Olympus Health

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Project Overview

Olympus Health Database Project

- Olympus Health is a disability physical determination provider that helps states verify disability claims through medical exams.
- The organization employs both W2 (staff) and 1099 (contract doctors) employees across ~22 states.
- The database is designed to manage employee data, patient records, health services, and reports.
- Core functions include scheduling exams, tracking reports, managing employee types, and supporting doctor-patient interactions.
- The main goal is to streamline operations, ensure compliance, and provide timely results to the state clients.

User Requirements

1. The database will have a complete record of both W2 and 1099 employees and their locations of residence. ✅
2. The database will have accurate exam results for patients in less than 3 days from examination ✅
3. The database will have a system that tracks the W2 employees work progress throughout the workday ✅
4. The database will have a system that tracks how many patients 1099 employees serve in a month ✅
5. The database will have a system that schedules 1099 employees for examinations. ✅
6. The database will have a system that provides a list of local alternative Doctors for 1099 employees if they call in sick or are on vacation ✅
7. The database will keep record of the location of requests including, the city/town, the state, and the type of request. ✅
8. The database will keep record of reports from the states and the general nature of the reports ✅
9. The database will keep a record of the patient's name, reason for examination, the result of the examination, and the doctor's recommendation. ✅
10. The database will keep record of local health services Olympus Health recommends, based on location, to their patients if they were to pass examination. ✅
11. The database will allow for employees to track specific doctors and patients. ✅
12. The database will keep track of when appointments or examinations take place. ✅
13. The database will have a system that keeps track of different timezones and the differences between them. ✅
14. The database will record if a W2 employee works on site or from home ✅
15. The database will not allow for multiple appointments for one doctor to be booked at the same time.
16. The database must be able to provide accurate and exact numbers/data to be considered complete. ✅
17. The database will be able to store multiple examinations for each patient without one overriding the other. ✅
18. The database will determine adequate funding for the patients based on their examination. ✅
19. The database will keep track of funds available. ✅
20. The database will allow for all employees of Olympus Health to have access, with specific clearance required for certain patients.

Business Rules

1. Employees are identified by Employee ID and have the attributes Name, Street Name, Zip Code, State, Timezone, and Phone. An employee has only one admin but an admin can have one or many employees. An employee can be a W2 employee or a 1099 employee, or someone else. A W2 employee has the additional attributes start date, end date and part time. A W2 can either be a part-time or full-time employee. A part-time W2 employee has an additional attribute called wage, while a full time W2 employee has an additional attribute called salary. A 1099 employee has the additional attributes of contract start date, contract length, contract payment amount. A 1099 employee also has one or many standby 1099 employees in case the original doctor calls in sick or is on vacation and a 1099 employee can be a substitute for many other 1099 employees.
2. Patients are identified by Patient ID and have the attributes Name, Street Address, Zip Code, State, and Phone.
3. The entity Work Check has the identifying attribute Employee ID which comes from the Employee entity and the attributes Date, Check In Times, Work Summary. A W2 employee can record many work checks but a work check can only be reported by one W2 employee.
4. Patients schedule 1099 employees for examinations on a particular date. A patient can only schedule one 1099 employee, but a 1099 employee can be scheduled for many patients. A schedule relationship has the attributes of Date, Time, and Patient Condition Description.

5. 1099 Employees can write many patient reports and Patient can be in many reports. A state can also be in many reports. A patient report can only have one 1099 employee, patient, and state. But a patient report can recommend many health services and a health service can be recommended by many patient reports. A patient report has the attributes Report Id, Exam Date, Results Turn In Date, Did Pass, Disability Diagnosis, Recommended Treatment, Recommended Funding, State ID.

6. A State can write many reports and a W2 employee can receive many reports. A 1099 employee can be included in many reports. A state report can only be written by one state, received by one W2 employee but can include many 1099 employees. The state report is identified by SR ID and have the attributes Date Received and Description. A W2 employee can receive many State Reports but a State Report can only go to one W2 employee.

