

UNIVERSITY OF ASIA PACIFIC
DEPARTMENT OF CSE
LAB REPORT

COURSE TITLE: DATABASE SYSTEMS LAB

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ABSTRACT

This report presents the development of the Mental Health Portal, a database system designed to provide students with secure, anonymous, and accessible mental health support. The system organizes information on students, counselors, sessions, evaluations, and institutional programs through a well-structured and normalized relational model. Built using SQL and guided by ER design principles, the database ensures data integrity, reduced redundancy, and efficient retrieval. The implementation demonstrates how a streamlined database can effectively support real-world mental health workflows, confidential communication, and informed decision-making within academic environments.

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PROJECT DESCRIPTION

Mental health challenges among students are increasingly prevalent due to academic pressures, personal struggles, and social expectations. Many students, however, hesitate to seek help because of fear, stigma, or financial constraints. The **Mental Health Portal** addresses this gap by providing a secure, anonymous, and accessible platform where students can receive psychological support without exposing their identity.

OBJECTIVES

- Provide an anonymous mental health support system for students.
- Connect students with certified counselors for private therapy sessions.
- Track student progress, session history, and evaluations to monitor improvements.
- Offer discounts or rewards for consistent engagement, funded by NGOs and institutions.
- Promote awareness through organized community programs and workshops.

SCOPE & FUNCTIONALITY

The **Mental Health Portal** is a database-driven system offering students confidential, accessible, and affordable psychological support. Each student receives a unique anonymous ID, enabling private access to counselors, therapy sessions, progress tracking, and post-session evaluations. The portal supports structured care, encourages long-term engagement through discounts and rewards, and hosts awareness programs run by institutions and NGOs to promote mental health literacy. A funding module connects universities with external organizations, keeping

services financially accessible. Overall, the platform provides a secure environment for scheduling sessions, monitoring improvement, receiving professional guidance, and participating in wellness initiatives—all while maintaining privacy and institutional support.

TABLES & ENTITIES

1. Counselor

Stores counselor details and availability.

Counselor	
Counselor_ID	VARCHAR(10) (PK)
Counselor_Name	VARCHAR(100)
Qualifications	VARCHAR(100)
Specialisation	VARCHAR(100)
Contact	VARCHAR(20)
Availability	VARCHAR(50)
Email	VARCHAR(50)

➤ **Attributes:**

- Counselor_Id (Primary Key)
- Name
- Qualification
- Specialisation
- Contact
- Email
- Availability

2. Patient

Stores student/patient information and mental health conditions.

Patient (Student)	
Patient_ID	VARCHAR(10) (PK)
Gender	VARCHAR(10)
Institution_ID	VARCHAR(10) (FK)
Age	INT
MentalHealthCondition	VARCHAR(100)

➤ **Attributes:**

- PatientID (Primary Key)
- InstitutionID
- Gender
- Age
- MentalHealthCondition

3. TherapySession

Records therapy session details and progress.

Therapy_Session	
Session_ID	VARCHAR(10) (PK)
Patient_ID	VARCHAR(10) (FK)
Counselor_ID	VARCHAR(10) (FK)
Session_Date	DATE
Session_Type	VARCHAR(50)
Notes	TEXT
Progress_Status	VARCHAR(50)

➤ **Attributes:**

- SessionID (Primary Key)
- PatientID (Foreign Key)
- CounselorID (Foreign Key)
- SessionDate
- SessionType
- Notes
- ProgressStatus

4. NGO

Stores NGO information and focus areas.

NGO	
NGO_ID	VARCHAR(10) (PK)
NGO_Name	VARCHAR(100)
Focus_Area	VARCHAR(100)
Location	VARCHAR(100)
Contact	VARCHAR(20)

➤ Attributes:

- NGO_ID (Primary Key)
- NGO_NAME
- Focus_Area
- Location
- Contact

5. Institution

Stores institution details and funding contributions.

Institution	
Institution_ID	VARCHAR(10) (PK)
Institution_Name	VARCHAR(100)
Location	VARCHAR(100)
Contact	VARCHAR(20)
Funding_Amount	DECIMAL(10,2)

➤ Attributes:

- Institution_ID (Primary Key)
- Institution_Name
- Location
- Contact
- Funding_Amount

6. Funding

Tracks funding transactions from NGOs to institutions.

Funding	
Funding_ID	VARCHAR(10) (PK)
Institution_ID	VARCHAR(10) (FK)
NGO_ID	VARCHAR(10) (FK)
Amount	DECIMAL(10,2)
Funding_Date	DATE

➤ Attributes:

- Funding_ID (Primary Key)
- Institution_ID (Foreign Key)
- NGO_ID (Foreign Key)
- Amount
- Funding_Date

7. EvaluationForm

Stores feedback and ratings for patients

EvaluationForm	
Evaluation_ID	VARCHAR(10) (PK)
Patient_ID	VARCHAR(10) (FK)
Rating	INT – 1–5 scale
Comments	TEXT

➤ **Attributes:**

- Evaluation_ID (Primary Key)
- Patient_ID (Foreign Key)
- Rating
- Comments

8. Progress

Tracks patient progress and discount eligibility.

Progress	
Progress_ID	VARCHAR(10) (PK)
Patient_ID	VARCHAR(10) (FK)
Progress_Score	DECIMAL(5,2)
Last_Update	DATE
Discount_Eligible	VARCHAR(20)

➤ **Attributes:**

- Progress_ID (Primary Key)
- Patient_ID (Foreign Key)
- Progress_Score
- Last_Update
- Discount_Eligible

9. AwarenessProgram

Stores information about mental health awareness events.

AwarenessProgram	
Event_ID	VARCHAR(10) (PK)
Event_Name	VARCHAR(100)
Event_Location	VARCHAR(100)
Target_Audience	VARCHAR(100)
Counsellor_ID	VARCHAR(10)(FK)
NGO_ID	VARCHAR(10)(FK)

➤ **Attributes:**

- Event_ID (Primary Key)
- Event_Name
- Event_Location
- Target_Audience
- Counselor_ID (Foreign Key)
- NGO_ID (Foreign Key)

RELATION BETWEEN ENTITIES

1. Student – Session:

- **Relationship:** Session
- **Cardinality:** 1 student → many sessions(1:M)
- **Description:** A student can attend multiple counseling sessions.

2. Counselor – Session:

- **Relationship:** Session
- **Cardinality:** 1 counselor → many sessions(1:M)
- **Description:** A counselor can conduct multiple sessions with different students.

3. Student – ProgressReport:

- **Relationship:** Records Progress
- **Cardinality:** 1 Student → 1 progress reports(1:1)
- **Description:** Each session can have progress reports for the student.

