



COMSATS University Islamabad (CUI)

Project Report

for

**DATABASE-DRIVEN ANALYSIS OF THE IMPACT OF
REMOTE WORK ON MENTAL HEALTH**
(Version 1.1)

By

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Project Category: (Select all the major domains of proposed project)

<input type="checkbox"/> A -Desktop Application/Information System	<input type="checkbox"/> B -Web Application/Web Application based Information System	
<input type="checkbox"/> C -Problem Solving and Artificial Intelligence	<input type="checkbox"/> D -Simulation and Modeling	<input type="checkbox"/> E -Smartphone Application
<input type="checkbox"/> F -Smartphone Game	<input type="checkbox"/> G -Networks	<input type="checkbox"/> H -Image Processing
<input checked="" type="checkbox"/> Other (specify category) _____		

- Database Management Systems
- Data Analysis and Visualization
- Mental Health and Well-being
- Remote Work and Productivity

Abstract

Remote work's growing prominence has sparked concerns about its effects on mental health. Existing studies explore this relationship but lack detailed analysis with modern database tools. This project bridges that gap by leveraging MongoDB to analyse employee data, uncovering how remote work influences mental health, stress, and work-life balance. By identifying trends, this project aims to inform organizations on improving employee well-being. Its significance lies in its ability to provide actionable insights, benefiting companies in adapting to remote and hybrid work models effectively.

Introduction

The project aims to explore the relationship between remote work and mental health, motivated by the rise in remote work practices and mental health challenges. By analysing a dataset sourced from Kaggle, the project uses MongoDB to store and query data efficiently. The system processes data related to employee demographics, work conditions, and mental health factors to derive insights. The proposed database system will allow organizations to make data-driven decisions to enhance employee well-being.

Problem Statement

The shift towards remote work has created challenges for organizations in understanding its impact on employees' mental health. Current systems are limited in providing holistic insights from large datasets, often leaving companies without adequate data to address employee stress and improve work-life balance. This project solves this problem by using advanced database queries to analyse the relationship between remote work and mental health.

Problem Solution/Objectives of the Proposed System

The project utilizes MongoDB to query and analyse data on remote work and mental health. Objectives include:

- i. Analyse remote work's impact on mental health, stress, and work-life balance.
- ii. Enable aggregation queries to identify trends and correlations in the data.
- iii. Store query results for visualization and extended analysis.

Objectives:

BO-1: Analyse the relationship between remote work and mental health challenges.

BO-2: Provide actionable data insights for organizations.

BO-3: Develop a scalable MongoDB-based system for employee data analysis.

Related System Analysis/Literature Review

Application Name	Weakness	Proposed Project Solution
Survey Systems	Lack of advanced data processing	Utilizes MongoDB for efficient aggregation queries.
HR Tools	Limited focus on mental health	Focused analysis of mental health and work conditions.
BI Tools	High cost, low customization	Open-source, customizable MongoDB-based solution.

Vision Statement

For organizations analysing the impact of remote work on employee well-being, the Remote Work and Mental Health Database Project is a MongoDB-based system that efficiently processes and analyses employee data. Unlike traditional survey tools, this project provides in-depth aggregation and trend analysis, offering actionable insights to improve work environments.

Scope

The system processes data on demographics, work conditions, and mental health factors using MongoDB. Features include importing datasets, running aggregation queries, and exporting results. Future enhancements may include data visualization and a user-friendly frontend.

Modules

Module 1: Data Import

FE-1: Import CSV data into MongoDB.

FE-2: Verify data integrity.

Module 2: Query Execution

FE-1: Execute pre-defined aggregation queries.

FE-2: Save results as JSON.