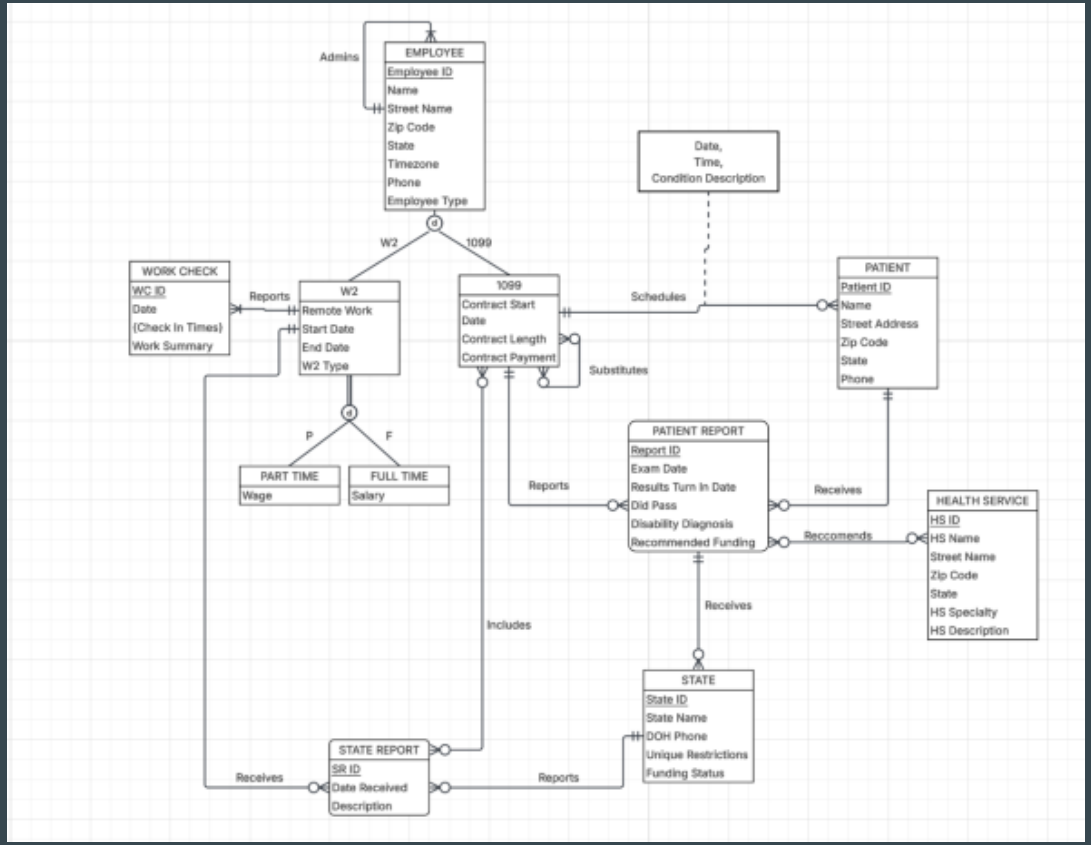
7. The entity Health Service can be recommended to many Patients and a Patient can use many Health Services. Health Service has the attributes HS ID, HS Name, Street Name, Zip Code, State, HS Specialty, and HS Description.

8. The entity State will have the attributes State ID, State Name, Dept Of Health Phone, Unique Restrictions, and Funding Status.

Conceptual Model

Key Concepts Represented in the ERD:

