



TITLE

ABOUT

CONTENT

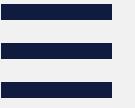
OTHERS

# Gideon

## AI ASSISTANT FOR FINANCE AND ACCOUNTING



382054	Arnav Gilankar	22311644
382024	Manaswi Shekokar	22310637



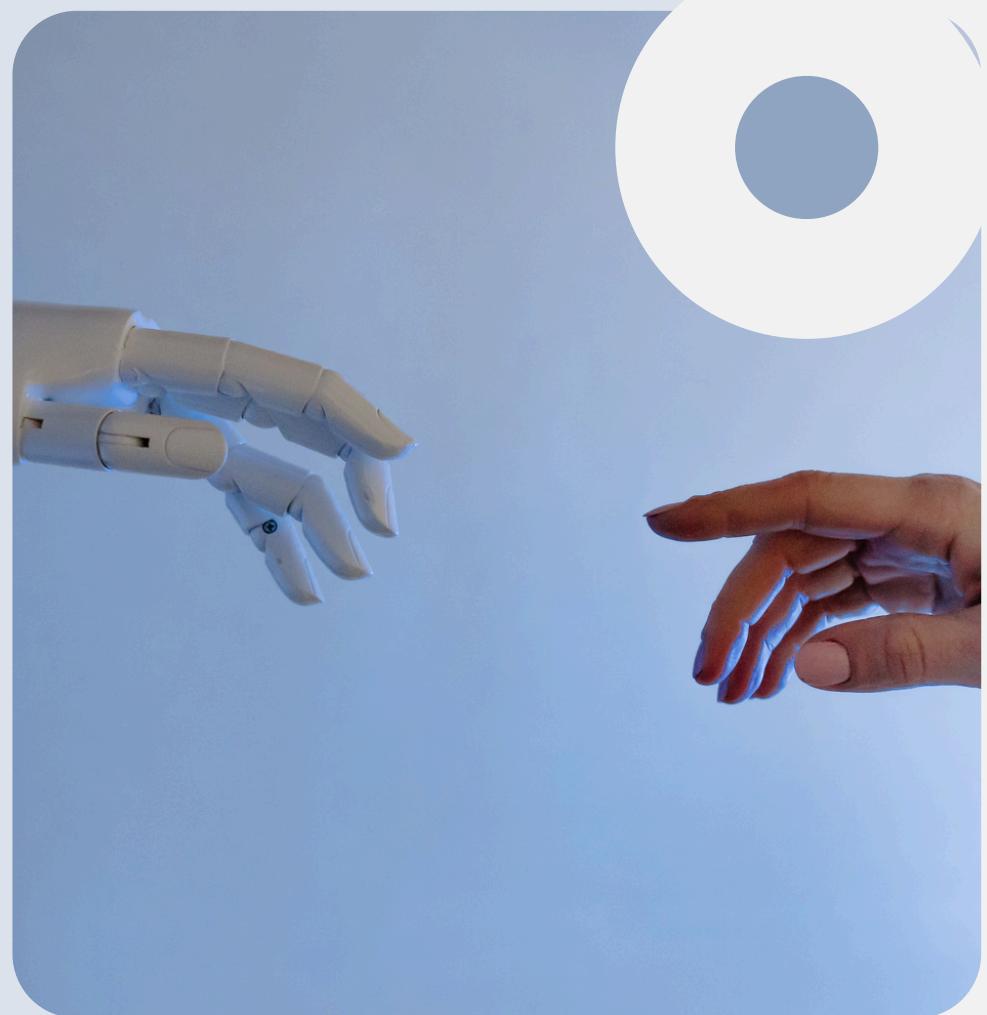
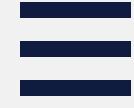
# Problem Statement

Finance teams spend 60 to 70% of their time on manual tasks, such as data entry, expense categorization, document processing, and report generation. This leaves less time for strategic analysis. Traditional systems do not have smart automation and need technical skills to pull insights from financial data.

## Key challenges:

- Document processing inefficiency - static repositories requiring manual search and review
- Limited accessibility to financial insights - requires complex queries and technical skills
- Manual bottlenecks in month-end closing, and expense management





Recent advances in agentic AI and deep learning provide breakthrough solutions for automated finance and accounting operations. Traditional automation improves efficiency and accuracy, but it often fails to provide adaptive insights or smooth integration within complex business workflows. AI agents, powered by domain-specific LLMs, fill these gaps by constantly learning financial context and interacting naturally with business data. However, they need careful orchestration and integration with essential systems.

### **Existing techniques:**

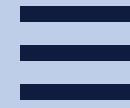
- Manual bookkeeping and reconciliation by finance teams
- Tipalti AI (Invoice capture, fraud detection, coding automation)
- Trullion AI (Contextual compliance review, vertical agentic chatbots)

This project is an AI finance and accounting assistant that works with Odoo ERP. It uses Llama 3.1 (8B) with RAG to answer questions, analyze documents like PDF, Excel, Word, and CSV, and automate tasks such as expense analysis, sales analysis, and adding tables into ERP modules and the Odoo database.

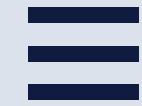


Category	Sub-Categories	Content
Section A	Sub-section A1, Sub-section A2	<p>Text content for section A, row 1.</p> <p>This row contains three columns: Category, Sub-Categories, and Content.</p>
Section B	Sub-section B1, Sub-section B2	<p>Text content for section B, row 1.</p> <p>This row contains three columns: Category, Sub-Categories, and Content.</p>
Section C	Sub-section C1, Sub-section C2	<p>Text content for section C, row 1.</p> <p>This row contains three columns: Category, Sub-Categories, and Content.</p>
Section D	Sub-section D1, Sub-section D2	<p>Text content for section D, row 1.</p> <p>This row contains three columns: Category, Sub-Categories, and Content.</p>

Comprehensive Analysis of AI and RPA Integration in Corporate Finance						
Key Findings		Methodology & Results			Conclusion & Implications	
Paper Title	Publisher	Published Date	Methodology	Results	Gap	Summary
Driving Efficiency and Risk Management in Finance through AI and RPA	Preprint server (DOI: 10.20944/preprints202407.0083.v1)	2024-07-01	Review and analytical discussion of AI and RPA integration in financial accounting and management	AI+RPA boost efficiency, accuracy, and cost-effectiveness in finance; RPA faces challenges with unstructured data and complex decisions.	RPA struggles with unstructured data and complex decisions; cloud scaling and further technical work needed.	Explores AI and RPA for corporate finance efficiency and risk management, noting RPA limits and digital transformation drivers.
Artificial Intelligence Applications in Accounting and Finance	IEEE Conference Proceedings (DOI: 10.1109/icetsis61505.2024.10459526)	2024-01-28	Review of AI applications in accounting and finance, showcasing use cases and diverse techniques.	AI streamlines financial processes, automates audits and taxes, supports decision-making, and enhances reliability and efficiency.	Adoption barriers: implementation, data, and governance; provides use cases but no new performance metrics.	Maps AI tools in finance (expert systems, agents, NLP, RPA, blockchain, ML) and evaluates impacts on reliability and timeliness.



