs appointment notes based on screening results.
- Creates appointment with the selected provider.



Trigger - Update Patient Record and Appointment Notes

After a diagnosis has been made by a provider, the trigger will update the patient's `is_diagnosed` to **TRUE** to show the new diagnosis. Then the appointment notes will be updated for the patient and providers' usage, as they will now show what was diagnosed at the appointment.

The trigger enacts once a row has been updated by the insert statement on the diagnosis table.



Conclusion

- Results:
 - The database successfully establishes comprehensive relationships among patients, providers, disorders, symptoms, treatments, and appointments.
 - The linkage of treatments to disorders and symptoms facilitates a framework for personalized care.
 - The database efficiently maps specific symptoms to their associated disorders.
- Significance:
 - For Providers: Allows for streamlined workflows, enhanced diagnosis accuracy, and improved treatment recommendations.
 - For Patients: Allows for better care coordination and individualized treatment plans.
 - For Research: Creates foundation for analyzing trends and advancing mental health care practices.
- Limitations:
 - We had no mechanism to track progress or treatment effectiveness.
 - We did not have any mechanism to account for changes to treatment, symptoms, or provider specialty.