From questions to queries: The database assistant agent

A 99x perspective on navigating the agentic era
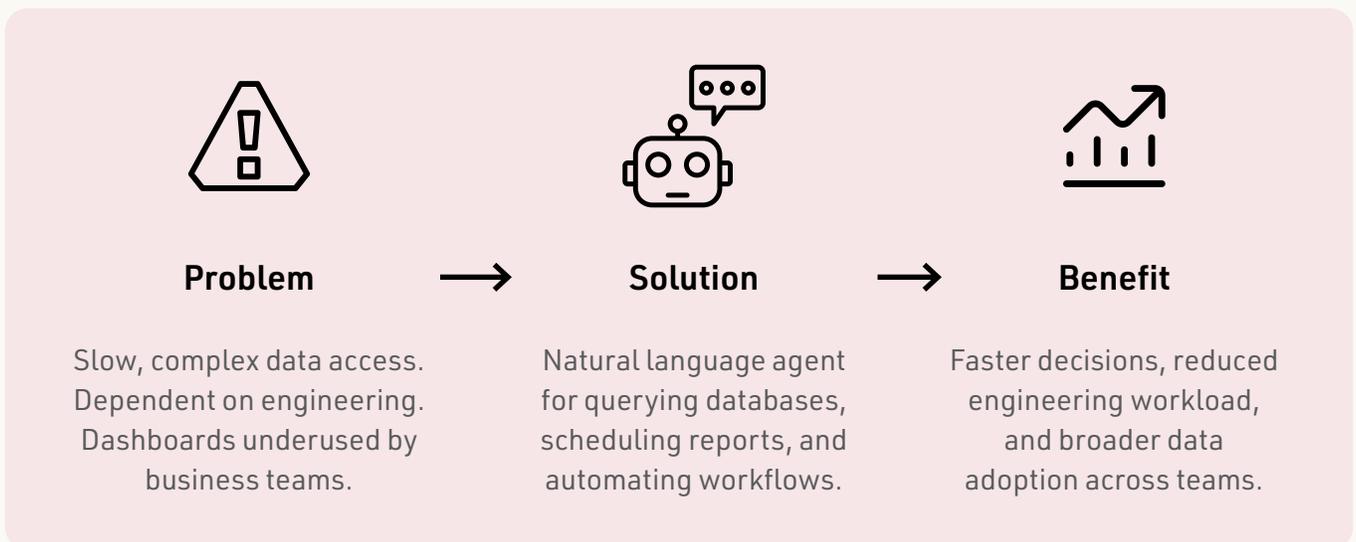
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Executive summary

Modern organizations are rich in data, but accessing it is often slow, complex, and dependent on technical experts. Analysts and engineers are constantly fielding requests, and dashboards can be difficult for non-technical teams to use.

The Database Assistant Agent removes these barriers. Business users can query databases, schedule reports, and automate workflows simply by speaking or typing in natural language.

Example use cases:

• "Show me products that cost more than $1,000."

• "Send a weekly sales report to the leadership team every Monday at 9 AM."

The agent understands intent, context, and action, translating everyday questions into accurate database queries. The result: faster decisions, reduced engineering workload, and wider adoption of data across teams.

Problem → **Solution** → **Benefit**

Slow, complex data access. Dependent on engineering. Dashboards underused by business teams.

Natural language agent for querying databases, scheduling reports, and automating workflows.

Faster decisions, reduced engineering workload, and broader data adoption across teams.

The challenge

Even small data requests today often lead to:

- Tickets to engineering or BI teams

- Long turnaround times

- Delayed decisions

Key bottlenecks:

Current reality	Impact
SQL expertise required	Spikes demand on engineering teams
Dashboards require training	Slow adoption across teams
Manual reporting	Teams act reactively
Automations require coding	Limited recurring insights

How the database assistant agent works

Scenario-Based demonstration

Simple query

User: "Show me products that cost more than $1,000."

- Agent generates and executes the query, returning results instantly.

Complex query

User: "Show me high-value orders over $10,000 with customer names."

- Agent filters orders, joins customer data, and returns results with all relevant fields.

Automation

User: "Create a daily report at 9 AM for orders over $10,000 and email sales@company.com."