Paper Title	Publisher	Publish date	Methodology	Results	Gap	Summary
Automation and the Future of Accounting: A Study of AI Integration in Financial Reporting	IEEE Conference Proceedings (DOI: 10.1109/ickecs61492.2024.10616967)	2024-04-18	Thorough literature analysis with comparative analysis and data-driven outcomes	AI (NLP, ML, data analytics) transforms data interpretation and decision making in accounting and offers comparative performance insights	Concerns about data privacy, algorithmic bias, and human role displacement; recommends policy and corporate guidance	Consolidates literature on AI in financial reporting, contrasts technology performance qualitatively, and foregrounds ethical and governance questions that warrant empirical follow-up



For deploying our AI finance assistant, we used **Docker** to deploy the Odoo system. Inside the odoo container, we installed **Ollama** to run Llama 3.1 (8B) and set up a **PostgreSQL** database to manage ERP data. This setup ensures we can scale, move, and integrate smoothly with the Odoo environment.

### Llama 3.1 (8B)

used for its efficiency and accuracy in financial text understanding, enabling natural language interaction with ERP data

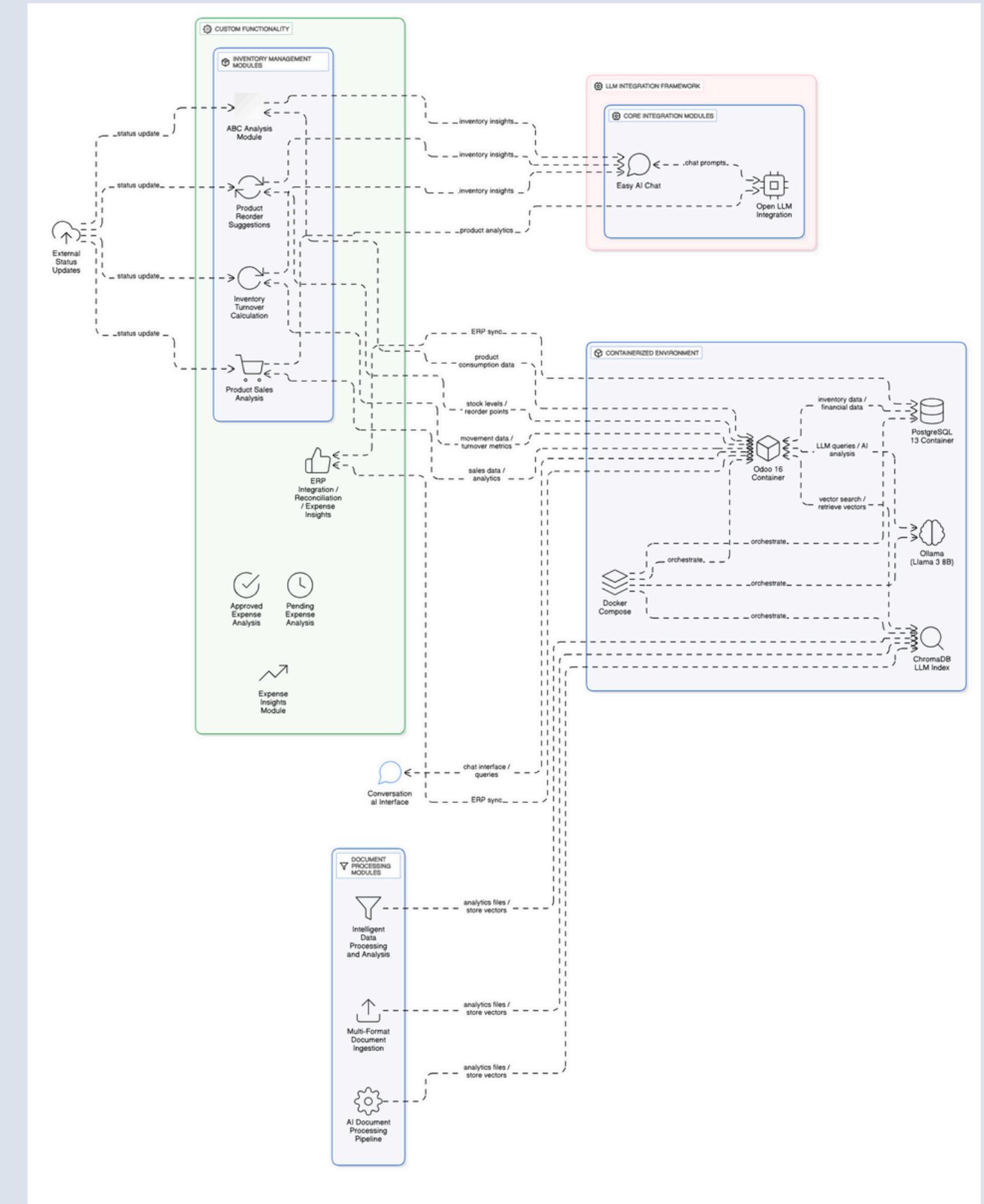
### Retrieval-Augmented Generation (RAG):

Ensures context-aware responses by retrieving semantically relevant chunks from documents, overcoming LLM's knowledge limitations.

### Functionalities

Document analysis, table-to-ERP processing, query answering, and AI-powered expense & product sales analysis.

# ARCHITECTURE OF PROJECT



Mitchell Admin - a day ago  
show table in the purchaseorderdb\_like document

llama3.1:8b <ai@ollamalocal.ai> - a day ago  
Here are the tables from your uploaded documents:

Table 1: CSV Table from purchaseorderdb\_like.csv  
Size: 5 rows x 7 columns

id	name	partnerid	dateorder	amounttotal	currency_id	state
34	P00034	198	01-09-2025	1500	21	sent
35	P00035	203	02-09-2025	2300.5	21	purchase
36	P00036	200	03-09-2025	1200.75	21	draft
37	P00037	202	04-09-2025	4500	21	sent
38	P00038	203	05-09-2025	3000.25	21	purchase

Summary: Found 1 table(s) with 5 total data rows.

Ask anything...

