Here's a table comparing MySQL, PostgreSQL, Microsoft SQL Server, Oracle Database, and Node.js focusing on their role as web application environments:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Feature** | **MySQL** | **PostgreSQL** | **Microsoft SQL Server** | **Oracle Database** | **Node.js** |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
| **Type** | Open-Source | Open-Source | Commercial (Free edition available) | Commercial | Open-Source |
| **Target Audience** | Small to medium businesses, web developers | Advanced users, enterprise applications, web developers | Enterprise, medium to large businesses | Large enterprises, mission-critical applications | Web developers, backend developers |
| **Key Features** | - High performance  - Wide adoption  - Extensive documentation  - ACID compliance  -Replication  - Scalability | - Advanced SQL compliance  - Extensible  -ACID  -compliance  -Support  for JSON  MVCC  - Rich indexing | - Advanced analytics  - High availability  -Integration with Microsoft ecosystem  -Reporting services  -Advanced security features | - High performance  - Scalability  - Advanced security  - Extensive features  -Comprehensive support for SQL standards - Data warehousing  - Clustering | -Asynchronous, non-blocking I/O  - Event-driven architecture  - Large ecosystem of libraries  - Excellent for real-time applications  - High performance for web applications  - V8 engine for fast execution of JavaScript |
| **Ease of Use** | - User-friendly  - Easy setup and administration - Abundant community support | - Steeper learning curve than MySQL - Extensive documentation  - Rich set of features | - User-friendly interface (SSMS)  - Comprehensive documentation - Easy integration with Microsoft products | - Complex setup  - Requires specialized knowledge  - Extensive official documentation - Strong vendor support | - Easy to learn for JavaScript developers  - Lightweight and fast  - Vast number of packages available (npm)  - Active community support |

**Explanations:**

1. **MySQL**:
   * **Type**: Open-source, which means it is freely available.
   * **Target Audience**: Suitable for small to medium businesses and web developers due to its simplicity and wide adoption.
   * **Key Features**: Known for high performance, replication, scalability, and compliance with ACID properties.
   * **Ease of Use**: Generally considered user-friendly with extensive documentation and community support.
2. **PostgreSQL**:
   * **Type**: Open-source, known for its robustness and advanced features.
   * **Target Audience**: Attracts advanced users, enterprise applications, and web developers who need more complex features and extensibility.
   * **Key Features**: Offers advanced SQL compliance, support for JSON, MVCC, and rich indexing options.
   * **Ease of Use**: Steeper learning curve compared to MySQL but offers extensive documentation and a rich feature set.
3. **Microsoft SQL Server**:
   * **Type**: Commercial, with a free edition (Express) available.
   * **Target Audience**: Geared towards enterprise, medium to large businesses, and those invested in the Microsoft ecosystem.
   * **Key Features**: Includes advanced analytics, high availability, integration with Microsoft products, reporting services, and advanced security features.
   * **Ease of Use**: User-friendly interface (SSMS), comprehensive documentation, and seamless integration with other Microsoft products.
4. **Oracle Database**:
   * **Type**: Commercial, with a strong reputation for reliability and performance.
   * **Target Audience**: Large enterprises and mission-critical applications due to its robust features and high performance.
   * **Key Features**: Provides advanced security, extensive SQL standards support, data warehousing, and clustering capabilities.
   * **Ease of Use**: Complex setup and administration, requiring specialized knowledge, but backed by extensive documentation and vendor support.
5. **Node.js**:
   * **Type**: Open-source, used primarily for server-side scripting.
   * **Target Audience**: Web developers and backend developers, particularly those familiar with JavaScript.
   * **Key Features**: Features an event-driven architecture, asynchronous non-blocking I/O, a large ecosystem of libraries, and high performance for web applications.
   * **Ease of Use**: Easy for Java

**HANDS-ON BONUS**

1. Retrieve all movies:

```sql

SELECT \* FROM movies;

```

2. Retrieve movies released after the year 2000:

```sql

SELECT Title, Director, Year

FROM movies

WHERE Year > 2000;

```

3. Retrieve all movies directed by Christopher Nolan:

```sql

SELECT Title, Genre, Year

FROM movies

WHERE Director = 'Christopher Nolan';

```