4. Student – Institution:

- **Relationship:** Attends
- **Cardinality:** Many students → 1 institution (1:M)
- **Description:** Each student is associated with an institution.

5. Student – Evaluation:

- **Relationship:** Evaluates
- **Cardinality:** 1 Student → 1 evaluation (1:1)
- **Description:** Each session can be evaluated with rating and feedback.

6. NGO – AwarenessProgram:

- **Relationship:** Organizes
- **Cardinality:** 1 NGO → many programs (1:M)
- **Description:** NGOs can organize multiple awareness programs.

7. Counselor – AwarenessProgram:

- **Relationship:** Organizes

- **Cardinality:** 1 counselor → many programs(1:M)
- **Description:** One counselor can participate in multiple awareness programs.

8. Institution – Funding:

- **Relationship:** Provides Funding
- **Cardinality:** 1 institution → many funding records (1:M)
- **Description:** Institutions provide funding to NGOs for various programs.

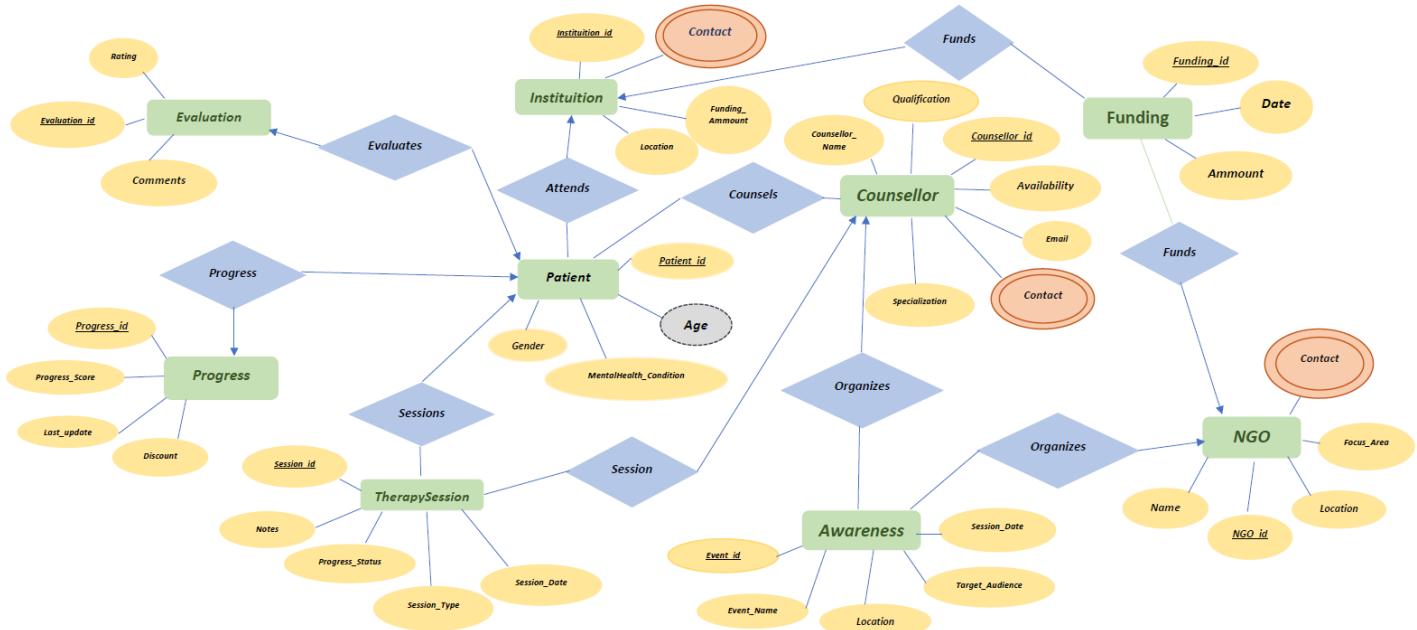
9. NGO – Funding:

- **Relationship:** Provides Funding
- **Cardinality:** 1 NGO → many funding records (1:M)
- **Description:** NGOs receive funding from multiple institutions.

10. Counselor – Student:

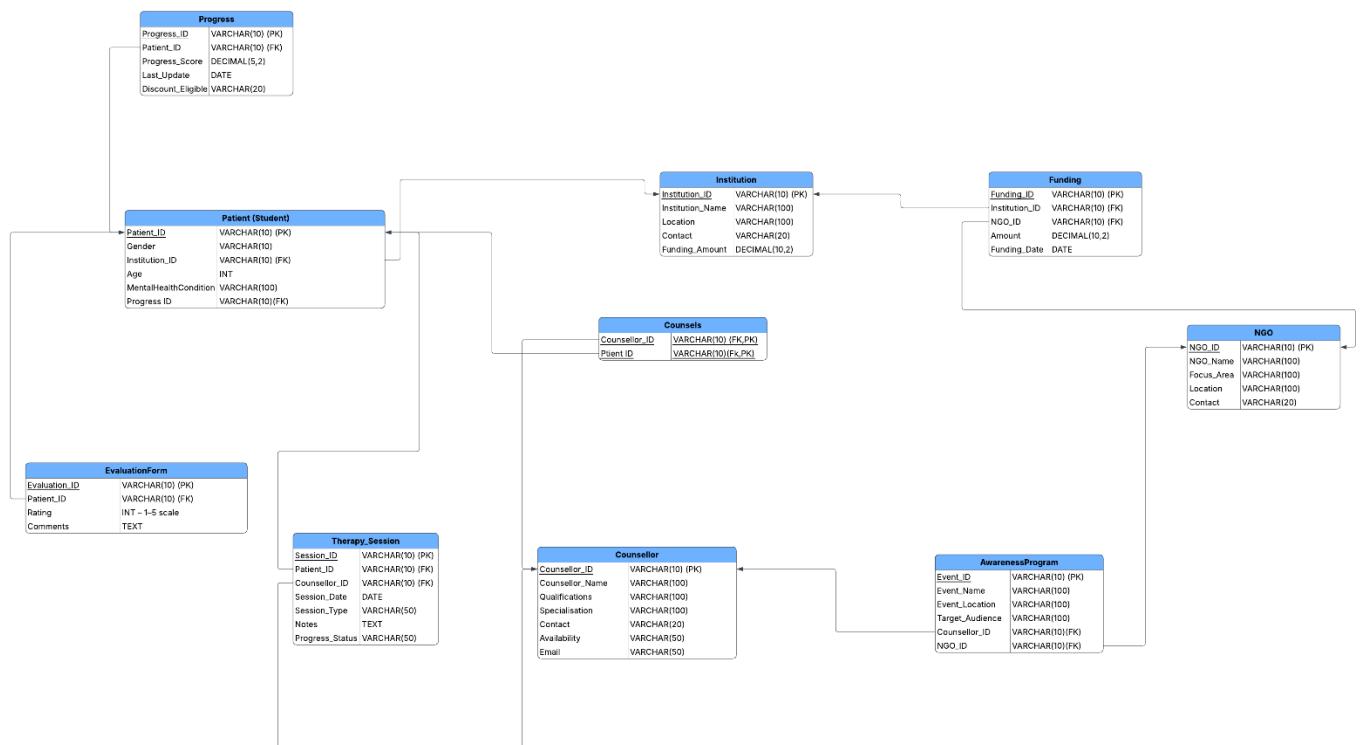
- **Relationship:** Counsels
- **Cardinality:** Many counselors → many students(M:N)
- **Description:** Counselors provide counseling to multiple students, and a student may have multiple counselors.