**Fig.1. Uploading Document and retrieving information and analysis**

Mitchell Admin - a day ago  
Append this vendor purchase data to Odoo

llama3.1:8b <ai@ollamalocal.ai> - a day ago  
I need clarification on your intent

I detected tables in your documents but I'm not sure which Odoo module you want to append to.  
Detected Tables: 1 table(s)  
• CSV Table from purchaseorderdb\_like.csv (5 rows)

Possible Odoo modules:  
• Purchase Order (Confidence: 280.0%)  
• Hr Expense (Confidence: 270.0%)  
• Sale Order (Confidence: 50.0%)

Please clarify which type of data you want to append:  
• Sales Order - Customer sales, quotations, orders  
• Purchase Order - Vendor purchases, procurement  
• Inventory - Stock movements, quantities, locations  
• Expenses - Employee expenses, reimbursements  
• Accounting - Journal entries, financial records

Ask anything...

**Fig.2. Deciding in which the data should be appended**

Mitchell Admin - 2 hours ago  
YES

llama3.1:8b <ai@ollamalocal.ai> - 2 hours ago  
:counter-clockwise-arrows-button: Processing... Appending data to Purchase Orders

:check-mark-button: \*\*Success!\*\* Data appended to \*\*Purchase Orders\*\*

\*\*:bar-chart: Results:\*\*  
- \*\*Records Created:\*\* 5  
- \*\*Target Model:\*\* purchase.order  
- \*\*Record IDs:\*\* 34, 35, 36, 37, 38

\*\*:link: Column Mapping:\*\*  
- 'id' → 'id'  
  
- name → name - partner\_id → partner\_id - date\_order → date\_order - amount\_total → amount\_total - currency\_id → currency\_id - state → state

Ask anything...

**Fig.4. Data Successfully appended**

LLM Chat Prompts Knowledge Configuration

AI Chat for llm.resource 3

Mitchell Admin - 2 hours ago  
books: Sources: 1. purchaseorderdb\_like.csv (Relevance: 11.1%)  
append this vendor purchase data to odoo

llama3.1:8b <ai@ollamalocal.ai> - 2 hours ago  
:bar-chart: Table Classification Results  
Your Request: "append this vendor purchase data to odoo"

:bullseye: Recommended: Purchase Orders  
Confidence: High (78.7%)  
Description: Vendor purchases and procurement orders

:file-folder: Document Analysis  
Detected: 1 table(s) with 5 total rows  
Table 1: CSV Table from purchaseorderdb\_like.csv (5 rows x 7 columns)  
Columns: id, name, partnerid, dateorder, amounttotal ... (+2 more)

:counter-clockwise-arrows-button: Next Steps  
Please respond with one of the following:

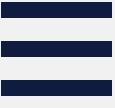
"YES" or "CONFIRM"  
Proceed with recommended table

"NO" or "CANCEL"  
Cancel this operation

Or specify: "Use [table name]" to override (e.g., "Use Purchase Orders")

Ask anything...

**Fig.3. Confirming to append the data into database**

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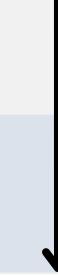
Purchase Orders Products Reporting Configuration

Requests for Quotation

Search... Filters Group By Favorites 1-38 / 38

Vendor Reference	Reference	Vendor	Company	Buyer	Order Deadline	Activities	Source Document	Untaxed	Total	Status	Billing Status
	P00038	Williams LLC	My Company (San Francisco)	Mitchell Admin				₹ 0.00	₹ 0.00	Purchase Order	Nothing to Bill
	P00037	Taylor Inc	My Company (San Francisco)	Mitchell Admin	10 days ago			₹ 0.00	₹ 0.00	RFQ Sent	Nothing to Bill
	P00036	Rodriguez-James	My Company (San Francisco)	Mitchell Admin	11 days ago			₹ 0.00	₹ 0.00	RFQ	Nothing to Bill
	P00035	Williams LLC	My Company (San Francisco)	Mitchell Admin				₹ 0.00	₹ 0.00	Purchase Order	Nothing to Bill
	P00034	Fox Group	My Company (San Francisco)	Mitchell Admin	13 days ago			₹ 0.00	₹ 0.00	RFQ Sent	Nothing to Bill
	P00033	Reese-Walker	My Company (San Francisco)	Mitchell Admin				₹ 37,173.47	₹ 39,032.13	Purchase Order	Nothing to Bill
	P00032	Taylor Inc	My Company (San Francisco)	Mitchell Admin	33 days ago			₹ 11,555.28	₹ 12,133.04	RFQ	Nothing to Bill
	P00031	Shaw, Nelson and Martin	My Company (San Francisco)	Mitchell Admin				₹ 38,096.64	₹ 40,001.48	Purchase Order	Nothing to Bill
	P00031	Collins Group	My Company (San Francisco)	Mitchell Admin				₹ 117,388.52	₹ 123,257.96	Purchase Order	Nothing to Bill
	P00029	Villa-Romero	My Company (San Francisco)	Mitchell Admin	33 days ago			₹ 20,769.92	₹ 21,808.42	RFQ	Nothing to Bill
	P00028	Miller, Williams and Moore	My Company (San Francisco)	Mitchell Admin	33 days ago			₹ 12,809.40	₹ 13,449.88	RFQ	Nothing to Bill
	P00027	Taylor Inc	My Company (San Francisco)	Mitchell Admin				₹ 25,022.60	₹ 26,273.74	Purchase Order	Nothing to Bill
	P00026	Strickland-Palmer	My Company (San Francisco)	Mitchell Admin				₹ 38,364.26	₹ 40,282.48	Purchase Order	Nothing to Bill
	P00025	Collins Group	My Company (San Francisco)	Mitchell Admin	33 days ago			₹ 16,256.80	₹ 17,069.64	RFQ	Nothing to Bill
	P00024	Williams Inc	My Company (San Francisco)	Mitchell Admin				₹ 30,740.97	₹ 32,278.03	Purchase Order	Nothing to Bill
	P00023	Glenn, Jordan and Beasley	My Company (San Francisco)	Mitchell Admin	33 days ago			₹ 22,556.32	₹ 23,684.12	RFQ	Nothing to Bill
	P00022	Williams LLC	My Company (San Francisco)	Mitchell Admin	33 days ago			₹ 55,791.86	₹ 58,581.44	RFQ	Nothing to Bill
	P00021	Shaw, Nelson and Martin	My Company (San Francisco)	Mitchell Admin				₹ 31,136.10	₹ 32,692.90	Purchase Order	Nothing to Bill
	P00020	Strickland-Palmer	My Company (San Francisco)	Mitchell Admin				₹ 43,774.70	₹ 45,963.44	Purchase Order	Nothing to Bill
	P00019	Roberts-Wilson	My Company (San Francisco)	Mitchell Admin	33 days ago			₹ 29,850.53	₹ 31,343.05	RFQ	Nothing to Bill
	P00018	Glen, Jordan and Beasley	My Company (San Francisco)	Mitchell Admin	33 days ago			₹ 32,110.62	₹ 33,716.16	RFQ	Nothing to Bill
	P00017	Fox Group	My Company (San Francisco)	Mitchell Admin				₹ 71,921.67	₹ 75,517.75	Purchase Order	Nothing to Bill
	P00016	Roberts-Wilson	My Company (San Francisco)	Mitchell Admin				₹ 23,661.45	₹ 24,844.53	Purchase Order	Nothing to Bill
	P00015	Williams LLC	My Company (San Francisco)	Mitchell Admin				₹ 59,752.13	₹ 62,739.75	Purchase Order	Nothing to Bill
	P00014	Williams LLC	My Company (San Francisco)	Mitchell Admin				₹ 27,128.94	₹ 28,485.38	Purchase Order	Nothing to Bill
	P00013	Taylor Inc	My Company (San Francisco)	Mitchell Admin	33 days ago			₹ 51,826.85	₹ 54,418.21	RFQ	Nothing to Bill