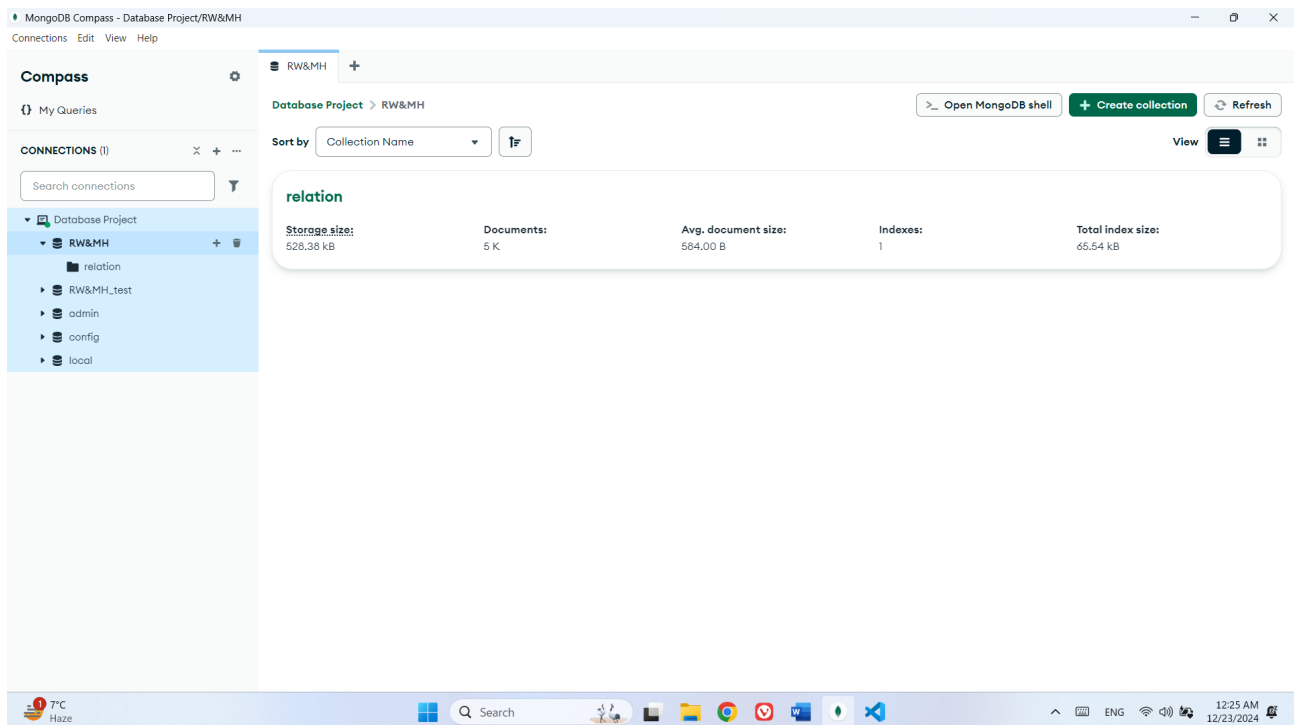
Module 3: Result Analysis

FE-1: Analyze JSON outputs for trends.