ER-DIAGRAM



SCHEMA DIAGRAM

The **Mental Health Portal** database schema is designed to manage students, counselors, therapy sessions, progress reports, and evaluations efficiently. It includes tables for Institutions and NGOs, linking them through funding and awareness programs. Relationships such as connect Counsels students with counselors, while Funding links institutions and NGOs to support therapy services. The schema ensures structured, continuous, and confidential mental health care, with modules for tracking progress, session details, and program participation.



DATA INSERTION

1.Table Counsellor

```
CREATE TABLE Counselor (
    Counselor_Id VARCHAR(10) PRIMARY KEY,
    Name VARCHAR(100) NOT NULL,
    Qualification VARCHAR(100) NOT NULL,
    Specialisation VARCHAR(100) NOT NULL,
    Contact VARCHAR(20),
    Email VARCHAR(50) NOT NULL,
    Availability VARCHAR(50) NOT NULL
);
```

```
INSERT INTO Counselor VALUES
```

```
('C1001', 'Dr. Rafi Islam', 'MSc in Clinical Psychology', 'Child Counseling',  
'01712001122', 'rafi.islam@mentalhealthbd.com', 'Available'),  
( 'C1002', 'Dr. Nusrat Jahan', 'PhD in Psychiatry', 'Family Therapy', '01815002233',  
'nusrat.jahan@mindcarebd.org', 'Unavailable'),  
( 'C1003', 'Dr. Shuvo Rahman', 'MPhil in Psychology', 'Addiction Recovery',  
'01689003344', 'shuvo.rahman@hopebd.net', 'Available'),  
( 'C1004', 'Dr. Tania Akter', 'MS in Counseling Psychology', 'Academic Stress',  
'01911004455', 'tania.akter@edusupportbd.com', 'Available'),  
( 'C1005', 'Dr. Mahmud Hasan', 'PhD in Clinical Psychology', 'Depression &  
Anxiety', '01550005566', 'mahmud.hasan@lifelinebd.org', 'Unavailable'),  
( 'C1006', 'Dr. Liza Karim', 'MSc in Clinical Psychology', 'Career Counseling',  
'01718006677', 'liza.karim@careerpathbd.com', 'Available'),
```

('C1007', 'Dr. Shahin Alam', 'PhD in Mental Health', 'PTSD & Trauma',
'01819007788', 'shahin.alam@healingbd.org', 'Available'),
(C1008', 'Dr. Ruma Sultana', 'MS in Psychology', 'Relationship Issues',
'01617008899', 'ruma.sultana@connectbd.net', 'Unavailable'),
(C1009', 'Dr. Imran Hossain', 'MPhil in Counseling', 'Substance Abuse',
'01999009900', 'imran.hossain@rehabbangladesh.com', 'Available'),
(C1010', 'Dr. Farhana Ahmed', 'MSc in Clinical Psychology', 'Women's Mental
Health', '01714001010', 'farhana.ahmed@mindmattersbd.org', 'Available'),
(C1011', 'Dr. Tanvir Chowdhury', 'PhD in Psychology', 'Anger Management',
'01512001111', 'tanvir.chowdhury@calmcenterbd.com', 'Unavailable'),
(C1012', 'Dr. Salma Khatun', 'MS in Educational Psychology', 'Learning
Disabilities', '01818001212', 'salma.khatun@learningaidbd.com', 'Available'),
(C1013', 'Dr. Mehedi Hasan', 'PhD in Clinical Psychology', 'Suicidal Prevention',
'01616001313', 'mehedi.hasan@lifesaverbd.org', 'Available'),
(C1014', 'Dr. Arifa Akter', 'MSc in Psychology', 'Stress Management',
'01913001414', 'arifa.akter@wellbeingbd.net', 'Unavailable'),
(C1015', 'Dr. Nayeem Rahman', 'MS in Counseling Psychology', 'Grief
Counseling', '01717001515', 'nayeem.rahman@hopecirclebd.com', 'Available');

2.Table Patient

```
CREATE TABLE Patient (  
    PatientID VARCHAR(10) PRIMARY KEY,  
    InstitutionID VARCHAR(10),  
    Gender VARCHAR(10),  
    Age INT,  
    MentalHealthCondition VARCHAR(100)
```

);INSERT INTO Patient VALUES
('P2001', 'I1001', 'Female', 21, 'Anxiety'),
('P2002', 'I1002', 'Male', 22, 'Depression'),
('P2003', 'I1003', 'Female', 20, 'Academic Stress'),
('P2004', 'I1001', 'Male', 23, 'Addiction'),
('P2005', 'I1002', 'Female', 19, 'Relationship Issues'),
('P2006', 'I1004', 'Male', 24, 'Career Confusion'),
('P2007', 'I1005', 'Female', 22, 'PTSD'),
('P2008', 'I1006', 'Male', 20, 'Anger Issues'),
('P2009', 'I1001', 'Female', 25, 'Depression'),
('P2010', 'I1003', 'Male', 21, 'Anxiety'),
('P2011', 'I1002', 'Female', 22, 'Learning Disability'),
('P2012', 'I1004', 'Male', 23, 'Substance Abuse'),
('P2013', 'I1005', 'Female', 20, 'Stress'),
('P2014', 'I1003', 'Male', 22, 'Suicidal Thoughts'),
('P2015', 'I1002', 'Female', 19, 'Grief'),
('P2016', 'I1004', 'Male', 21, 'Depression'),
('P2017', 'I1005', 'Female', 23, 'Anxiety'),
('P2018', 'I1006', 'Male', 24, 'PTSD'),
('P2019', 'I1001', 'Female', 22, 'Academic Stress'),
('P2020', 'I1002', 'Male', 20, 'Substance Abuse');
SELECT * FROM Patient;