- Scheduler agent sets up the recurring automation

- GraphQL agent queries the database
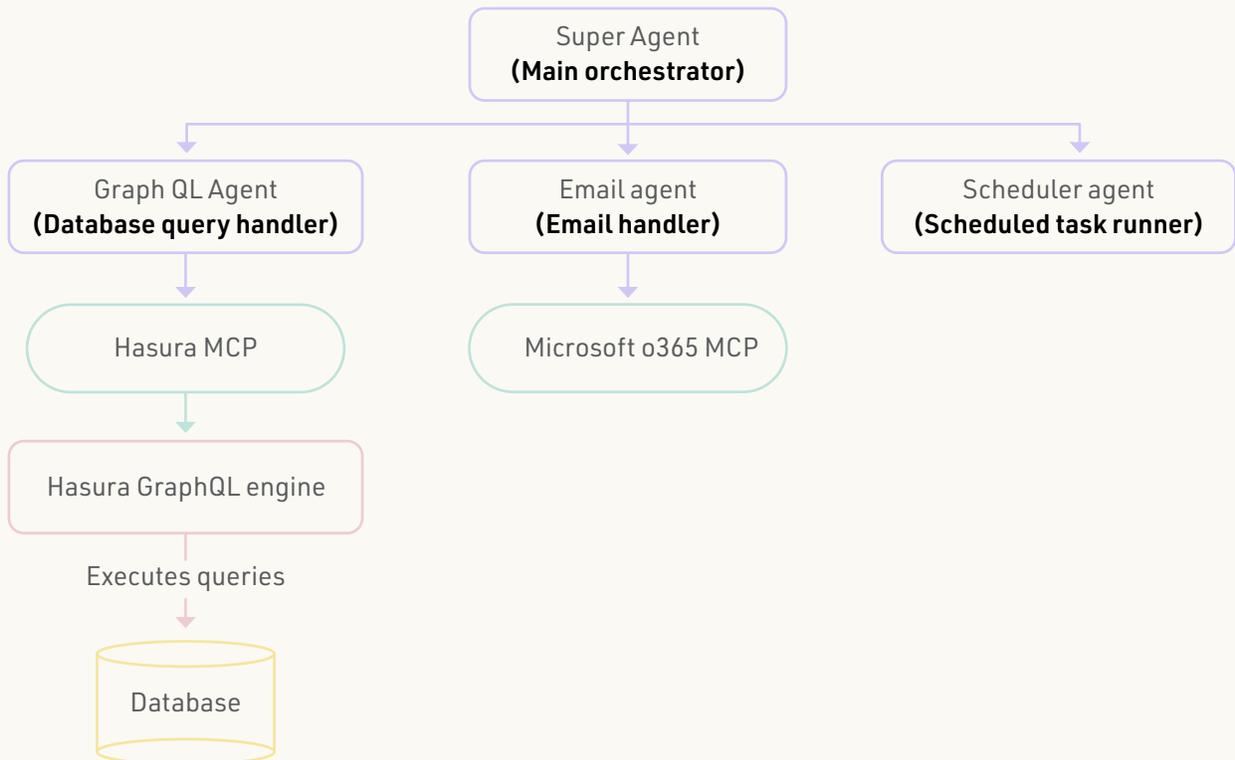
- Email agent sends formatted reports automatically

Users never see SQL, GraphQL, or scripts, only actionable insights.

Multi-Agent architecture

Agent	Role	Key features
Super agent	Orchestrator	Routes requests to the right agent based on intent
GraphQL agent	Query builder	Uses Hasura to discover schema, build queries, format results
Email agent	Communicator	Composes and sends email summaries, supports CSV attachments
Scheduler agent	Automation engine	Runs recurring queries, triggers emails, maintains per-user isolation

Key advantage: Hasura acts as a universal adapter, so the agent works with any supported database (PostgreSQL, MySQL, SQL Server, MongoDB, etc.) without needing specialized connectors.

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Benefits for organizations

Benefit	Impact
Non-technical users access real-time data	Faster decisions
Eliminates SQL reliance	Engineering focuses on high-value work
Works with any Hasura-supported database	No lengthy migration
Built-in automation	Fewer manual tasks
Email summaries with zero code	Business-friendly experience

Challenges & limitations

- **Hasura dependency:** Requires Hasura GraphQL Engine.

- **Complex queries:** Multi-table aggregations may need clarification.

- **Query performance:** Accuracy prioritized over optimization; large datasets may need tuning.

Roadmap - Future enhancements

Phase	Enhancement
Phase 1	**Query generation** – Better handling of deeply nested joins & aggregations
Phase 2	**Database coverage** – Support multiple databases in one conversation
Phase 3	**Write operations** – Controlled inserts/updates via role-based access
Phase 4	**Data governance** – Admin console, access control, audit logs
Phase 5	**Observability** – Query insights & usage metrics

The roadmap reflects how the Database Assistant Agent evolves from simple querying to a fully governed and observable autonomous data assistant.

Conclusion

The database assistant agent transforms the way organizations interact with data:

- From dependency to autonomy - business teams get answers instantly

- From repetitive tasks to automation - reports and workflows run without manual effort

- From complexity to simplicity - no SQL or scripts needed

This is more than productivity; it's a fundamental shift in how companies access, act on, and scale insights.

For further technical reading please read case study here

Watch demo video here

About us

99x is a global product engineering company with decades of experience co-creating technology solutions for customers across Europe and beyond. With deep expertise in AI engineering, product development, and scalable delivery, 99x helps organizations turn bold ideas into market-ready products.

Lets talk Agentic AI or reach us at productengineering@99x.io

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