Fig.5. Purchase database



<input type="checkbox"/>	P00038	Williams LLC	My Company (San Francisco)	Mitchell Admin				₹ 0.00	₹ 0.00	Purchase Order	Nothing to Bill
<input type="checkbox"/>	P00037	Taylor Inc	My Company (San Francisco)	Mitchell Admin	10 days ago			₹ 0.00	₹ 0.00	RFQ Sent	Nothing to Bill
<input type="checkbox"/>	P00036	Rodriguez-James	My Company (San Francisco)	Mitchell Admin	11 days ago			₹ 0.00	₹ 0.00	RFQ	Nothing to Bill
<input type="checkbox"/>	P00035	Williams LLC	My Company (San Francisco)	Mitchell Admin				₹ 0.00	₹ 0.00	Purchase Order	Nothing to Bill
<input type="checkbox"/>	P00034	Fox Group	My Company (San Francisco)	Mitchell Admin	13 days ago			₹ 0.00	₹ 0.00	RFQ Sent	Nothing to Bill

Fig.6. Modified Database

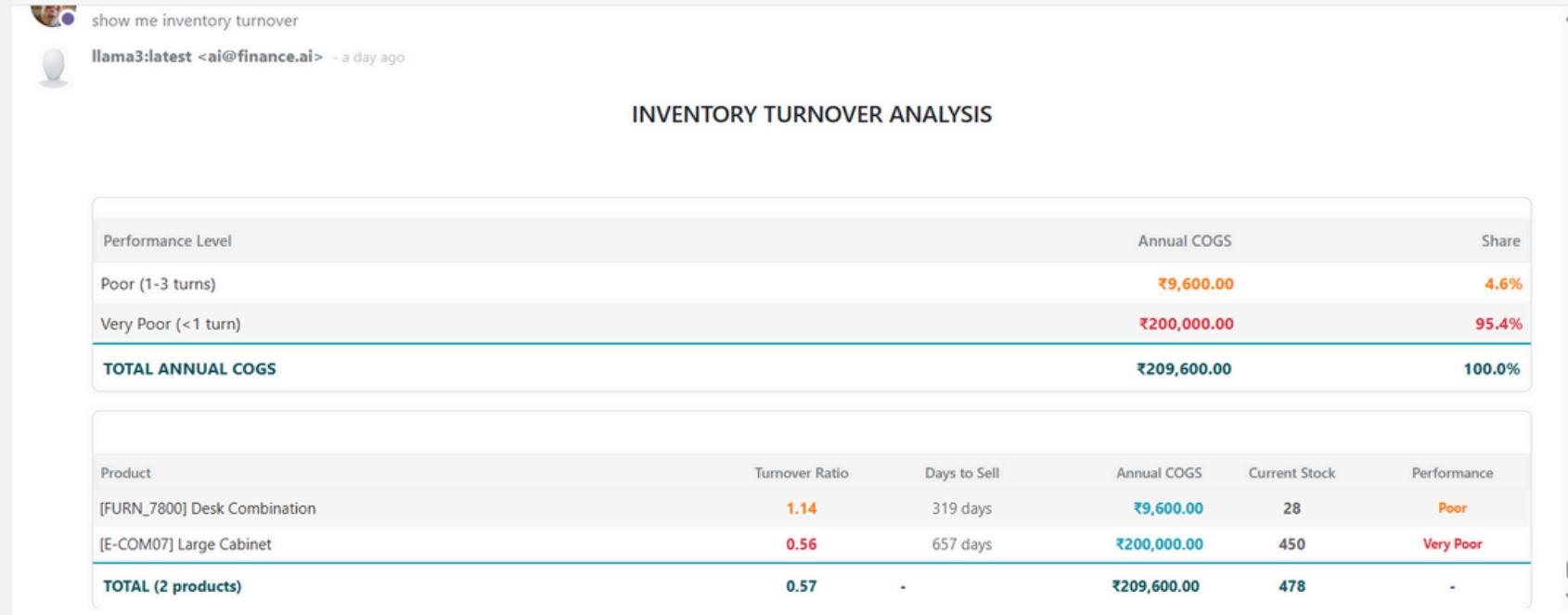


Fig.7. Turnover calculation of Products

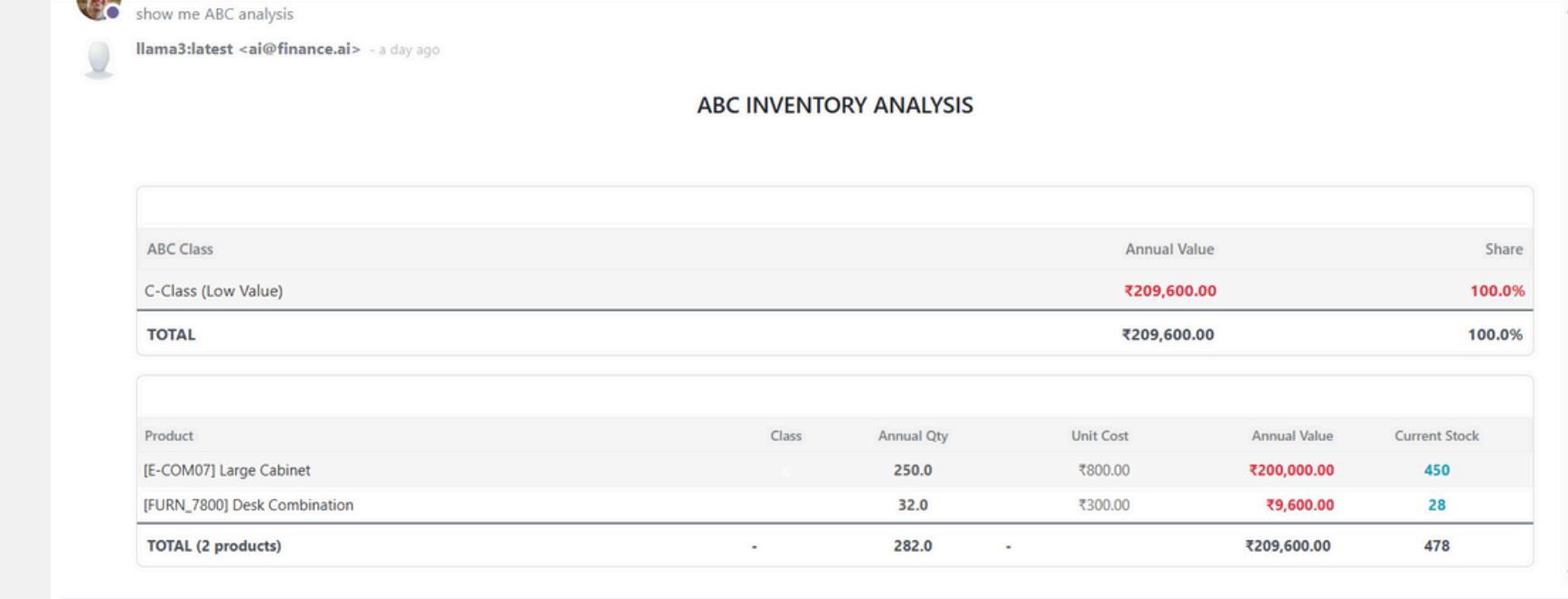


Fig.8. ABC classification Analysis

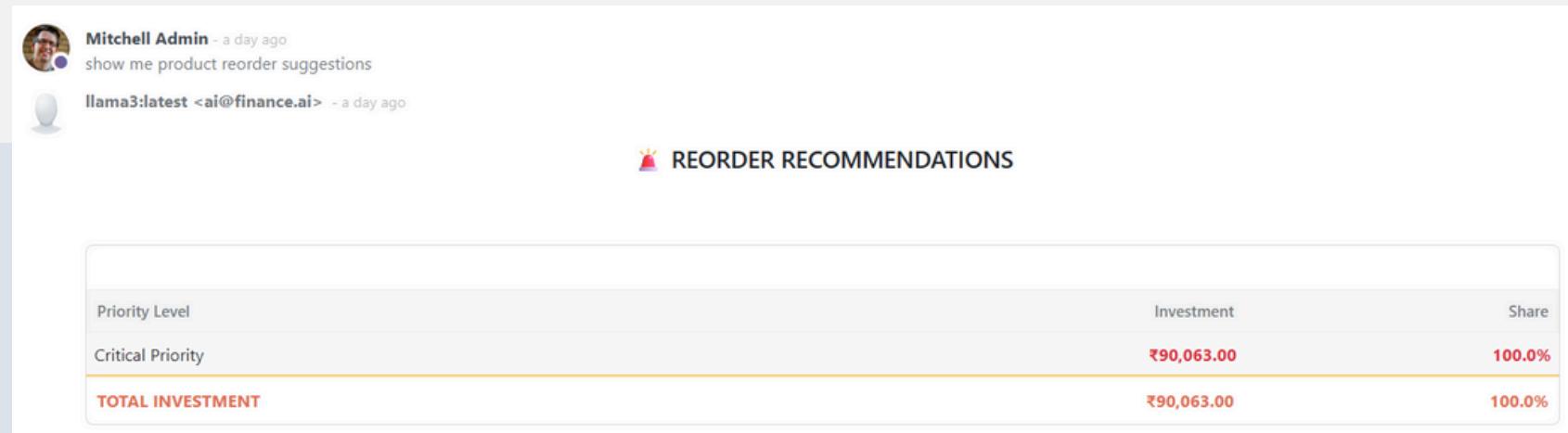
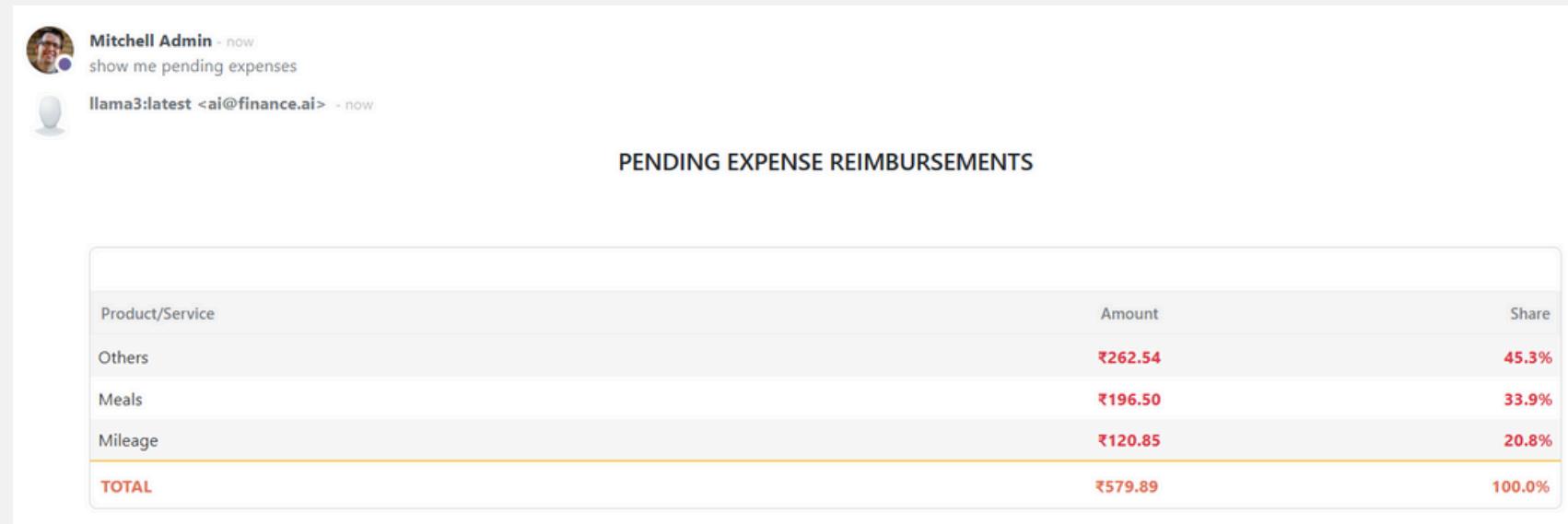