3.Table TherapySession

```
CREATE TABLE TherapySession (
    SessionID VARCHAR(10) PRIMARY KEY,
    PatientID VARCHAR(10),
    CounselorID VARCHAR(10),
    SessionDate DATE,
    SessionType VARCHAR(50),
    Notes TEXT,
    ProgressStatus VARCHAR(50),
    FOREIGN KEY (PatientID) REFERENCES Patient(PatientID),
    FOREIGN KEY (CounselorID) REFERENCES Counselor(Counselor_Id)
);
```

```
INSERT INTO TherapySession VALUES
('S3001', 'P2001', 'C1010', '2025-09-05', 'Individual', 'Initial session focusing on anxiety triggers.', 'Ongoing'),
('S3002', 'P2002', 'C1005', '2025-09-07', 'Individual', 'Discussed coping mechanisms for depression.', 'Improving'),
('S3003', 'P2003', 'C1004', '2025-09-08', 'Group', 'Session on academic stress management.', 'Ongoing'),
('S3004', 'P2004', 'C1003', '2025-09-09', 'Individual', 'Started addiction recovery plan.', 'Ongoing'),
('S3005', 'P2005', 'C1008', '2025-09-10', 'Online', 'Counseling for relationship issues.', 'Completed'),
('S3006', 'P2006', 'C1006', '2025-09-11', 'Individual', 'Career goal assessment session.', 'Improving'),
```

('S3007', 'P2007', 'C1007', '2025-09-12', 'Individual', 'Trauma healing techniques introduced.', 'Ongoing'),

('S3008', 'P2008', 'C1011', '2025-09-13', 'Group', 'Anger control and breathing exercises.', 'Ongoing'),

('S3009', 'P2009', 'C1005', '2025-09-15', 'Individual', 'Progress review for depression therapy.', 'Completed'),

('S3010', 'P2010', 'C1010', '2025-09-17', 'Online', 'Managing social anxiety discussion.', 'Improving'),

('S3011', 'P2011', 'C1012', '2025-09-18', 'Individual', 'Assessed learning disability improvement.', 'Ongoing'),

('S3012', 'P2012', 'C1009', '2025-09-19', 'Individual', 'Early stage of substance abuse therapy.', 'Ongoing'),

('S3013', 'P2013', 'C1014', '2025-09-20', 'Group', 'Stress management breathing techniques.', 'Improving'),

('S3014', 'P2014', 'C1013', '2025-09-21', 'Individual', 'Suicidal prevention and safety planning.', 'Ongoing'),

('S3015', 'P2015', 'C1015', '2025-09-22', 'Online', 'Grief counseling after loss of parent.', 'Improving'),

('S3016', 'P2016', 'C1005', '2025-09-23', 'Individual', 'Review of depression medication response.', 'Ongoing'),

('S3017', 'P2017', 'C1010', '2025-09-24', 'Group', 'Anxiety support group discussion.', 'Improving'),

('S3018', 'P2018', 'C1007', '2025-09-25', 'Individual', 'Addressing PTSD flashbacks and nightmares.', 'Ongoing'),

('S3019', 'P2019', 'C1004', '2025-09-26', 'Online', 'Time management for reducing academic pressure.', 'Completed'),

('S3020', 'P2020', 'C1009', '2025-09-27', 'Individual', 'Addiction follow-up and family involvement.', 'Ongoing');

```
SELECT * FROM TherapySession;
```

4.Table NGO

```
CREATE TABLE NGO (
    NGO_ID VARCHAR(10) PRIMARY KEY,
    NGO_NAME VARCHAR(100),
    Focus_Area VARCHAR(100),
    Location VARCHAR(100),
    Contact VARCHAR(20)
);
```

```
INSERT INTO NGO VALUES
('NGO001', 'Helping Hands', 'Education', 'Dhaka', '01712345678'),
('NGO002', 'Green Earth', 'Environment', 'Chittagong', '01823456789'),
('NGO003', 'Food For All', 'Hunger Relief', 'Khulna', '01934567890'),
('NGO004', 'Health First', 'Healthcare', 'Rajshahi', '01645678901'),
('NGO005', 'Women Rise', 'Women Empowerment', 'Sylhet', '01556789012'),
('NGO006', 'Child Hope', 'Child Welfare', 'Barisal', '01767890123'),
('NGO007', 'Clean Future', 'Sanitation', 'Rangpur', '01878901234'),
('NGO008', 'Safe Shelter', 'Homeless Support', 'Mymensingh', '01989012345'),
('NGO009', 'TechForGood', 'Digital Education', 'Dhaka', '01690123456'),
('NGO010', 'WaterLife', 'Clean Water Access', 'Comilla', '01501234567'),
('NGO011', 'HopeBridge', 'Disaster Relief', 'Narayanganj', '01712345679'),
```

('NGO012', 'GreenLight', 'Renewable Energy', 'Gazipur', '01823456780'),
 ('NGO013', 'SkillUp', 'Vocational Training', 'Jessore', '01934567891'),
 ('NGO014', 'FeedBangla', 'Food Security', 'Bogura', '01645678902'),
 ('NGO015', 'CareBangla', 'Elderly Care', 'Pabna', '01556789013'),
 ('NGO016', 'BrightFuture', 'Youth Development', 'Feni', '01767890124'),
 ('NGO017', 'SaveNature', 'Wildlife Protection', 'Cox's Bazar', '01878901235'),
 ('NGO018', 'MindCare', 'Mental Health', 'Tangail', '01989012346'),
 ('NGO019', 'PeaceWorks', 'Community Building', 'Naogaon', '01690123457'),
 ('NGO020', 'AidConnect', 'Emergency Aid', 'Kushtia', '01501234568');

5.Table Institution

```

CREATE TABLE Institution (
  Institution_ID VARCHAR(10) PRIMARY KEY,
  Institution_Name VARCHAR(100),
  Location VARCHAR(100),
  Contact VARCHAR(20),
  Funding_Amount DECIMAL(10,2)
);
  
```

INSERT INTO Institution VALUES

('INS001', 'University of Asia Pacific', 'Green Road', '01712334455', 500000.00),
 ('INS002', 'Independent University, Bangladesh', 'Bosundhora', '01823445566',
 350000.00),
 ('INS003', 'BRAC', 'Badda', '01934556677', 275000.50),