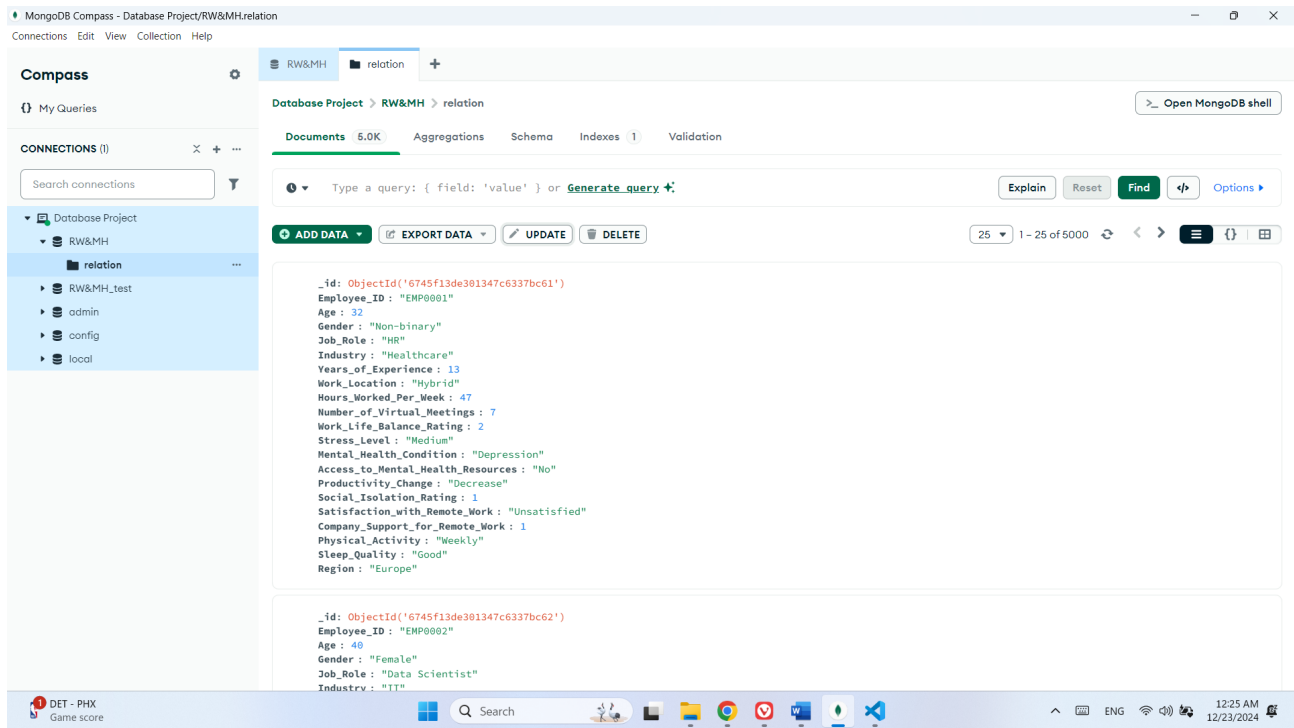
FE-2: Prepare insights for visualization.

