Table of Contents

GENERAL INTRODUCTION

In the digital age, the banking industry has undergone a significant transformation, moving away from traditional brick-and-mortar branch-based models towards embracing online and mobile banking solutions. One such innovation is the development of an integrated online banking system that incorporates automated teller machine (ATM) functionality.

The core objective of this online banking system is to provide customers with a comprehensive and convenient banking experience that combines the accessibility of the internet with the flexibility of ATM services. By leveraging modern technology, the system aims to empower customers to manage their financial affairs remotely, without the need to physically visit a bank branch.

The online banking platform will offer a wide range of features and capabilities, allowing customers to perform a variety of tasks such as checking account balances, transferring funds, paying bills, depositing checks, and even applying for loans or opening new accounts. The seamless integration of ATM functionality within the online system takes this convenience one step further, enabling customers to withdraw cash, make deposits, and carry out other common ATM transactions directly from their personal devices.

This integration of online banking and ATM services is designed to cater to the evolving needs and preferences of modern banking customers. By providing a unified and streamlined user experience, the system aims to improve customer satisfaction, increase operational efficiency, and strengthen the bank's competitive position within the financial services industry.

Through the implementation of robust security measures, advanced data encryption, and user-friendly interfaces, the online banking system with ATM integration will strive to instill a sense of trust and confidence in its customers, ensuring the safety and integrity of their financial information and transactions.

Overall, this comprehensive online banking system with ATM functionality represents a pivotal step in the digital transformation of the banking sector, offering customers greater control, flexibility, and accessibility in managing their financial affairs in the 21st century.

CONCEPTION PHASE

i. Definition

A class diagram shows the building block of any object-oriented system. Class diagrams portrays a static view of the model, or part of the model, describing what attributes and behavior it has rather than detailing the method for achieving operations. Class diagrams are most useful in illustrating relationships between classes and interface, composition or usage and connections respectively.

A class is a set of functions and date (attributes) that are linked together by semantic field. Classes are used in object-oriented programming to model programs and to curt a complex risk into several small simple jobs.

