



FinTrack

KEEPING YOUR FINANCES ON
THE RIGHT TRACK

Fintrack - A Comprehensive Accounting Management System

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Project Description

FinTrack is an advanced database-driven accounting system designed to streamline financial management processes for businesses of all sizes. The system provides a robust platform for managing financial transactions, generating accurate reports, and ensuring compliance with accounting standards. Built using a relational database, FinTrack enables secure storage, retrieval, and manipulation of financial data, offering users a reliable tool to monitor and manage their accounts. FinTrack is an ideal solution for businesses seeking to enhance their accounting processes, improve financial oversight, and ensure the accuracy of their financial data.

Functional Requirements

Module # 1 - Automated Transaction Recording Module

This module handles the automatic recording, categorization, and updating of financial transactions.

Feature 1a: Transaction Entry

Description:

The system automatically records financial transactions such as sales, purchases, payments, and receipts.

User Access:

- 1) Administrator: Can view, edit, and delete all transactions.
- 2) Accountant: Can create and edit transactions but cannot delete them.
- 3) Auditor: Can view all transactions.

Feature 1b: Transaction Categorization

Description:

Automatically categorizes transactions into predefined categories (e.g., revenue, expenses) based on rules set by the Administrator.

User Access:

- 1) Administrator: Can set and modify categorization rules.
- 2) Accountant: Can view and apply categorization rules.
- 3) Auditor: Can view categorized transactions.

Feature 1c: Account Balances Update

Description:

The system updates account balances after each transaction is recorded.

User Access:

- 1) Administrator: Can view all account balances and manually adjust them if necessary.
- 2) Accountant: Can view account balances but cannot adjust them.
- 3) Auditor: Can view account balances and audit changes.

Module # 2 - Financial Reporting Module

This module generates various financial reports for analysis and decision-making.

Feature 2a: Cash Flow Statement Generation

Description:

Generates a cash flow statement detailing the inflows and outflows of cash.

User Access:

- 1) Administrator: Can generate, customize, and save cash flow statements.
- 2) Accountant: Can generate and save cash flow statements.
- 3) Auditor: Can generate and view cash flow statements for auditing purposes.

Feature 2b: Income Statement Generation

Description:

Generates an income statement summarizing revenues, costs, and expenses over a specific period.

User Access:

- 1) Administrator: Can generate, customize, and save income statements.
- 2) Accountant: Can generate and save income statements.
- 3) Auditor: Can generate and view income statements for auditing purposes.

Module # 3 - User Access Control Module

This module manages user roles, access levels, and security protocols.

Feature 3a: Role-Based Access Control

Description:

The system assigns specific roles (Administrator, Accountant, Auditor) to users, defining their access level and permissions.

User Access:

- 1) Administrator: Can create, modify, and delete user roles and assign permissions.
- 2) Accountant: No access to role management.
- 3) Auditor: Can view user roles and permissions for audit purposes.

Feature 3b: Authentication and Authorization

Description:

The system requires users to log in with a username and password. Authorization is based on their role.

User Access:

- 1) Administrator: Can view login activity logs and modify authentication settings.
- 2) Accountant: Can log in and perform assigned tasks.
- 3) Auditor: Can log in and view audit logs related to user access.

Additional Feature (Tentative)

Description:

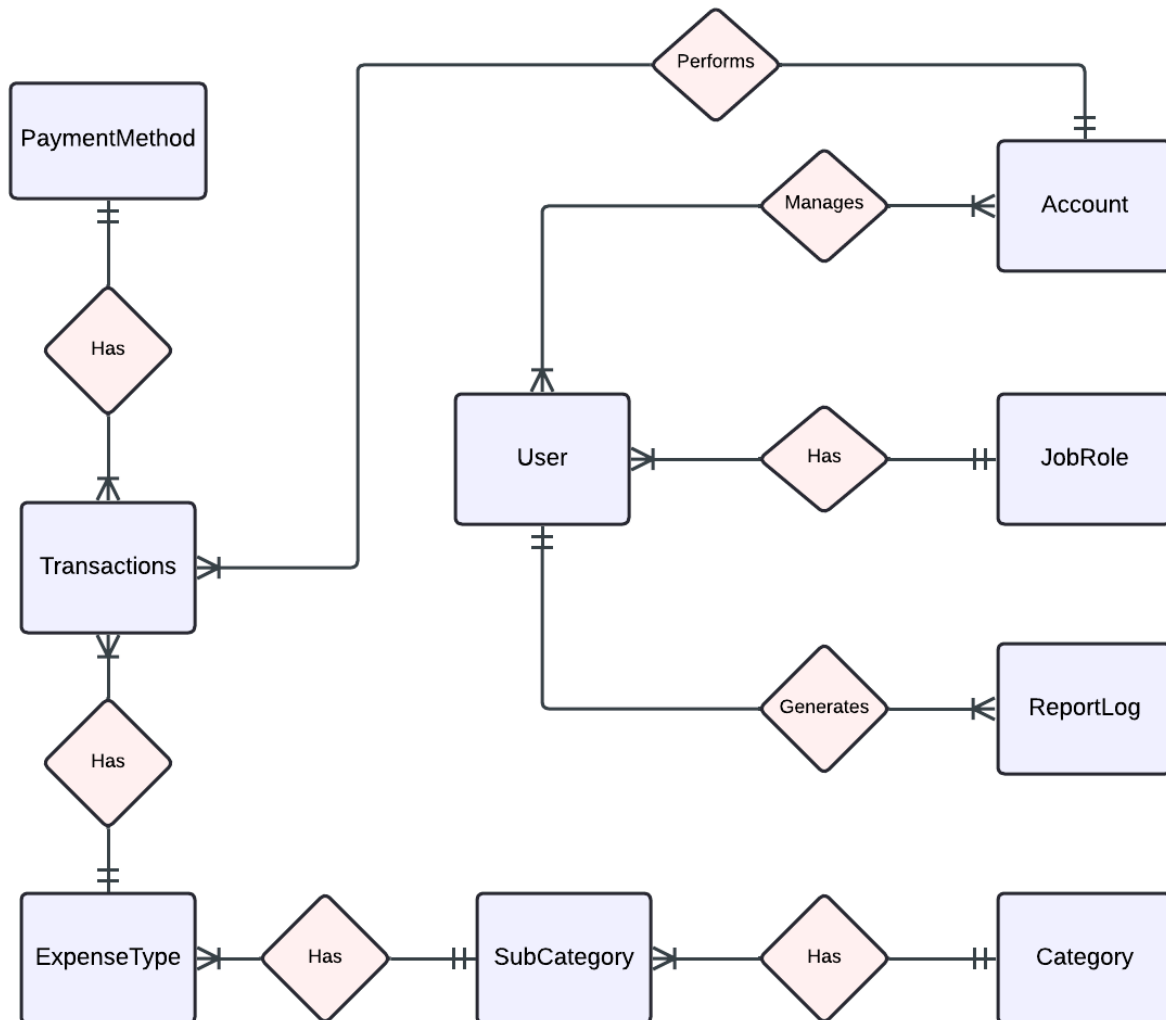
Generates a balance sheet showing the organization's assets, liabilities, and equity.

User Access:

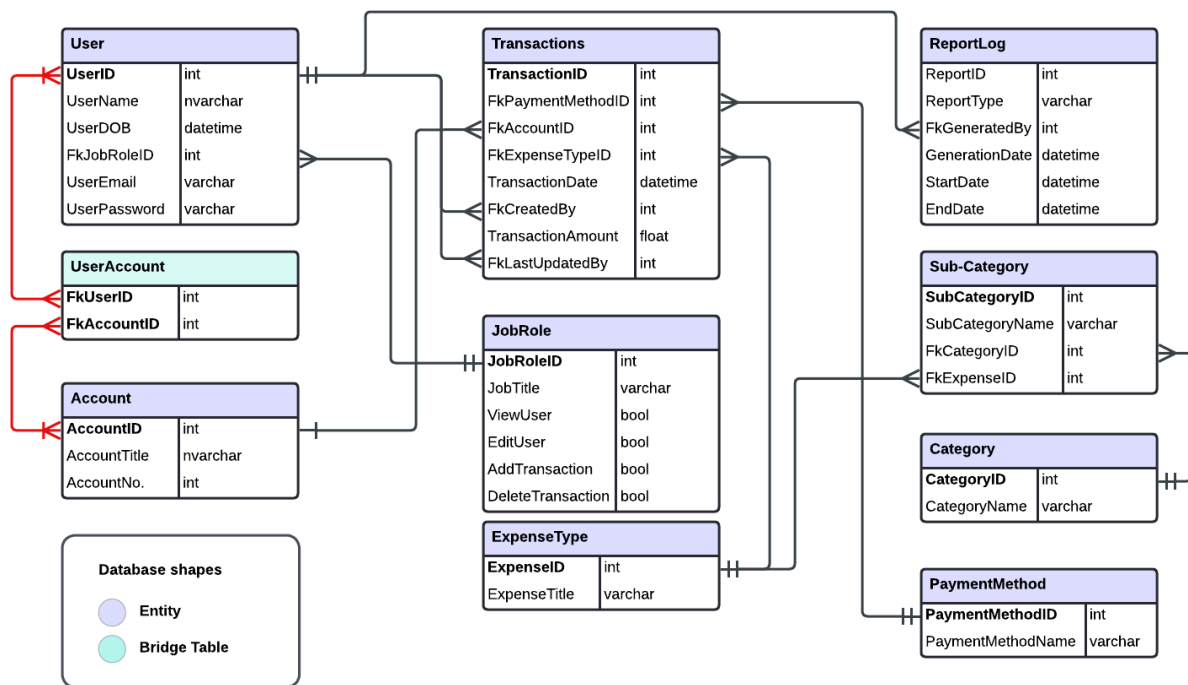
- 1) Administrator: Can generate, customize, and save balance sheets.