('INS004', 'Daffodil International University', 'Savar', '01645667788', 420000.00),
('INS005', 'American International University-Bangladesh', 'Dhaka',
'01556778899', 310000.75),
('INS006', 'Dhaka University', 'Dhaka', '01767889900', 600000.00),
('INS007', 'Rajshahi University', 'Rajshahi', '01878990011', 265000.25),
('INS008', 'Leading University', 'Sylhet', '01989001122', 450000.00),
('INS009', 'Khulna University', 'Khulna', '01690112233', 340000.00),
('INS010', 'Cumilla University', 'Cumilla', '01501223344', 295000.00),
('INS011', 'Jessore University', 'Jessore', '01712334466', 255000.00),
('INS012', 'Jahangir University', 'Savar', '01823445577', 385000.00),
('INS013', 'Pabna University', 'Pabna', '01934556688', 275500.00),
('INS014', 'Chittagang University', 'Chittagong', '01645667799', 190000.00),
('INS015', 'Jagannath University', 'Dhaka', '01556778800', 330000.00),
('INS016', 'Bangladesh University of Textiles', 'Dhaka', '01767889911', 260000.00),
('INS017', 'Barishal University', 'Barishal', '01878990022', 410000.00),
('INS018', 'Shahjalal University of Science and Technology', 'Sylhet', '0198-001133', 350500.00),
('INS019', 'Bangladesh University of Professionals', 'Dhaka', '01690112244', 285000.00),
('INS020', 'Military Institute of Science and Technology', 'Dhaka', '01501223355', 470000.00);

6.Table Funding

CREATE TABLE Funding (
Funding_ID VARCHAR(10) PRIMARY KEY,

```

Institution_ID VARCHAR(10),
NGO_ID VARCHAR(10),
Amount DECIMAL(10,2),
Funding_Date DATE);

INSERT INTO Funding VALUES
('FUND001', 'INS001', 'NGO001', 250000.00, '2023-02-15'),
('FUND002', 'INS002', 'NGO002', 180000.50, '2023-03-10'),
('FUND003', 'INS003', 'NGO003', 220000.00, '2023-05-21'),
('FUND004', 'INS004', 'NGO004', 300000.00, '2023-07-05'),
('FUND005', 'INS005', 'NGO005', 150000.00, '2023-08-30'),
('FUND006', 'INS006', 'NGO006', 275000.75, '2023-09-25'),
('FUND007', 'INS007', 'NGO007', 320000.00, '2023-10-12'),
('FUND008', 'INS008', 'NGO008', 295000.00, '2023-11-18'),
('FUND009', 'INS009', 'NGO009', 310000.50, '2024-01-07'),
('FUND010', 'INS010', 'NGO010', 205000.00, '2024-02-11'),
('FUND011', 'INS011', 'NGO011', 260000.00, '2024-03-14'),
('FUND012', 'INS012', 'NGO012', 340000.00, '2024-05-20'),
('FUND013', 'INS013', 'NGO013', 285000.00, '2024-06-09'),
('FUND014', 'INS014', 'NGO014', 195000.00, '2024-07-27'),
('FUND015', 'INS015', 'NGO015', 375000.00, '2024-09-10'),
('FUND016', 'INS016', 'NGO016', 210000.50, '2024-10-01'),
('FUND017', 'INS017', 'NGO017', 425000.00, '2024-11-22'),
('FUND018', 'INS018', 'NGO018', 190000.00, '2025-01-05'),
('FUND019', 'INS019', 'NGO019', 270000.00, '2025-03-15'),

```

('FUND020', 'INS020', 'NGO020', 310000.00, '2025-05-09');

7.Table EvaluationFrom

```
CREATE TABLE EvaluationForm (
    Evaluation_ID VARCHAR (10) PRIMARY KEY,
    Patient_ID VARCHAR (10),
    Rating INT CHECK (Rating BETWEEN 1 AND 5),
    Comments TEXT,
    FOREIGN KEY (Patient_ID) REFERENCES Patient(PatientID)
);
```

```
INSERT INTO EvaluationForm VALUES
('EVAL001', 'P2001', 4, 'Patient showing steady improvement.'),
('EVAL002', 'P2002', 3, 'Needs further sessions for confidence building.'),
('EVAL003', 'P2003', 5, 'Significant reduction in stress levels.'),
('EVAL004', 'P2004', 2, 'Requires more therapy for anxiety control.'),
('EVAL005', 'P2005', 4, 'Positive progress noted after mindfulness sessions.'),
('EVAL006', 'P2006', 3, 'Slight improvement in trauma management.'),
('EVAL007', 'P2007', 5, 'Excellent progress; OCD symptoms reduced.'),
('EVAL008', 'P2008', 4, 'Shows motivation towards recovery.'),
('EVAL009', 'P2009', 3, 'Needs better sleep hygiene practices.'),
('EVAL010', 'P2010', 2, 'Patient still facing sleep-related issues.');
```

8.Table Progress

```
CREATE TABLE Progress (
    Progress_ID VARCHAR (10) PRIMARY KEY,
    Patient_ID VARCHAR (10),
    Progress_Score DECIMAL (5,2),
    Last_Update DATE,
    Discount_Eligible VARCHAR (20),
    FOREIGN KEY (Patient_ID) REFERENCES Patient (PatientID)
);
```

```
INSERT INTO Progress VALUES
('PROG001', 'P2001', 88.50, '2024-03-15', 'Yes'),
('PROG002', 'P2002', 75.20, '2024-04-10', 'No'),
('PROG003', 'P2003', 92.00, '2024-05-01', 'Yes'),
('PROG004', 'P2004', 64.75, '2024-05-20', 'Partial'),
('PROG005', 'P2005', 80.30, '2024-06-12', 'Yes'),
('PROG006', 'P2006', 70.10, '2024-07-05', 'No'),
('PROG007', 'P2007', 95.60, '2024-07-28', 'Yes'),
('PROG008', 'P2008', 85.45, '2024-08-15', 'Yes'),
('PROG009', 'P2009', 74.00, '2024-09-01', 'Partial'),
('PROG010', 'P2010', 68.25, '2024-09-20', 'No');
```

```
SELECT *FROM Progress;
```

9. Table AwarenessProgram

```
CREATE TABLE AwarenessProgram (
    Event_ID VARCHAR (10) PRIMARY KEY,
    Event_Name VARCHAR (100),
    Event_Location VARCHAR (100),
    Target_Audience VARCHAR (100),
    Counselor_ID VARCHAR (10),
    NGO_ID VARCHAR (10),
    FOREIGN KEY (Counselor_ID) REFERENCES Counselor(Counselor_Id),
    FOREIGN KEY (NGO_ID) REFERENCES NGO(NGO_ID)
);
```

```
INSERT INTO AwarenessProgram VALUES
('EVT001', 'Mindfulness for Students', 'Dhaka', 'College Students', 'C1004',
'NGO018'),
('EVT002', 'Coping with Depression', 'Chittagong', 'University Students', 'C1005',
'NGO018'),
('EVT003', 'Mental Health in Workplace', 'Khulna', 'Corporate Employees',
'C1003', 'NGO004'),
('EVT004', 'Stress Relief Camp', 'Rajshahi', 'Teachers', 'C1014', 'NGO018'),
('EVT005', 'Anxiety Awareness', 'Sylhet', 'Young Adults', 'C1001', 'NGO018'),
('EVT006', 'Overcoming PTSD', 'Barisal', 'Trauma Survivors', 'C1007', 'NGO018'),
('EVT007', 'Child Mental Health', 'Rangpur', 'Parents & Teachers', 'C1012',
'NGO006'),
```