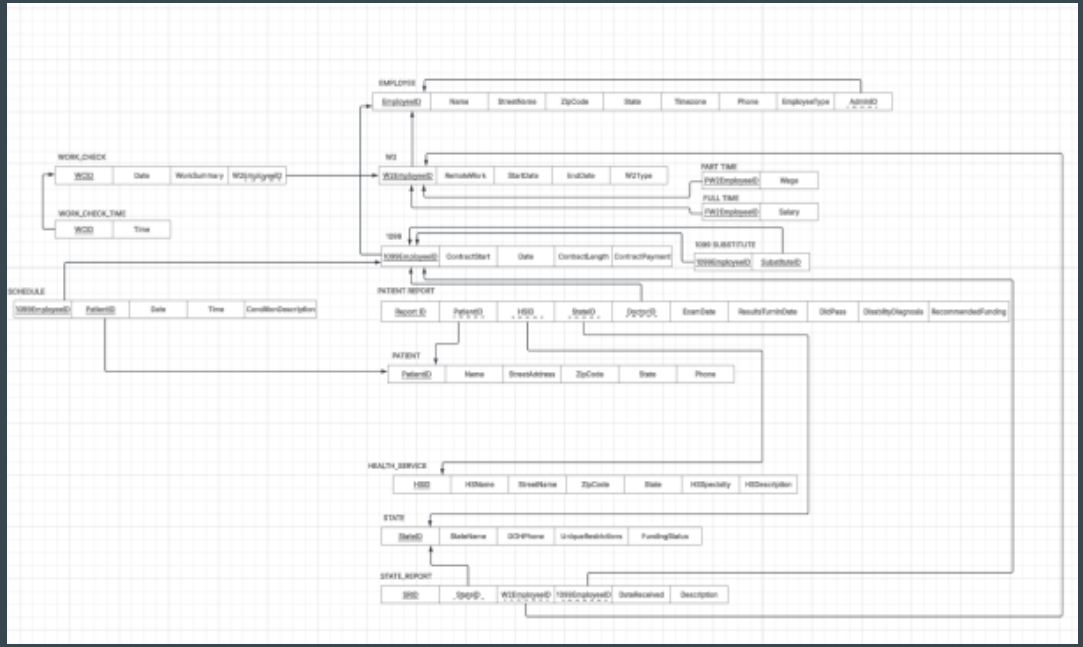
- **Employee** entity is central, split into **W2** (full-time/part-time) and **1099** (contract) types.
- **W2 employees** report daily activity via **Work Check** and receive **State Reports**.
- **1099 employees** perform patient exams and can act as **substitutes** for others.
- **Patients** schedule appointments with **1099 employees**, and their results generate **Patient Reports**.
- Each **report** may lead to **Health Service** recommendations and includes funding suggestions.
- **States** issue reports and have specific attributes like restrictions and funding status.



Logical Model

Highlights of the Logical Schema:

- Represents tables, fields, and relationships in the Olympus Health database.
- Includes primary keys (e.g., `EmployeeID`, `PatientID`) and foreign keys (e.g., `DoctorID`, `StateID`) to enforce referential integrity.
- Clearly separates employee types:
  - `W2` → `Part Time` (with wage) or `Full Time` (with salary)
  - `1099` → Has contract details and substitute logic
- Tracks appointments via the `Schedule` table and exam outcomes via the `Patient_Report` table.
- Incorporates many-to-many and one-to-many relationships across entities like `State_Report`, `Health_Service`, and `Work_Check`.



Database Implementation

Highlights of the Logical Schema:

- Represents tables, fields, and relationships in the Olympus Health database.
- Includes **primary keys** (e.g., *EmployeeID*, *PatientID*) and **foreign keys** (e.g., *DoctorID*, *StateID*) to enforce referential integrity.
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- Incorporates **many-to-many** and **one-to-many** relationships across entities like **State_Report**, **Health_Service**, and **Work_Check**.

Data Outputs / Business Questions

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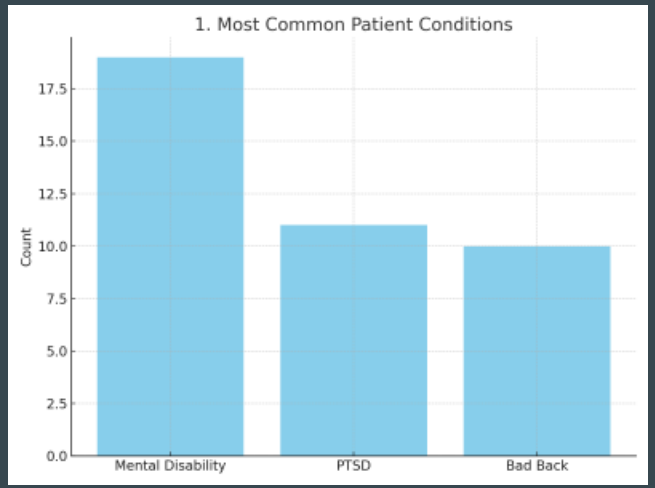
1. What are the unique **conditions** of **patients** that most commonly schedule examinations? (schedule above average).
2. What are the most common types of **health service recommended**?
3. As of 3/08/2025, how many **patients** did each **1099 employee** serve in the last month, who has the highest numbers of **patients**, and who has the lowest?
4. What is the **average number** of **patients 1099 employees** served in the last month?
5. What is the **average turnaround time** from the **start date** to the date **results** are received?
6. Provide the **customer info** on **patients** who have more than 1 **patient report** in the last 6 months.
7. How many **full time W2 employees**, **part time W2 employees**, and **1099 employees** are in each **state**?
8. How often are **doctors** that have the **highest number of passed examinations** scheduled?
9. Provide the number of **passed examinations** for each **state** and their **funding status**.
10. What is the **id and wages** for **1099 and W2 employees** who earn **above average**?