Screenshots

Database Setup

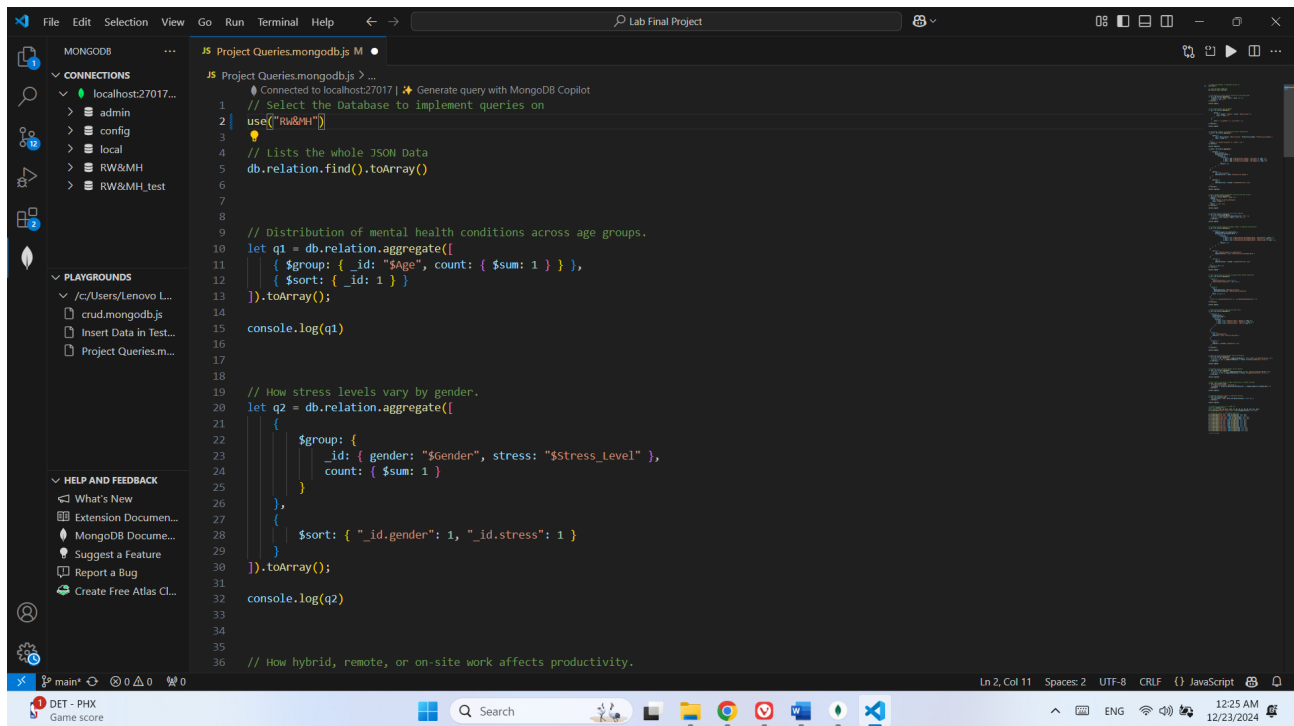


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Description: Shows how the dataset appears in MongoDB Compass.

Query Execution



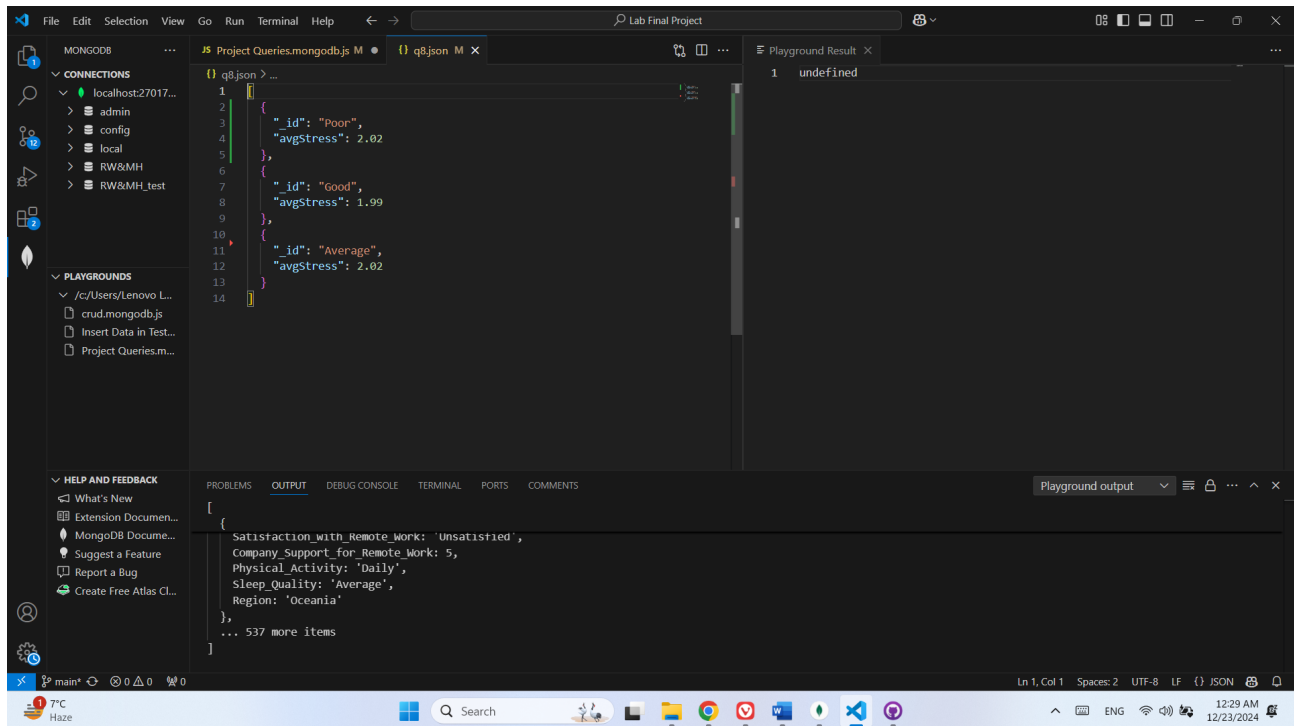
Description: VS Code with query files open.