- 2) Accountant: Can generate and save balance sheets.
- 3) Auditor: Can generate and view balance sheets for auditing purposes.

Entity Relationship Diagram (ERD)



Relational Schema Diagram



Justifications

Consistency with UI Screens

Screen	Functional Requirement
<div> <div> <div>FINTRACK</div> <div>Keeping Your Finances On The Right Track</div> </div> <div> <div>User Email</div> <div></div> </div> <div> <div>Password</div> <div></div> </div> <div> <div>Login</div> </div> </div>	<p>The user will be able to log in to the system using their email address and password.</p>

Users

Edit Role Settings

Search

Role Filter

User ID	Full Name	BirthDate	Email	Password	Role
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Close

Add

Edit

Delete

The admin will be able to add employees (users) to the system, assigning them emails and passwords.

User Role Settings

Role ID	Job Title	View User	Edit User	Add Transaction	Delete transaction
1	Auditor	Yes	No	No	No
2	Administrator	Yes	Yes	Yes	Yes
3	Accountant	No	No	Yes	No

Close

Add Role

Edit Role

Delete Role

Roles can be edited by Admin only. Transactions can be viewed by all roles, however, Admin and Accountant can add transactions and only admin can delete a transaction.

Transactions

Category

Sub-Category

Search

View

Add

Delete

	ID	Category	Date	Payment Method	Sub Category	Account Number	Amount	Expense Type
1	1001	Expense	2024-09-01	Credit Card	Purchase	1023456789	500.00	Office Suppli...
2	1002	Revenue	2024-09-02	Bank Transfer	Sales	2001122334	2000.00	Product Sales
3	1003	Expense	2024-09-03	Cash	Purchase	1023456789	120.50	Utilities (Wat...
4	1004	Expense	2024-09-04	Bank Transfer	Payment	2001122334	1500.00	Equipment P...
5	1005	Revenue	2024-09-05	Check	Sales	2001122334	3000.00	Service Fees
6	1006	Expense	2024-09-06	Debit Card	Purchase	1023456789	80.00	Internet Serv...
7	1007	Expense	2024-09-07	Mobile Paym...	Payment	3009876543	450.75	Interest Pay...
8	1008	Revenue	2024-09-08	Bank Transfer	Receipts	2001122334	500.00	Dividends R...
9	1009	Expense	2024-09-09	Credit Card	Purchase	1023456789	950.00	Marketing E...
10	1010	Expense	2024-09-10	Cash	Purchase	1023456789	80.00	Office Suppli...

The user will be able to view and categorize all financial transactions.

Account Information

	Account ID	Account Title	Account Number	Account Balance
1	1001	John Doe	1001234567...	\$5,250.00
2	1002	Jane Smith	200234567...	\$1,850.75
3	1003	Alice Johnson	300345678...	\$12,450.32
4	1004	Robert Brown	400456789...	\$8,320.45
5	1005	Emily Davis	5005678901...	\$3,100.00
6	1006	Michael Wils...	6006789012...	\$25,750.88
7	1007	Sarah Taylor	7007890123...	\$1,500.00
8	1008	David Martin...	800890123...	\$4,875.50

View

Edit

Delete

Complete Account Information can be accessed through it.