Answers to the Business Questions

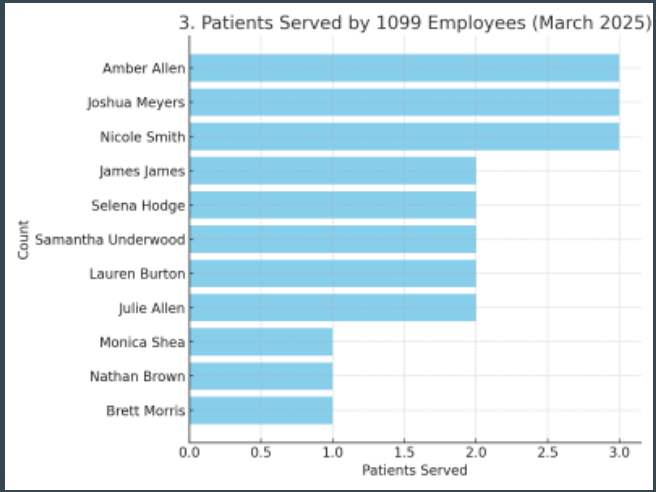
1. What are the unique **conditions** of **patients** that most commonly schedule examinations? (schedule above average).



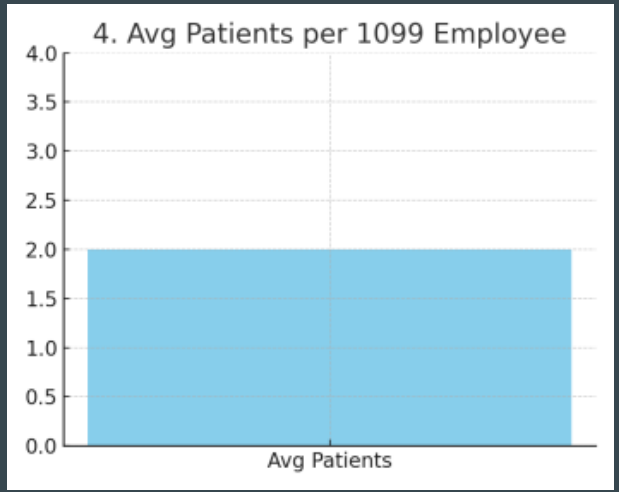
2. What are the most common types of **health service recommended**?

Answers to the Business Questions

3. As of 3/08/2025, How many patients did each 1099 employee serve in the last month, who has the highest numbers of patients, and who has the lowest?