Query Outputs

 q1		12/23/2024 12:26 AM	JSON Source File	2 KB
 q2		12/23/2024 12:26 AM	JSON Source File	2 KB
 q3s1		12/23/2024 12:26 AM	JSON Source File	2 KB
 q3s2		12/23/2024 12:26 AM	JSON Source File	1 KB
 q4		12/23/2024 12:26 AM	JSON Source File	1 KB
 q5		12/23/2024 12:26 AM	JSON Source File	1 KB
 q6		12/23/2024 12:26 AM	JSON Source File	1 KB
 q7		12/23/2024 12:26 AM	JSON Source File	1 KB
 q8		12/23/2024 12:26 AM	JSON Source File	1 KB
 q9		12/23/2024 12:26 AM	JSON Source File	1 KB
 q10		12/23/2024 12:26 AM	JSON Source File	1 KB
 q11		12/23/2024 12:26 AM	JSON Source File	258 KB
 q12		12/23/2024 12:26 AM	JSON Source File	446 KB
 query-results		12/23/2024 12:26 AM	JSON Source File	759 KB

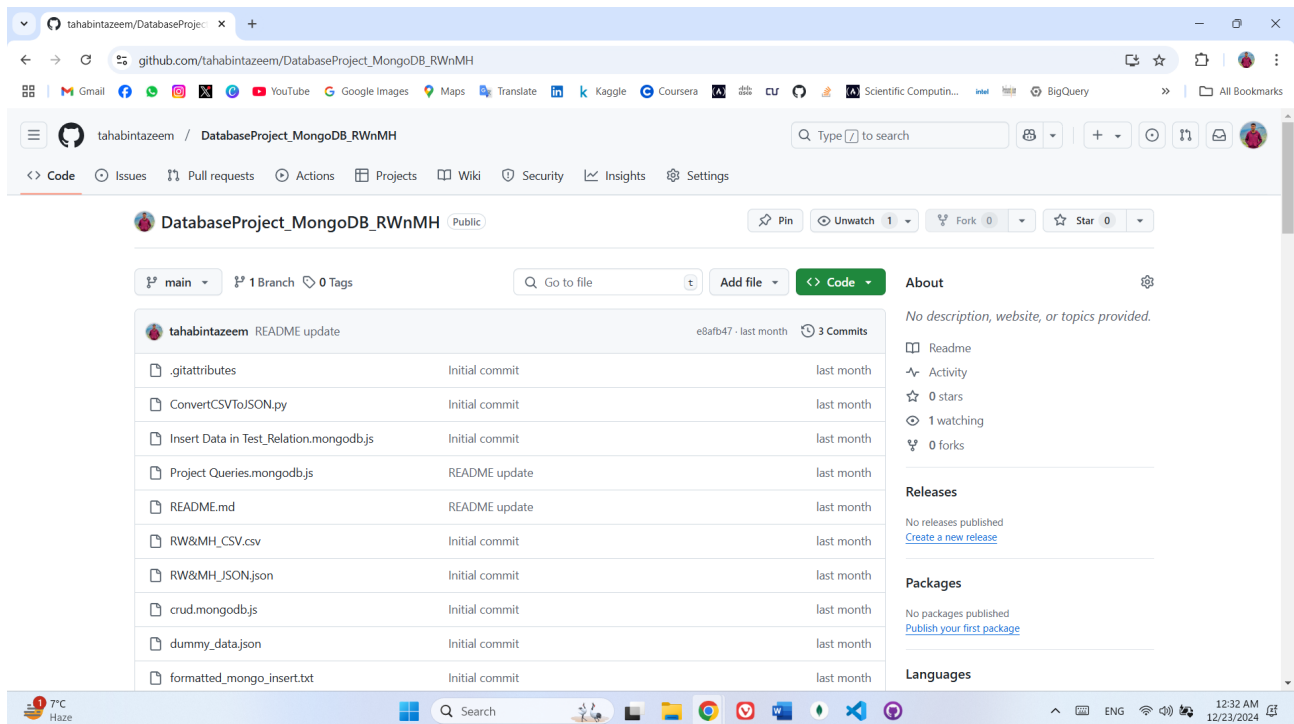
Description: JSON files created because of executing the queries.

