Fido Backend Engineer Home Assignment

Objective: Develop a RESTful API using FastAPI, focusing on transactions and user interactions integral to Fido's services. This task will give us a glimpse into your expertise in Python, architectural decisions, asynchronous operations, and testing.

Task Details:

API Development with FastAPI:

- Set up a FastAPI project.
- Design endpoints that handle user financial records, specifically:
  - Creating a transaction record.
  - Reading a user's transaction history.
  - Updating a transaction record.
  - Deleting a transaction record.
  - Each record should contain: user_id, full_name, transaction_date, transaction_amount, and transaction_type (credit/debit).
- Gracefully handle errors and provide insightful feedback to the API user.

Transaction Analytics Endpoint:

- Implement an endpoint where, given a user_id, the API returns the user's average transaction value and the day they made the highest number of transactions.

Asynchronous Processing:

- When a transaction is added, ponder over the processing implications (e.g., updating user statistics, alerting relevant systems, or recalculating credit scores). Strategize about enhancing system responsiveness and efficiency.

Testing with pytest:

- Write unit tests for your endpoints using pytest.
- Ensure tests cover primary use cases and edge cases.

Containerization:

- Draft a Dockerfile to containerize your FastAPI application.
- Ensure the Docker container runs the application smoothly and integrates well with any database or external systems you opt for.

Documentation:

- Compile a README detailing:
  - Setup and run instructions.
  - Your design and architectural decisions.
  - Potential strategies for scaling this solution for a substantial user base, and any trade-offs that come to mind.

Submission:

- Initiate a new repository on GitHub.
- Commit your code, tests, and documentation.
- Send the repository on the deadline to dor@fidocredit.com
- Any questions you can send to dor@fidocredit.com