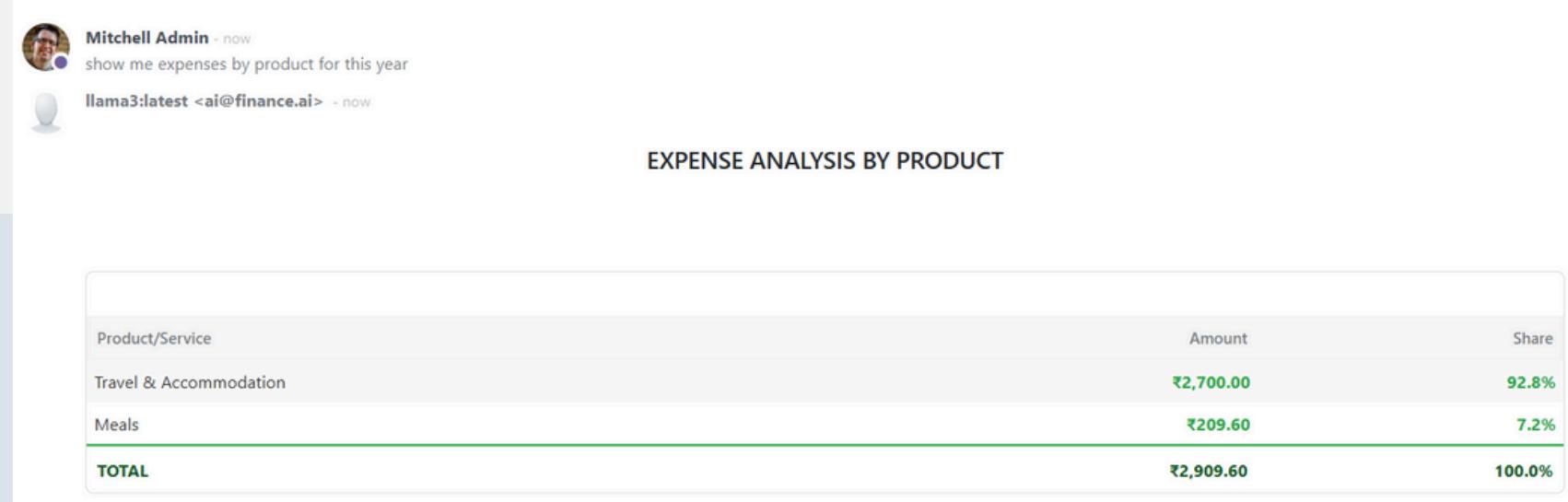
Fig.9. Product Reorder Suggestions

Product	Current	Order Qty	Lead Time	Cost	Priority
[E-COM06] Corner Desk Right Sit	0	11	1 days	₹6,600.00	Critical
[E-COM09] Large Desk	0	7	2 days	₹9,093.00	Critical
[FURN_6741] Large Meeting Table	0	5	7 days	₹22,500.00	Critical
[FURN_7888] Desk Stand with Screen	0	6	3 days	₹12,060.00	Critical
[FURN_8220] Four Person Desk	0	5	7 days	₹12,500.00	Critical
[FURN_8888] Office Lamp	0	45	5 days	₹1,575.00	Critical
[FURN_8900] Drawer Black	0	60	1 days	₹1,200.00	Critical
[FURN_8999] Three-Seat Sofa	0	8	7 days	₹8,000.00	Critical
[FURN_9001] Flipover	0	6	4 days	₹10,200.00	Critical
[FURN_9999] Office Design Software	0	17	7 days	₹3,995.00	Critical
[FURN_1118] Corner Desk Left Sit	2	30	5 days	₹2,340.00	Critical

Fig.10. Product Reorder Suggestions

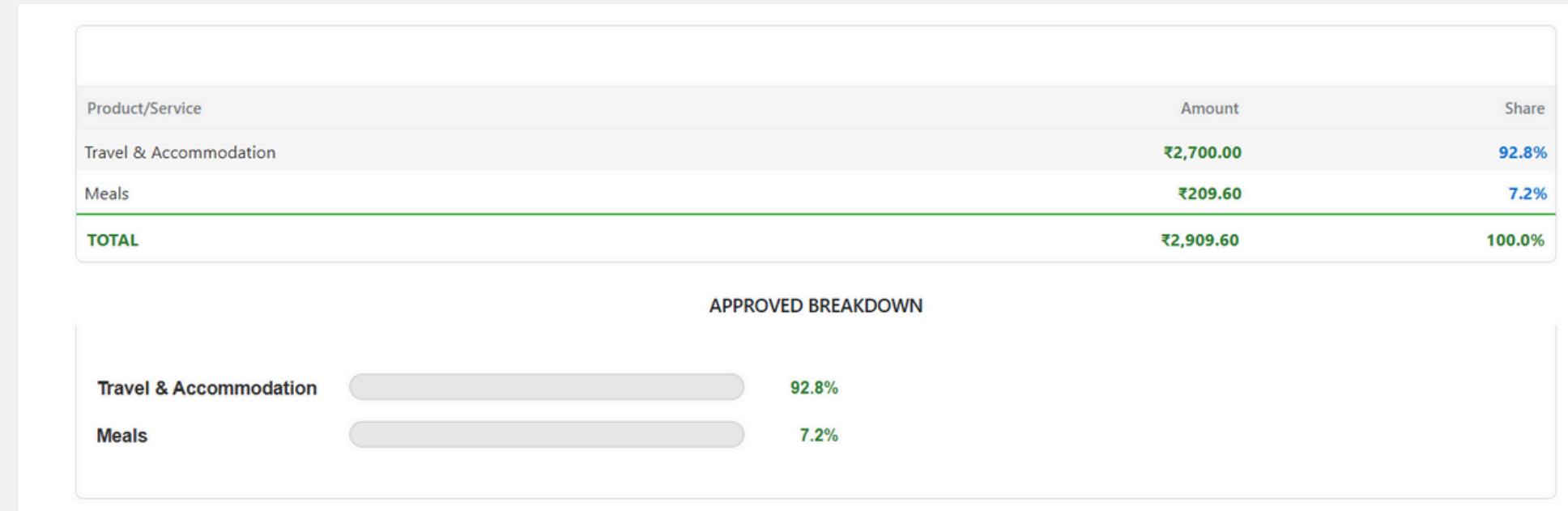
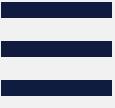
**Fig.11. Pending Expenses Analysis**

Description	Employee	Date	Amount	Status
Drinks	Keith Byrd	2025-08-05	₹42.50	reported
Pizzas	Keith Byrd	2025-08-05	₹154.00	reported
Paintball	Keith Byrd	2025-08-05	₹25.00	reported
Lamp	Ronnie Hart	2025-06-02	₹28.99	reported
Chairs	Ronnie Hart	2025-06-02	₹55.75	reported
Travel by Car	Marc Demo	2025-01-15	₹120.85	reported
Lunch with Customer	Marc Demo	2025-01-15	₹152.80	reported
<b>TOTAL PENDING</b>			<b>₹579.89</b>	-