CASH FLOW STATEMENT

Source:

Date Range: to

Generate Report

Source	Amount
▼ Operations	
Net Earnings	2,000,000
▼ Additions to Cash	
Depreciation	10,000
Decrease in Accounts Receivable	15,000
Increase in Accounts Payable	15,000
Increase in Taxes Payable	2,000
▼ Subtractions from Cash	
Increase in Inventory	30,000
Net Cash from Operations	2,012,000
▼ Investing	
Equipment	500,000
▼ Financing	
Notes Payable	10,000
Cash Flow for FY	1,522,000

Save

The user will be able to generate and save cash flow statements for a given range.

The system will log this action into the 'ReportLog' table for future reference and/or audits.

<div> <div>INCOME STATEMENT</div> <div> Date Range: <div>11-Oct-23</div> to <div>11-Oct-24</div> <div>Generate Report</div> </div> <table> <tr> <th>Description</th> <th>Amount</th> </tr> <tr> <td>Net Sales</td> <td>4,358,100</td> </tr> <tr> <td>▼ Cost of Sales</td> <td>2,738,714</td> </tr> <tr> <td>Gross Profit</td> <td>1,619,386</td> </tr> <tr> <td>Selling and Operating Expenses</td> <td>560,430</td> </tr> <tr> <td>▼ General and Administrative Expenses</td> <td>293,729</td> </tr> <tr> <td>Total Operating Expenses</td> <td>854,159</td> </tr> <tr> <td>Operating Income</td> <td>765,227</td> </tr> <tr> <td>Other Income</td> <td>960</td> </tr> <tr> <td>Gain on Financial Instruments</td> <td>5,513</td> </tr> <tr> <td>Gain on Foreign Currency</td> <td>(12,649)</td> </tr> <tr> <td>▼ Interest Expense</td> <td>(18,177)</td> </tr> <tr> <td>Income Before Taxes</td> <td>740,874</td> </tr> <tr> <td>Income Tax Expense</td> <td>257,642</td> </tr> <tr> <td>Net Income</td> <td>483,232</td> </tr> </table> <div>Save</div> </div>	Description	Amount	Net Sales	4,358,100	▼ Cost of Sales	2,738,714	Gross Profit	1,619,386	Selling and Operating Expenses	560,430	▼ General and Administrative Expenses	293,729	Total Operating Expenses	854,159	Operating Income	765,227	Other Income	960	Gain on Financial Instruments	5,513	Gain on Foreign Currency	(12,649)	▼ Interest Expense	(18,177)	Income Before Taxes	740,874	Income Tax Expense	257,642	Net Income	483,232	<p>The user will be able to generate and save income statements for a given range.</p> <p>The system will log this action into the 'ReportLog' table for future reference and/or audits.</p>
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Consistency with ERD/Relational Schema

The automated transaction recording module is well-supported by the ERD through the **Transactions** entity, which directly models the recording of financial transactions such as sales, purchases, and payments. The **User** entity is linked to **Transactions**, ensuring different user roles (Administrator, Accountant, Auditor) can interact with the transactions in accordance with their access permissions. The link between **Transactions** and **SubCategory**, which is further linked to **Category**, ensures that the system can automatically categorize transactions into predefined categories based on the rules set by the Administrator. Additionally, the **User** and **Account** relationship through the "Manages" association provides a foundation for updating account balances after each transaction, as outlined in the feature requirements.

The financial reporting module is consistent with the ERD through the presence of the **ReportLog** entity, which allows for the generation, saving, and auditing of financial reports such as cash flow statements. The connection between **User** and **ReportLog** ensures that users with specific roles can generate, customize, or view the required financial reports, such as income or cash flow statements, fulfilling the requirements for report generation and access control as described in the functional requirements.

The user access control module is adequately reflected in the ERD with the relationship between **User** and **JobRole**, which ensures that users can be assigned different roles like Administrator, Accountant, and Auditor. This relationship aligns with the system's role-based access control, allowing each role to have custom access privileges. For example, the Administrator can create and modify user roles, while the Auditor can view roles, ensuring consistency with the requirements for managing user roles and permissions.

The additional features, such as authentication and authorization, though not explicitly modeled in the ERD, are implied through the **User** and **Account** entities, indicating that user accounts are managed and secured, using different IDs and passwords for the users. Furthermore, the **ReportLog** entity supports the generation of income statements and balance sheets, ensuring that Administrators, Accountants, and Auditors can generate and view these financial reports as required.