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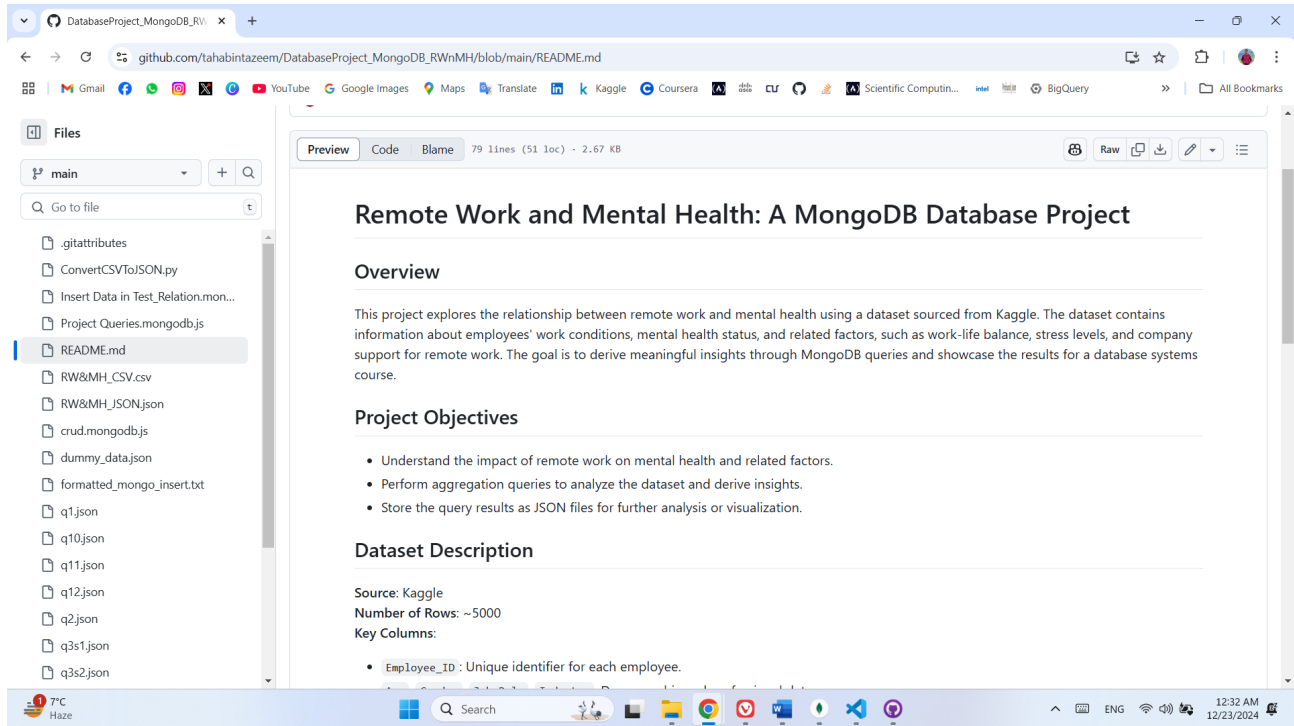
Description: A sample query result.

GitHub Repository



Description: [GitHub repository](#) structure with README, query files, and results folder.

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Description: Open README on GitHub.

System Limitations/Constraints

LI-1: Limited to MongoDB for database operations.

LI-2: Requires high computational resources for large datasets.

Data Gathering Approach

The project utilizes secondary data sourced from Kaggle, processed using MongoDB. Additional insights could be gathered through organizational surveys or interviews for extended analysis.

Tools and Technologies

Tools	Version	Rationale
MongoDB	6.0	Database storage and aggregation queries
Node.js	16.0	Script execution and integration
Python	3.9	Visualization (future enhancement)

Module-Based Work Division

Student Name	Registration Number	Responsibility
Taha Bin Tazeem	SP23-BDS-051	Module 1 and Module 2
Haidar Ali Thaheem	SP23-BDS-015	Module 3

References

- Waqi786. "Remote Work and Mental Health Dataset." Kaggle, 2022. [Online]. Available: <https://www.kaggle.com/datasets/waqi786/remote-work-and-mental-health/data>
- GitHub Repo of the Project available at: https://github.com/tahabintazeem/DatabaseProject_MongoDB_RWnMH/blob