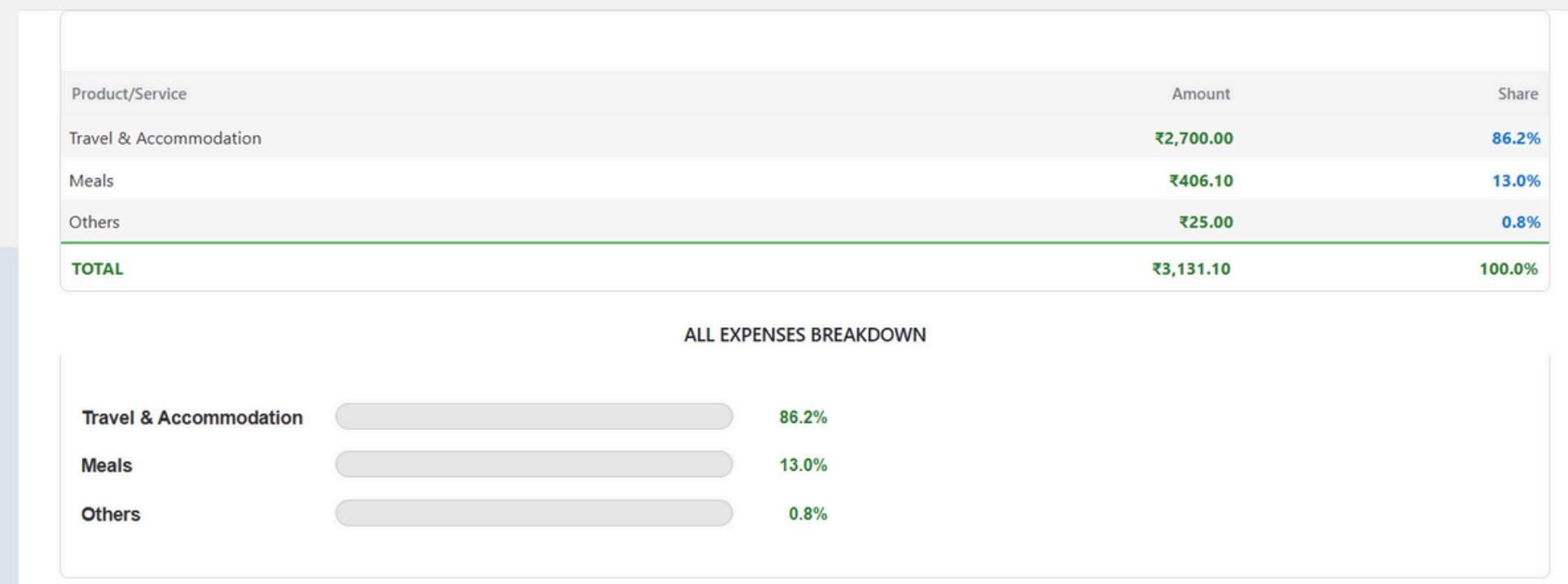
**Fig.12. Products with Pending Expense Records****Fig.13. Products with Approved Expense Analysis**

Description	Employee	Date	Amount	Status
Hotel Expenses	Mitchell Admin	2025-08-17	₹2,000.00	approved
Lunch	Mitchell Admin	2025-08-15	₹56.80	approved
Lunch with Customer	Mitchell Admin	2025-08-13	₹152.80	approved
Travel by Air	Mitchell Admin	2025-08-12	₹700.00	approved
<b>TOTAL ANALYZED</b>			<b>₹2,909.60</b>	-

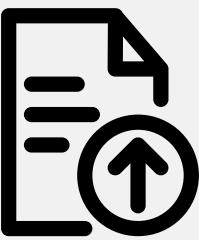
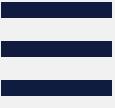
**Fig.14. Products with Approved Expense Records**

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**Fig.15. Expense Insights for Approved Expenses**



**Fig.16. Expense Insights for All Expenses**



AI Chat for llm.resource 3

Mitchell Admin - 6 days ago  
what are the terms and conditions mentioned in 4559925326.pdf file

llama3.1:8b <ai@ollamalocal.ai> - 6 days ago  
Based on the provided document excerpts with relevance scores, I will provide an answer to the user's question.  
The terms and conditions mentioned in the 4559925326.pdf file are as follows:

**General Terms**

- The terms and conditions in this Purchase Order (PO) shall be in addition to any other terms and conditions agreed between the parties under any other Agreement. (Document 1, Relevance: 40.5%)
- In case of any inconsistency between the terms and conditions in this PO and those in the Agreement, such inconsistency must be brought to the notice of the Buyer for clarification before accepting this PO. (Document 1, Relevance: 40.5%)

**Product Inspection and Verification**

- The Buyer or its customer should be afforded the rights to inspect and verify at Seller's premises, the sub-contracted product inspection, to ensure conformity. (Document 2, Relevance: 25.3%)
- The Seller must ensure that the product conforms to the latest version of the drawing. (Document 2, Relevance: 25.3%)

**Product Identification and Traceability**

- Product identification and traceability should be clearly mentioned in the product supplied by the Seller. (Document 3, Relevance: 23.7%)
- The same information is also mentioned in Document 4.

**Delivery Requirements**

- Delivery vehicles should comply with safety and statutory norms, including a valid fitness certificate, Emission certificate, Insurance, and driving license. (Document 3, Relevance: 23.7%)

**Documentation Requirements**

- The Seller must provide various documents, including:
  - Bill of Lading / Air Way Bill
  - Certificate of Origin
  - Packing List
  - Agency Certificate
  - Insurance Certificate
  - Freight Bill
  - Fumigation Certificate (as applicable)
  - Invoice in quadruplicate showing description, quantity, rate, and value. CCCN classification of the item invoiced should be indicated invariably on the invoice.
- These documents must be provided within 3 days from the date of shipment. (Document 4, Relevance: 23.4%)

**MSME Registration**

- If the supplier is registered under MSME for the first time, they must provide a certificate copy to avail the terms of payment as per the MSME. Otherwise, they will be considered as Non-MSME members. (Document 5, Relevance: 22.9%)

It's worth noting that while multiple documents mention similar information, there are no apparent contradictions between them.

References:

- Document 1: General Terms
- Document 2: Product Inspection and Verification
- Document 3: Product Identification and Traceability, Delivery Requirements
- Document 4: Documentation Requirements
- Document 5: MSME Registration

Ask anything...