('EVT008', 'Digital Detox Workshop', 'Mymensingh', 'Teenagers', 'C1006', 'NGO009'),
('EVT009', 'Addiction Prevention', 'Gazipur', 'Youth', 'C1009', 'NGO017'),
('EVT010', 'Women Empowerment Talk', 'Comilla', 'Women', 'C1010', 'NGO005'),
('EVT011', 'Anger Management Seminar', 'Narayanganj', 'Working Professionals', 'C1011', 'NGO018'),
('EVT012', 'Suicide Prevention Drive', 'Jessore', 'Community Leaders', 'C1013', 'NGO018'),
('EVT013', 'Healthy Mind, Healthy Life', 'Bogura', 'Public', 'C1002', 'NGO004'),
('EVT014', 'Career Stress Management', 'Pabna', 'Graduates', 'C1006', 'NGO009'),
('EVT015', 'Positive Parenting', 'Feni', 'Parents', 'C1012', 'NGO006'),
('EVT016', 'Mind & Music Festival', 'Cox's Bazar', 'Tourists', 'C1008', 'NGO017'),
('EVT017', 'Work-Life Balance', 'Tangail', 'Office Workers', 'C1009', 'NGO018'),
('EVT018', 'Mental Health Awareness Marathon', 'Naogaon', 'Public', 'C1005', 'NGO019'),
('EVT019', 'Dealing with Grief', 'Kushtia', 'Bereaved Families', 'C1015', 'NGO018'),
('EVT020', 'Community Wellness Fair', 'Dinajpur', 'General Public', 'C1001', 'NGO020');

QUERIES

01.SELECT * FROM Patient

Record from the Patient table with all columns Shows every and details.

PatientID	InstitutionID	Gender	Age	MentalHealthCondition
P2001	I1001	Female	21	Anxiety
P2002	I1002	Male	22	Depression
P2003	I1003	Female	20	Academic Stress
P2004	I1001	Male	23	Addiction
P2005	I1002	Female	19	Relationship Issues
P2006	I1004	Male	24	Career Confusion
P2007	I1005	Female	22	PTSD
P2008	I1006	Male	20	Anger Issues
P2009	I1001	Female	25	Depression
P2010	I1003	Male	21	Anxiety
P2011	I1002	Female	22	Learning Disability
P2012	I1004	Male	23	Substance Abuse
P2013	I1005	Female	20	Stress
P2014	I1003	Male	22	Suicidal Thoughts
P2015	I1002	Female	19	Grief
P2016	I1004	Male	21	Depression
P2017	I1005	Female	23	Anxiety
P2018	I1006	Male	24	PTSD
P2019	I1001	Female	22	Academic Stress
P2020	I1002	Male	20	Substance Abuse

02.SELECT Name, Specialisation , Qualification FROM Counselor;

Lists each counselor's name, area of specialization, and qualifications.

Name	Specialisation	Qualification
Dr. Rafi Islam	Child Counseling	MSc in Clinical Psychology
Dr. Nusrat Jahan	Family Therapy	PhD in Psychiatry
Dr. Shuvo Rahman	Addiction Recovery	MPhil in Psychology
Dr. Tania Akter	Academic Stress	MS in Counseling Psychology
Dr. Mahmud Hasan	Depression & Anxiety	PhD in Clinical Psychology
Dr. Liza Karim	Career Counseling	MSc in Clinical Psychology
Dr. Shahin Alam	PTSD & Trauma	PhD in Mental Health
Dr. Ruma Sultana	Relationship Issues	MS in Psychology
Dr. Imran Hossain	Substance Abuse	MPhil in Counseling
Dr. Farhana Ahmed	Women's Mental Health	MSc in Clinical Psychology
Dr. Tanvir Chowdhury	Anger Management	PhD in Psychology
Dr. Salma Khatun	Learning Disabilities	MS in Educational Psychology
Dr. Mehedi Hasan	Suicidal Prevention	PhD in Clinical Psychology
Dr. Arifa Akter	Stress Management	MSc in Psychology
Dr. Nayeem Rahman	Grief Counseling	MS in Counseling Psychology

**03.SELECT SessionID, SessionDate, SessionType, Notes
FROM TherapySession WHERE PatientID = 'P2001';**

Lists all sessions attended by patient P2001 with date, type, and notes...

SessionID	SessionDate	SessionType	Notes
S3001	2025-09-05	Individual	Initial session focusing on anxiety triggers.

04.SELECT Rating, Comments FROM EvaluationForm WHERE Patient_ID = 'P2002';

Shows how patient P2002 was rated and what comments were given in evaluations.

Rating	Comments
3	Needs further sessions for confidence building.

05.SELECT NGO_NAME, Focus_Area, Location FROM NGO;

Displays each NGO's name, what issue they focus on, and where they operate.

NGO_NAME	Focus_Area	Location
Helping Hands	Education	Dhaka
Green Earth	Environment	Chittagong
Food For All	Hunger Relief	Khulna
Health First	Healthcare	Rajshahi
Women Rise	Women Empowerment	Sylhet
Child Hope	Child Welfare	Barisal
Clean Future	Sanitation	Rangpur
Safe Shelter	Homeless Support	Mymensingh
TechForGood	Digital Education	Dhaka
WaterLife	Clean Water Access	Comilla
HopeBridge	Disaster Relief	Narayanganj
GreenLight	Renewable Energy	Gazipur
SkillUp	Vocational Training	Jessore
FeedBangla	Food Security	Bogura
CareBangla	Elderly Care	Pabna
BrightFuture	Youth Development	Feni
SaveNature	Wildlife Protection	Cox's Bazar
MindCare	Mental Health	Tangail
PeaceWorks	Community Building	Naogaon
AidConnect	Emergency Aid	Kushtia

06.SELECT Patient_ID, AVG(Rating) AS AvgRating FROM EvaluationForm GROUP BY Patient_ID;

Groups evaluations by patient and computes each one's average rating.

Patient_ID	AvgRating
P2001	4.0000
P2002	3.0000
P2003	5.0000
P2004	2.0000
P2005	4.0000
P2006	3.0000
P2007	5.0000
P2008	4.0000
P2009	3.0000
P2010	2.0000

**07.SELECT p.PatientID, pr.Discount_Eligible FROM Patient p
JOIN Progress pr ON p.PatientID = pr.Patient_ID
WHERE pr.Discount_Eligible IN ('Yes', 'Partial');**

Lists patients who qualify for full or partial therapy fee discounts.

