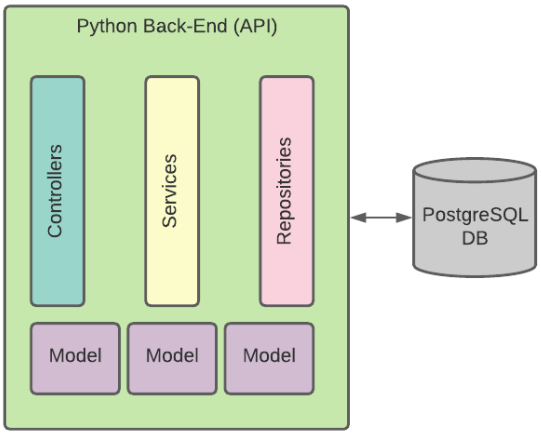
EIC EDGE – Capstone Requirements

High-Level Requirements

- Creation of a REST API in Python to support standard bank account operations including:
    - Open a new account
    - Retrieve information on all accounts
    - Retrieve information for a specific account
    - Execute a withdrawal from an existing account
    - Execute a deposit to an existing account
    - Close an existing account
- API will integrate with a back-end PostgreSQL database for storage of account, customer, and address details
- Database schema will include the following:
    - Address
        - ID (autoincrementing integer) – primary key
        - Address (text)
        - City (text)
        - State (text)
        - Zip code (text)
    - Customer
        - ID (autoincrementing integer) – primary key
        - First name (text)
        - Last name (text)
        - Address ID (foreign key)
        - Email address (text)
    - Account
        - ID (autoincrementing integer) – primary key
        - Account number (text)
        - Customer ID (foreign key)
        - Current balance (decimal value)
- Conceptual architecture:



EIC EDGE – Capstone Requirements

- Error handing:
    - Prevent a withdrawal that would result in an overdraw
    - Require that a minimum of $25.00 be included to open a new account
    - Prevent specification of invalid values on a withdrawal or deposit (positive decimal numbers only)
- You are to use TDD (Test-Driven Development) as the methodology for implementation with a target unit test coverage % of 85% (minimum)
- This application is to be deployed in the Cloud (AWS) using an EC2 instance for hosting the API and RDS for hosting the database
- This application is to leverage AWS CodeBuild, CodeDeploy, and CodePipeline for CI/CD deployments of the infrastructure components supporting the defined application architecture

Technical Requirements

- Python 3.8+
- FastAPI and Pydantic
- PostgreSQL (target Amazon Aurora)
- AWS for IaaS, PaaS, and CI/CD