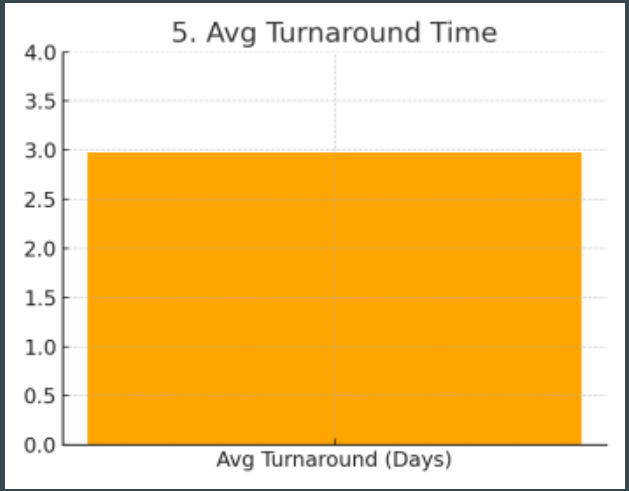


4. What is the average number of patients 1099 employees served in the last month?

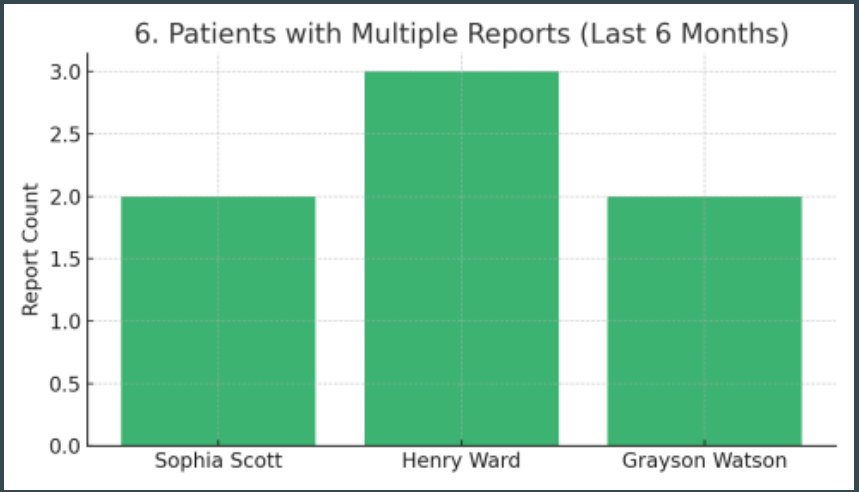


Answers to the Business Questions

5. What is the average turnaround time from the start date to the data results are received?

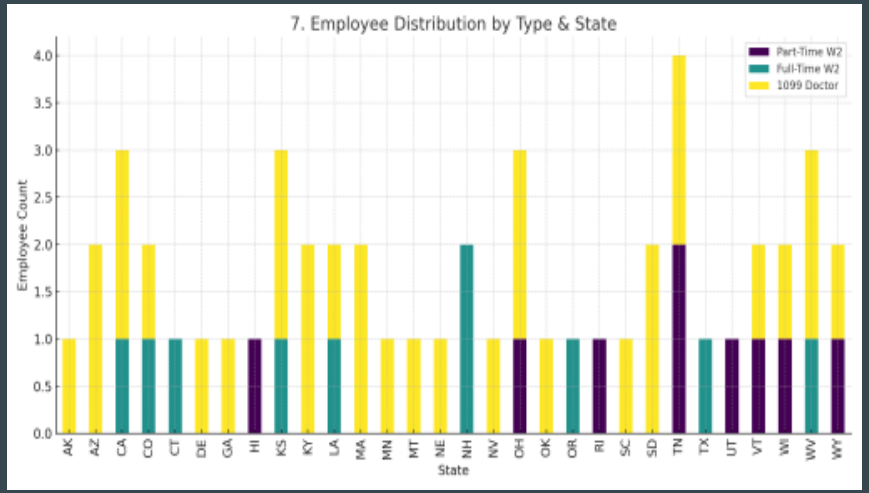


6. Provide the customer info on patients who have more than 1 patient report in the last 6 months.

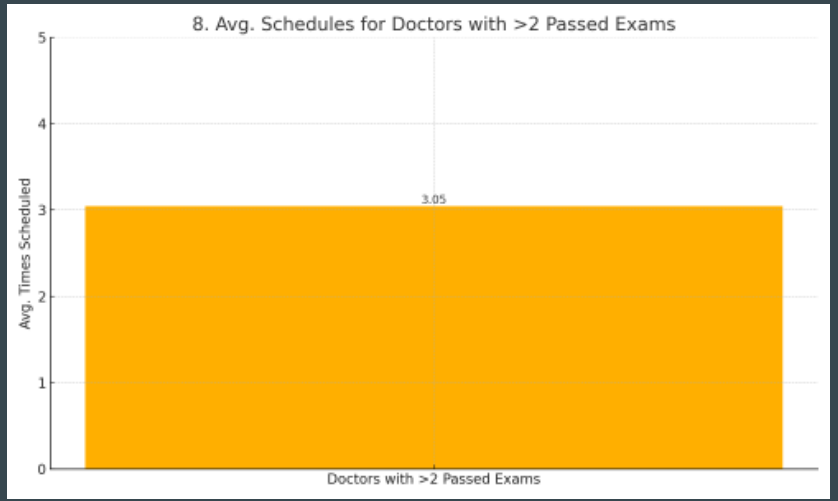


Answers to the Business Questions

7.How many full time W2 employees, part time W2 employees, and 1099 employees are in each state?