PatientID	Discount_Eligible
P2001	Yes
P2003	Yes
P2004	Partial
P2005	Yes
P2007	Yes
P2008	Yes
P2009	Partial

08. SELECT * FROM TherapySession WHERE CounselorID = 'C1005' AND SessionDate BETWEEN '2025-09-01' AND '2025-09-30';

Filters all therapy sessions by CounselorID = C1005 and the month of September 2025.

SessionID	PatientID	CounselorID	SessionDate	SessionType	Notes	ProgressStatus
S3002	P2002	C1005	2025-09-07	Individual	Discussed coping mechanisms for depression.	Improving
S3009	P2009	C1005	2025-09-15	Individual	Progress review for depression therapy.	Completed
S3016	P2016	C1005	2025-09-23	Individual	Review of depression medication response.	Ongoing

**09.SELECT i.Institution_Name, SUM(f.Amount) AS TotalFunding
FROM Institution I JOIN Funding f ON i.Institution_ID =
f.Institution_ID GROUP BY i.Institution_Name;**

Adds up all funding amounts grouped by institution name

Institution_Name	TotalFunding
University of Asia Pacific	250000.00
Independent University, Bangladesh	180000.50
BRAC	220000.00
Daffodil International University	300000.00
American International University-Bangladesh	150000.00
Dhaka University	275000.75
Rajshahi University	320000.00
Leading University	295000.00
Khulna University	310000.50
Cumilla University	205000.00
Jessore University	260000.00
Jahangir University	340000.00
Pabna University	285000.00
Chittagong University	195000.00
Jagannath University	375000.00
Bangladesh University of Textiles	210000.50
Barishal University	425000.00
Shahjalal University of Science and Technology	190000.00
Bangladesh University of Professionals	270000.00
Military Institute of Science and Technology	310000.00

**10.SELECT DISTINCT p.PatientID FROM Patient p JOIN
EvaluationForm e ON p.PatientID = e.Patient_ID WHERE
p.MentalHealthCondition = 'Depression' AND e.Rating < 5;
Finds patients diagnosed with Depression who received low evaluation scores (<5).**

PatientID
P2002
P2009

11.SELECT Name, Contact FROM Counselor WHERE Availability = 'Available';

Displays only those counselors marked as available in the database

Name	Contact
Dr. Rafi Islam	01712001122
Dr. Shuvo Rahman	01689003344
Dr. Tania Akter	01911004455
Dr. Liza Karim	01718006677
Dr. Shahin Alam	01819007788
Dr. Imran Hossain	01999009900
Dr. Farhana Ahmed	01714001010
Dr. Salma Khatun	01818001212
Dr. Mehedi Hasan	01616001313
Dr. Nayeem Rahman	01717001515

12.SELECT Event_Name, Event_Location FROM AwarenessProgram WHERE Target_Audience LIKE '%Students%';

List all awareness events aimed at students

Event_Name	Event_Location
Mindfulness for Students	Dhaka
Coping with Depression	Chittagong

13. SELECT p.PatientID, COALESCE(pr.Progress_Score, AVG(e.Rating)*20) AS ProgressScore FROM Patient p LEFT JOIN Progress pr ON p.PatientID = pr.Patient_ID LEFT JOIN EvaluationForm e ON p.PatientID = e.Patient_ID GROUP BY p.PatientID, pr.Progress_Score;

Displays each patient's progress score either the recorded value or an estimated one using average rating.

PatientID	ProgressScore
P2001	88.5000
P2002	75.2000
P2003	92.0000
P2004	64.7500
P2005	80.3000
P2006	70.1000
P2007	95.6000
P2008	85.4500
P2009	74.0000
P2010	68.2500
P2011	NULL
P2012	NULL
P2013	NULL
P2014	NULL
P2015	NULL
P2016	NULL
P2017	NULL
P2018	NULL
P2019	NULL
P2020	NULL

14. SELECT c.Name, COUNT(*) AS SessionCount FROM Counselor c JOIN TherapySession t ON c.Counselor_Id = t.CounselorID GROUP BY c.Name ORDER BY SessionCount DESC LIMIT 1;

Counts each counselor's total sessions and shows the one with the highest count.

Name	SessionCount
Dr. Mahmud Hasan	3

15. SELECT p.PatientID, pr.Progress_Score, pr.Discount_Eligible FROM Patient p JOIN Progress pr ON p.PatientID = pr.Patient_ID WHERE pr.Progress_Score > 80;

Finds high- performing patients (score > 80) and displays whether they get a discount.

PatientID	Progress_Score	Discount_Eligible
P2001	88.50	Yes
P2003	92.00	Yes
P2005	80.30	Yes
P2007	95.60	Yes
P2008	85.45	Yes

**16. SELECT p.PatientID, COUNT(t.SessionID) AS TotalSessions
FROM Patient p LEFT JOIN TherapySession t ON p.PatientID =
t.PatientID GROUP BY p.PatientID;**

Counts how many therapy sessions each patient has joined.

PatientID	TotalSessions
P2001	1
P2002	1
P2003	1
P2004	1
P2005	1
P2006	1
P2007	1
P2008	1
P2009	1
P2010	1
P2011	1
P2012	1
P2013	1
P2014	1
P2015	1
P2016	1
P2017	1
P2018	1
P2019	1
P2020	1

**17. SELECT i.Institution_Name, SUM(f.Amount) AS TotalFunding
FROM Institution I JOIN Funding f ON i.Institution_ID =
f.Institution_ID GROUP BY i.Institution_Name
HAVING SUM(f.Amount) > 300000;**

Shows institutions whose total funding exceeds 300,000 units.

Institution_Name	TotalFunding
Rajshahi University	320000.00
Khulna University	310000.50
Jahangir University	340000.00
Jagannath University	375000.00
Barishal University	425000.00
Military Institute of Science and Technology	310000.00

**18. SELECT p.PatientID, MAX(t.SessionDate) AS LastSession
 FROM Patient p JOIN TherapySession t ON p.PatientID
 =t.PatientID GROUP BY p.PatientID HAVING MAX(t.SessionDate)
 >= DATE_SUB(CURDATE(), INTERVAL 30 DAY);**

Displays patients who attended therapy at least once in the past month.

PatientID	LastSession
P2012	2025-09-19
P2013	2025-09-20
P2014	2025-09-21
P2015	2025-09-22
P2016	2025-09-23
P2017	2025-09-24
P2018	2025-09-25
P2019	2025-09-26
P2020	2025-09-27

**19. SELECT DISTINCT c.Name FROM Counselor c
 JOIN TherapySession t ON c.Counselor_Id = t.CounselorID
 JOIN Patient p ON t.PatientID = p.PatientID WHERE
 p.MentalHealthCondition = 'PTSD';**

Finds which counselors have worked with PTSD-diagnosed patients.

