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CEN4010 – Software Engineering

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FinTracker – Smart Financial Management Tool

About the Project



FinTracker is a web application designed to simplify personal and business finance management.



Allows users to track expenses and goals.



Offers intelligent insights through AI.

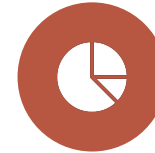
Key Features



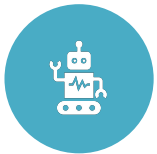
User authentication and JWT token security.



Manual transaction entry with calendar, type, amount, and category.



Charts and graphs: pie chart, bar graph, line graph.



AI chatbot using OpenAI model, and Analyzer using Claude model.



Budget progress bars and spending alerts.



Add transactions instantly by scanning your receipt



Business news via chatbot.



Editable user settings.

Technologies Used



Frontend: React



Backend: Django



AI Models: Claude
(data analysis),
OpenAI (chatbot)

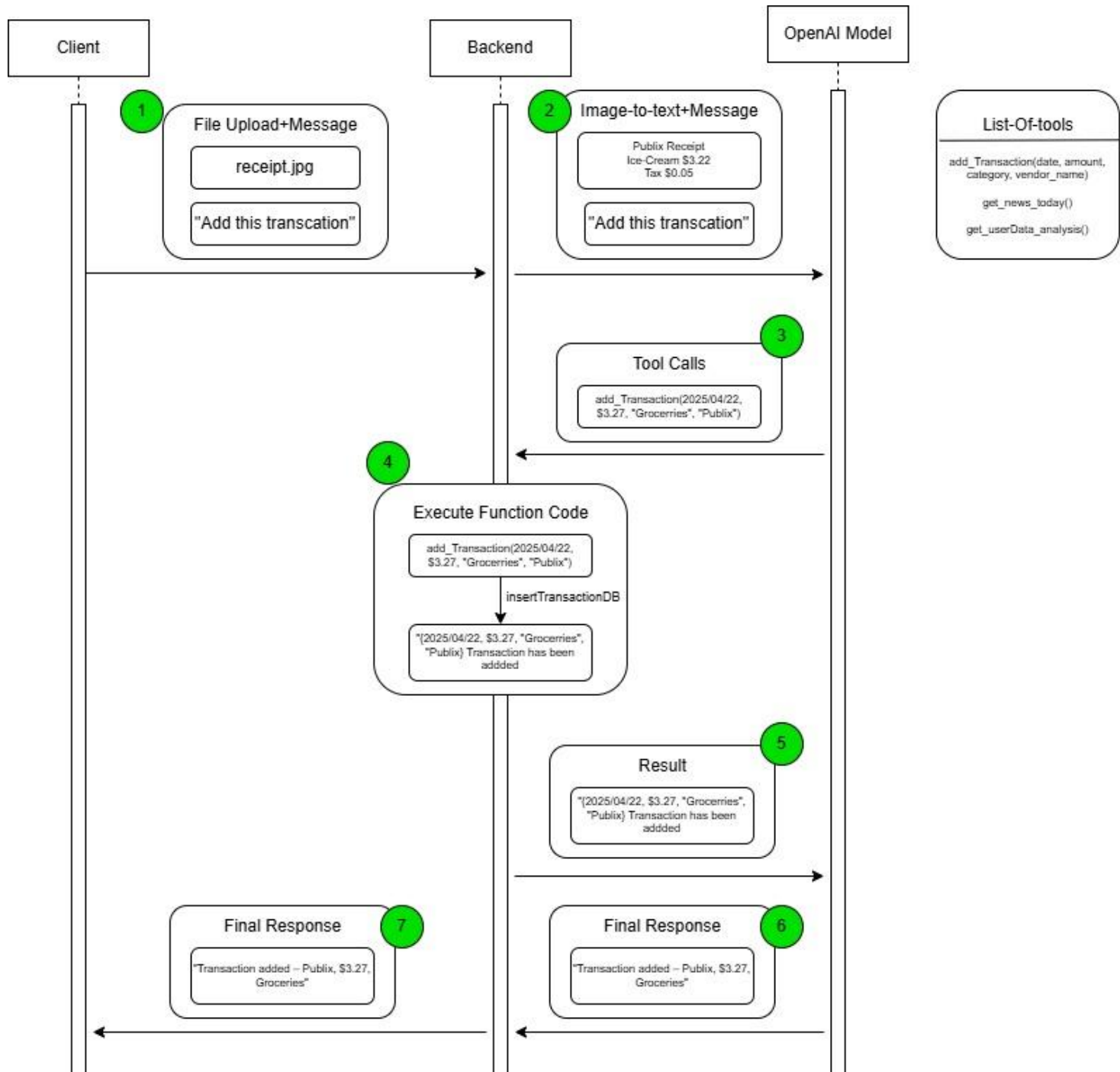


Security: JWT

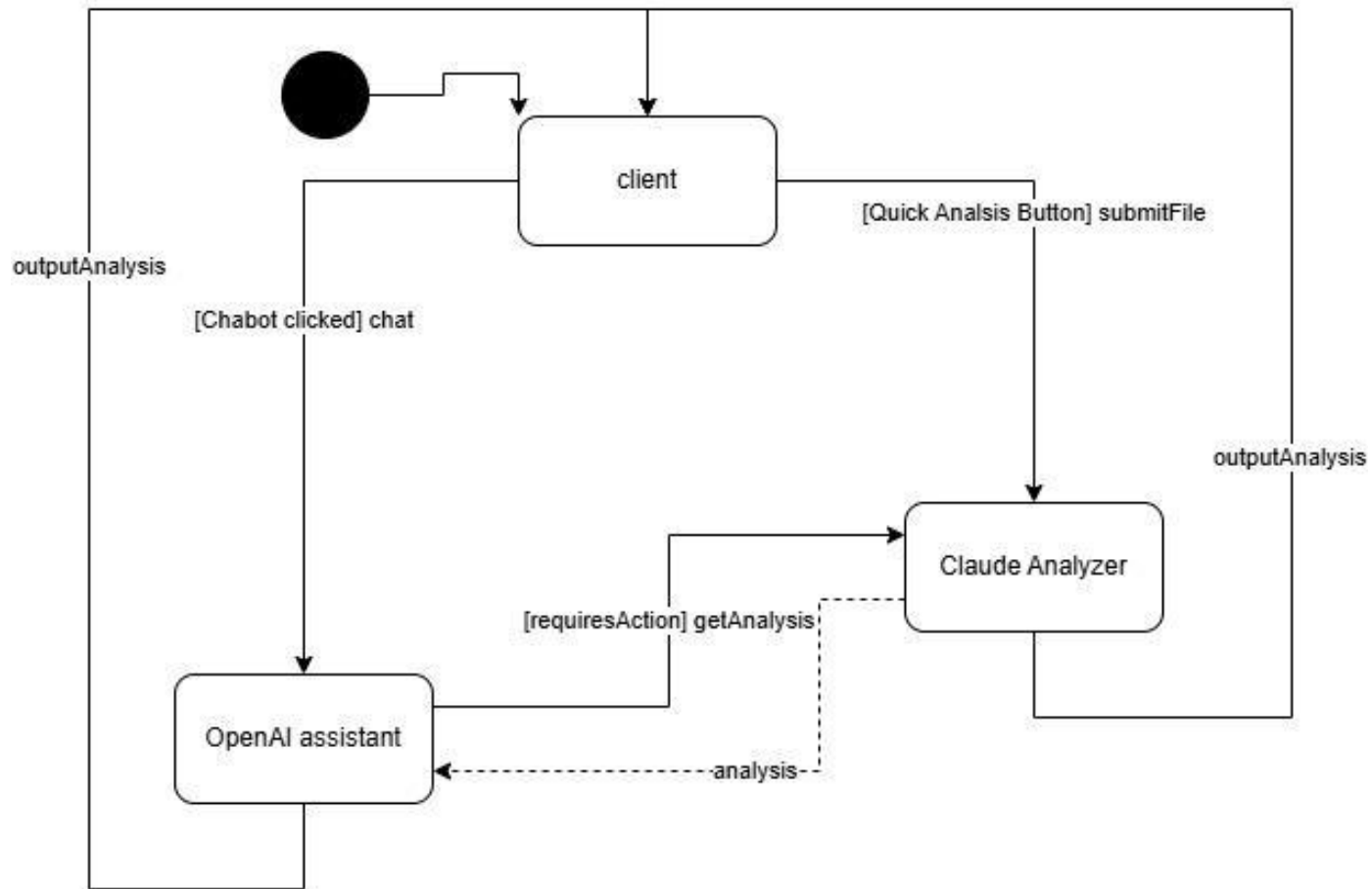


Database: MySQL

```
{
  "name": "add_transaction",
  "description": "Adds a new transaction with details such as transaction_date,
vendor_name, transaction_name, amount, and category_id. This also adds tax.",
  "strict": true,
  "parameters": {
    "type": "object",
    "required": [
      "transaction_date",
      "vendor_name",
      "amount",
      "category_id",
      "transaction_name"
    ],
    "properties": {
      "transaction_date": {
        "type": "string",
        "description": "The date of the transaction in YYYY-MM-DD format. If the date is
invalid default to 2002-05-31"
      },
      "vendor_name": {
        "type": "string",
        "description": "The vendor name of the transaction."
      },
      "transaction_name": {
        "type": "string",
        "description": "The name of the transaction."
      },
      "amount": {
        "type": "number",
        "description": "The amount of money involved in the transaction."
      },
      "category_id": {
        "type": "string",
        "description": "The category to which the transaction belongs. There are only 8
categories: Dining, Entertainment, Groceries, Miscellaneous, Shopping, Subscription,
Transportation, and Utilities. In addition to regular categories, there is one
additional category: Tax."
      }
    }
  },
  "additionalProperties": false
}
```



AI System Design



Functional Requirements



Sign up/login capability.



Manual transaction entry.



Visual breakdown of spending by month and overall.



Interactive chatbot for budgeting and receiving financial insights.



Editable user settings.



Graphical feedback on budgeting progress.

Non-Functional Requirements

Security: Django encryption, JWT authentication.

Usability: Simple, user-friendly navigation.

Reliability: Fast response times for login, sign-up, search, and budget operations.

Thank You!

Questions?

