

DATABASE WEEK 8 DOCUMENTATION.

Sustainable Development Goal (SDG) Selected: Universal Literacy and Numeracy (SDG 4.6)

Specific Problem.

Despite efforts to improve education globally, certain regions, particularly underserved and remote areas, still exhibit lower literacy rates among youth and adults. The disparity in literacy outcomes is influenced by various factors, including resource allocation, teacher qualifications, school types (primary vs. secondary), and socio-economic conditions. This problem hinders progress toward achieving universal literacy and numeracy by 2030.

Objective

To analyze and identify key factors contributing to lower literacy rates in specific regions and provide data-driven insights to policymakers and educational institutions for targeted interventions.

Key Data Points to Address the Problem:

Regional Literacy Rates: Understanding the literacy rate differences across various regions.

School Type and Performance: Evaluating whether primary or secondary schools in specific regions are underperforming in literacy outcomes.

Teacher Qualifications: Analyzing the correlation between teacher qualifications and student literacy scores.

Student Performance: Identifying students with consistently low literacy scores to provide additional support.

Resource Allocation: Assessing whether schools in underserved regions are receiving adequate resources compared to other regions.

SQL QUERIES

```
-- CREATE TABLE Students (  
--   StudentID INT PRIMARY KEY,  
--   Name VARCHAR(100) NOT NULL,  
--   Age INT,  
--   Gender CHAR(1),  
--   SchoolID INT,  
--   FOREIGN KEY (SchoolID) REFERENCES Schools(SchoolID)  
-- );
```

```

-- INSERT INTO Students (StudentID, Name, Age, Gender, SchoolID)
-- VALUES (1, 'John Masha', 14, 'M', 1),
--      (2, 'Jane Ndiragu', 13, 'F', 2),
--      (3, 'Tom Chengo', 15, 'F', 4),
--      (4, 'Karisa Yaa', 14, 'M', 2),
--      (5, 'Carolyn Kai', 13, 'F', 3),
--      (6, 'Tim James', 15, 'M', 1),
--      (7, 'Ben Mark', 14, 'M', 3),
--      (8, 'Janet Kungu', 13, 'F', 4),
--      (9, 'Jimmy Getz', 15, 'M', 2),
--      (10, 'Brenda Masha', 14, 'F', 3),
--      (11, 'Mercy John', 13, 'F', 1),
--      (12, 'Johnson Kamau', 15, 'M', 4);

```

Retrieve All Students and Their Assessment Scores

```

-- SELECT
--     Students.StudentID,
--     Students.Name AS StudentName,
--     Schools.Name AS SchoolName,
--     Regions.Name AS RegionName,
--     Assessments.LiteracyScore
-- FROM
--     Students
-- INNER JOIN
--     Schools ON Students.SchoolID = Schools.SchoolID
-- INNER JOIN
--     Regions ON Schools.RegionalID = Regions.RegionID
-- INNER JOIN
--     Assessments ON Students.StudentID = Assessments.StudentID;

```

Retrieve Schools in a Specific Region

```
-- SELECT
--   Schools.SchoolID,
--   Schools.Name AS SchoolName,
--   Regions.Name AS RegionName
-- FROM
--   Schools
-- INNER JOIN
--   Regions ON Schools.RegionalID = Regions.RegionID
-- WHERE
--   Regions.Name = 'Region Coast';
```

Retrieve Teachers and Their Students

```
-- SELECT
--   Teachers.TeacherID,
--   Teachers.Name AS TeacherName,
--   Students.StudentID,
--   Students.Name AS StudentName,
--   Schools.Name AS SchoolName
-- FROM
--   Teachers
-- INNER JOIN
--   Schools ON Teachers.SchoolID = Schools.SchoolID
-- INNER JOIN
--   Students ON Students.SchoolID = Schools.SchoolID;
```

Average Literacy Score by Region

```
-- SELECT
--   Regions.Name AS RegionName,
--   AVG(Assessments.LiteracyScore) AS AverageLiteracyScore
-- FROM
--   Assessments
-- INNER JOIN
--   Students ON Assessments.StudentID = Students.StudentID
-- INNER JOIN
--   Schools ON Students.SchoolID = Schools.SchoolID
-- INNER JOIN
--   Regions ON Schools.RegionalID = Regions.RegionID
-- GROUP BY
--   Regions.RegionID;
```

Correlation Between School Type and Literacy Scores

```
-- SELECT
--   Schools.SchoolType,
--   AVG(Assessments.LiteracyScore) AS AverageLiteracyScore
-- FROM
--   Assessments
-- INNER JOIN
--   Students ON Assessments.StudentID = Students.StudentID
-- INNER JOIN
--   Schools ON Students.SchoolID = Schools.SchoolID
-- GROUP BY
--   Schools.SchoolType;
```

Top Performing Students

```
-- SELECT
--  Students.StudentID,
--  Students.Name AS StudentName,
--  Assessments.LiteracyScore,
--  Schools.Name AS SchoolName,
--  Regions.Name AS RegionName
-- FROM
--  Assessments
-- INNER JOIN
--  Students ON Assessments.StudentID = Students.StudentID
-- INNER JOIN
--  Schools ON Students.SchoolID = Schools.SchoolID
-- INNER JOIN
--  Regions ON Schools.RegionalID = Regions.RegionID
-- ORDER BY
--  Assessments.LiteracyScore DESC
-- LIMIT 5;
```

```
## Average Literacy Score by Teacher

-- SELECT

-- Teachers.Name AS TeacherName,

-- AVG(Assessments.LiteracyScore) AS AverageLiteracyScore

-- FROM

-- Assessments

-- INNER JOIN

-- Teachers ON Assessments.TeachersID = Teachers.TeacherID

-- GROUP BY

-- Teachers.TeacherID;
```