Name
Dr. Shahin Alam

20. SELECT c.Name, AVG(e.Rating) AS AvgRating FROM Counselor c JOIN TherapySession t ON c.Counselor_Id = t.CounselorID JOIN EvaluationForm e ON t.SessionID = e.Evaluation_ID GROUP BY c.Name;

The query joins the counselor, TherapySession, and EvaluationFrom tables to calculate the average rating each counselor received. However, since no matching records exist across all three tables, the output is empty.

21. SELECT Patient_ID, Progress_Score FROM Progress WHERE Progress_Score > ALL (SELECT Progress_Score FROM Progress WHERE Patient_ID IN (SELECT PatientID FROM Patient WHERE Age < 21));

Finds patients who scored higher than every patient under 21

Patient_ID	Progress_Score
P2007	95.60

22. SELECT PatientID, Age FROM Patient WHERE Age < ANY (SELECT LENGTH(Qualification) FROM Counselor);

Compares patient age with string length of counselor qualifications (always outputs).

PatientID	Age
P2001	21
P2002	22
P2003	20
P2004	23
P2005	19
P2006	24
P2007	22
P2008	20
P2009	25
P2010	21
P2011	22
P2012	23
P2013	20
P2014	22
P2015	19
P2016	21
P2017	23
P2018	24
P2019	22
P2020	20

23. SELECT Patient_ID, Progress_Score FROM Progress WHERE Progress_Score > ALL (SELECT Progress_Score FROM Progress WHERE Discount_Eligible = 'No');

Patients whose progress score is greater than all patients who are *not* eligible for discount

Patient_ID	Progress_Score
P2001	88.50
P2003	92.00
P2005	80.30
P2007	95.60
P2008	85.45

24. SELECT PatientID FROM TherapySession WHERE CounselorID IN (SELECT CounselorID FROM TherapySession GROUP BY CounselorID HAVING COUNT(*) < (SELECT AVG(SessionCount) FROM (SELECT COUNT(*) AS SessionCount FROM TherapySession GROUP BY CounselorID) AS T));

Lists the patients who were attended by counselors having below-average number of sessions.

PatientID
P2004
P2005
P2006
P2008
P2011
P2013
P2014
P2015

25. SELECT Patient_ID FROM Patient WHERE Patient_ID NOT IN (SELECT DISTINCT Patient_ID FROM EvaluationForm);

Shows Patients who have *never* filled an evaluation form.

PatientID
P2011
P2012
P2013
P2014
P2015
P2016
P2017
P2018
P2019
P2020

CEP MAPPING (K–P–A)

K – Knowledge			
CEP Component	Code	Attribute	How We Achieved It
Knowledge (K)	K1	Core engineering fundamentals	Applied database fundamentals such as entity creation, primary/foreign keys, normalization, and relationship identification while designing the complete schema.
Knowledge (K)	K2	Use of mathematics, science & IT	Implemented SQL operations using logical conditions, date functions, aggregations, and statistical calculations (average ratings, session counts).
Knowledge (K)	K3	Theory-based modeling	Developed ER diagrams and normalized tables (1NF–3NF) strictly following DBMS theoretical guidelines.
Knowledge (K)	K4	Specialized engineering knowledge	Used advanced SQL concepts (subqueries, ANY/ALL operators, constraints) to build a robust mental-health support database.
Knowledge (K)	K6	Use of modern engineering practices	Created a fully functional database using SQL DDL & DML, maintaining referential integrity and realistic workflow mapping.
Knowledge (K)	K8	Social, ethical & sustainability awareness	Ensured ethical handling of mental-health data by introducing AnonymousID, controlled access, and sustainable funding mechanisms involving institutions and NGOs.

P – Problem Solving			
CEP Component	Code	Attribute	How We Achieved It
Problem Solving (P)	P1	Depth of engineering knowledge required	Designed multiple interconnected entities covering therapy sessions, evaluations, progress tracking, and funding flows.
Problem Solving (P)	P2	Conflicting requirements	Balanced student privacy with counselor availability, institutional reporting needs, and NGO funding constraints.
Problem Solving (P)	P3	Non-routine, abstract problem	Translated real counseling procedures into structured entities like TherapySession,

			Progress, Evaluation, and Awareness Program.
Problem Solving (P)	P5	Multiple stakeholders involved	Considered requirements of students, counselors, academic institutions, and NGOs in one unified database.
Problem Solving (P)	P7	Large, interconnected problem scope	Built a system with 6+ linked tables representing scheduling, therapy, evaluation, notifications, and funding processes.

A – Activities

CEP Component	Code	Attribute	How We Achieved It
Activities (A)	A1	Use of diverse resources	Integrated sessions, personal data, counselor information, progress updates, and NGO funding within a single system.
Activities (A)	A2	Coordination of complex interactions	Managed dependencies between Student–Counselor mapping, funding distribution, progress updates, and evaluations.
Activities (A)	A3	Innovation & practical application	Implemented anonymous identity tracking, subquery-based insights, and a modular design linking therapy, progress, and funding.
Activities (A)	A4	Societal and ethical responsibility	Designed the system to promote student well-being, data confidentiality, and long-term accessibility through institutional and NGO support.

FUTURE IMPROVEMENT

- Web-Based Portal Development** – We aim to build a user-friendly online platform for students and counselors to access the system remotely.
- Automated Scheduling & Notifications** – We plan to implement automatic session scheduling and reminders to improve engagement for both students and counselors.
- AI-Driven Psychological Trend Analysis** – We envision using AI to analyze therapy data, detect mental health patterns, and provide personalized recommendations.

- 4. Real-Time Counselor–Student Chat Support** – We want to enable instant messaging so students can get guidance and support between sessions.
- 5. Mobile App Integration** – We intend to develop a mobile application for easy access to sessions, progress tracking, and awareness programs.
- 6. Encryption for Sensitive Records** – We will ensure student mental health data is secure through end-to-end encryption and strict privacy controls.

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4. World Health Organization. (2022). Mental Health: Strengthening Our Response.
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CONCLUSION

In this project, we developed a Mental Health Portal database to support students' psychological well-being. The system manages students, counselors, therapy sessions, progress reports, evaluations, institutions, NGOs, and awareness programs efficiently through a well-structured relational schema and normalized tables.

By designing ER diagrams, implementing relationships, and writing complex queries, we ensured secure data handling, accurate progress tracking, and meaningful reporting. The project enhanced our knowledge of database concepts,

SQL skills, and practical problem-solving, while also emphasizing ethical management of sensitive information.

Overall, the Mental Health Portal provides a foundation for future improvements such as web and mobile access, automated scheduling, AI-driven analysis, and real-time counselor-student support, ensuring accessible, continuous, and secure mental health care for students.

DRIVE LINK