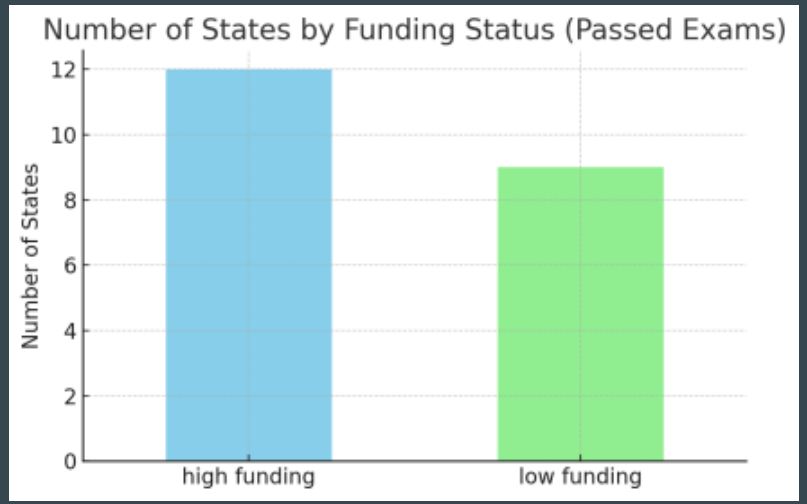


8 .On average, how often are doctors that have the higher than 2 passed examinations scheduled?

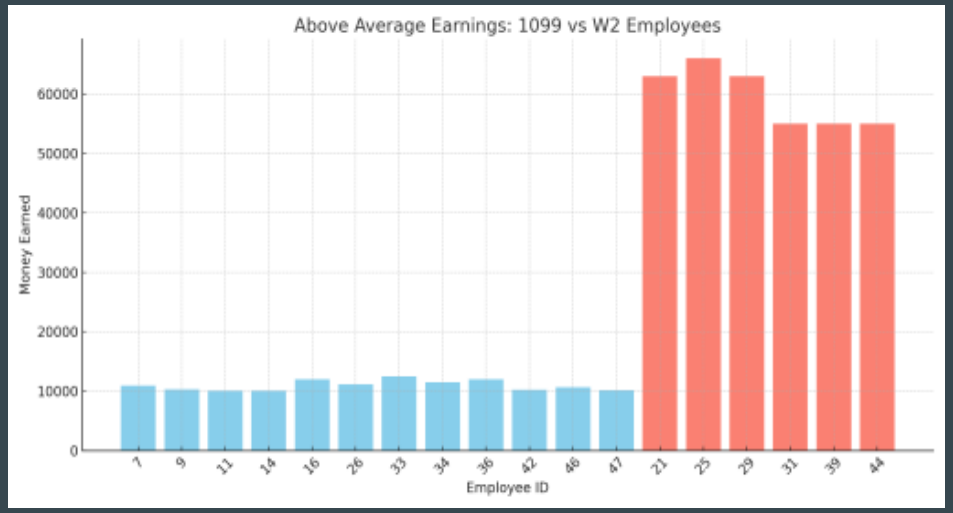


Answers to the Business Questions

9.Provide the number of passed examinations for each state and their funding status.



10. What is the id and wages for 1099 and W2 employees who earn above average?



Conclusion

- Successfully implemented a relational database for Olympus Health using structured SQL schema and populated it with real-world values.
- Translated business requirements into actionable queries, covering employee roles, patient workflows, and service performance.
- Delivered answers to **10 key business questions**, including:
    - Most common patient conditions and services
    - Employee workload and scheduling trends
    - Turnaround performance of health services
    - Identification of high-performing and high-earning staff
- Visualized data through meaningful graphs to support analysis and decision-making.
- The project demonstrates how effective database design and querying can uncover valuable operational insights.