Link Select Assistant Ollama Local llama3.1:8b Tools

Fig.17. RAG response

### Backend

- LLAMA 3.1: 8B
- RAG
- NLP

### Libraries

- PANDAS
- NUMPY
- MATH
- STATISTICS
- PYPDF2,
- PDFPLUMBER,
- PYTHON-DOCX,
- OPENPYXL



### DataBase

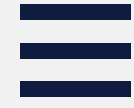
- POSTGRESQL
- CHROMADB

### Software

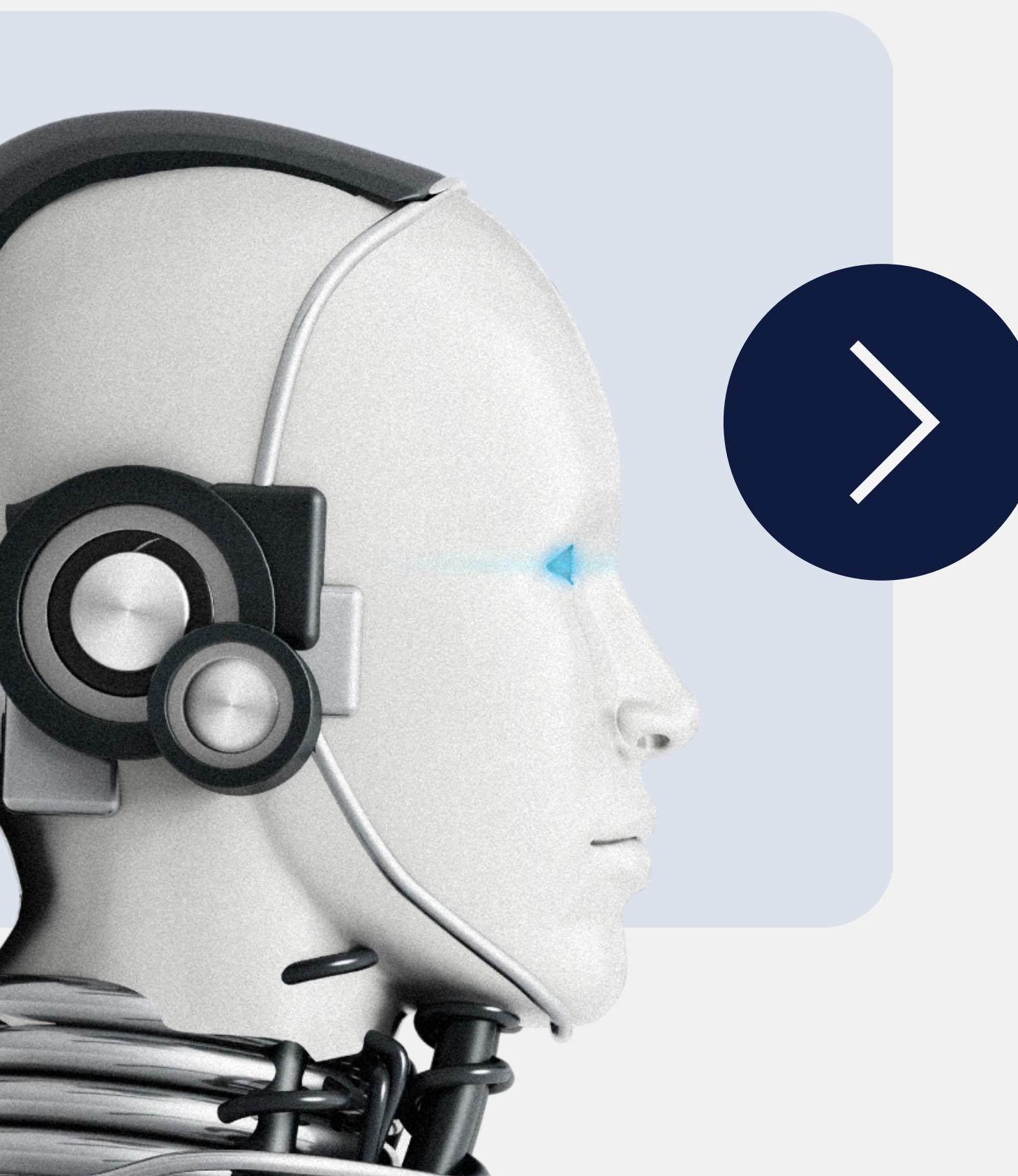
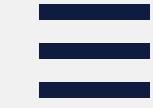
ODOO 16

### Programming Language

PYTHON, XML, JS

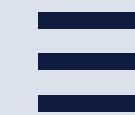


Paper	Focus	Key Contribution
Liu (2024)	AI in Accounting & Financial Mgmt.	Innovative AI use in <b>fraud detection, auditing, forecasting</b> .
Rahim & Chishti (2024)	AI in Accounting & Finance	Broad review of <b>ML, NLP, robotics in finance</b> , efficiency insights.
Kuaiber et al. (2024)	AI & Automation in Reporting	Demonstrates <b>automation in financial reporting</b> using AI.
Gideon	AI-powered ERP Integration	Combines <b>LLM + RAG + Agentic AI</b> inside Odoo: document analysis, semantic search, table-to-record automation across <b>sales, purchase, HR, inventory, and expenses</b> .



- **Seamless Odoo Integration** – combines LLM + RAG directly into ERP workflows, not just standalone chat.
- **Agentic Capabilities** – AI can not only answer but also act (e.g., append tables, create records, trigger workflows).
- **Adaptive RAG** – relevance boosting, similarity scoring, and multi-model embeddings for more accurate retrieval.
- **End-to-End Automation** – from reading business documents → extracting insights → creating ERP records.
- **Expense Analysis** – Identifies, categorizes, and summarizes employee or product-related expenses.
- **Product Sales Analysis** – Tracks stock movement, valuations, and product quantities for better decision-making.

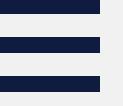


[HOME](#)[ABOUT](#)**FUTURE SCOPES**[OTHERS](#)

- Adding voice-enabled interaction for hands-free operations.
- Build task-specific agents (Finance Agent, HR Agent, Inventory Agent) for domain expertise and faster decision-making.
- Introduce autonomous AI agents that can plan, decide, and execute multi-step workflows in Odoo (e.g., auto-approving expenses, creating purchase orders).

[HOME](#)[ABOUT](#)**CONCLUSION**[OTHERS](#)

- Integrates LLMs with Odoo for smart document processing.
- Uses RAG + ChromaDB to retrieve relevant context from attachments.
- Supports conversational AI within Odoo chat threads.
- Automates table-to-record creation in sales, purchase, HR, inventory, and accounts.
- Enhances productivity by converting unstructured data into actionable insights.



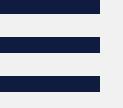
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# Thankyou



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ANY QUESTIONS ??