ii. Formalism

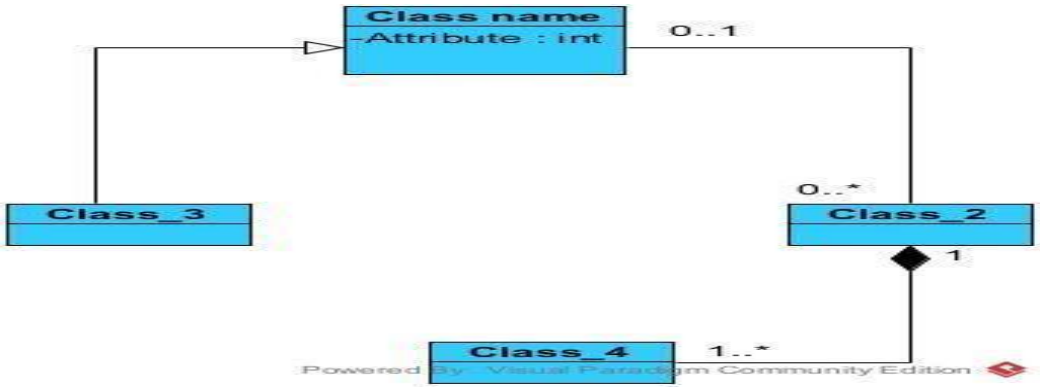

Figure 1 Class diagram Formalism

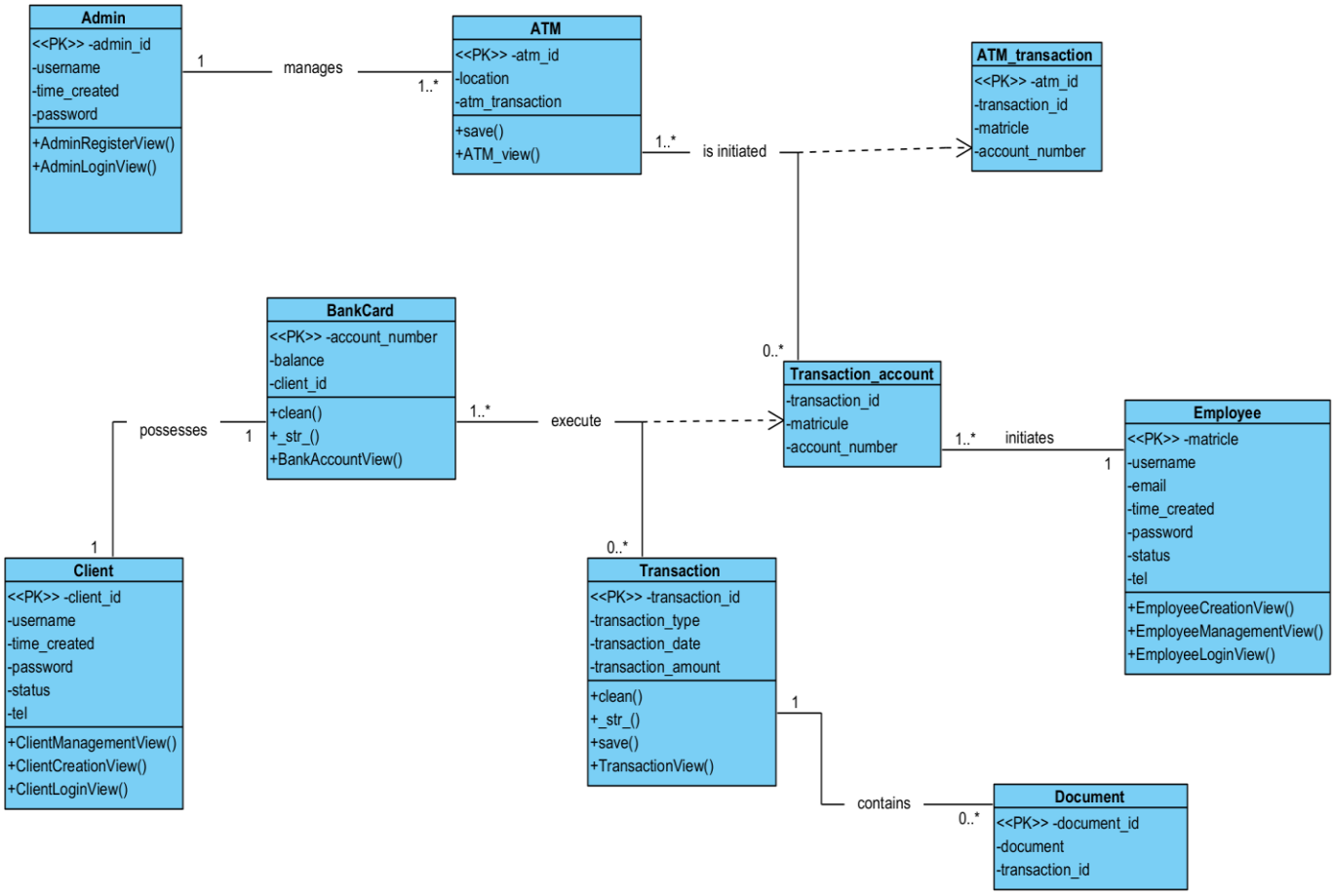

Figure 2: General class diagram

TECHNOLOGICAL CHOICE

FRONTEND:

To develop our application we used React + vite.

BACKEND:

To develop our backend we use python language with Django framework.

Here we explain the different extra packages for our project.

To generate the PDF we used the command: pip install report lab

We also installed Django dbbackup for the backup, then we went to install apps and paste it, then we go and configure the path were the backup will be done.

Representation:

INSTALLED_APPS = [

…

"dbbackup"

NB: We configure our dbbackup but used it with the commands we typed ourselves.

We also used Django simple history to monitor all the activities in the database. To use it we have to install it using the command “pip install django-simple-history”, then go to the model.py and call the simple History package, then from the historical package we call the historical records constructor.

We used Django cors headers, after installation add it in install apps. Then create a variable called course Origin white list used to white list addresses helping us to get access to the API so as to avoid our request to be blocked.

We still need to add another class in settings.py as;

“corsheaders.middleware.CorsMiddleware”

The different packages(requirements in the requirements.txt) are

asgiref==3.8.1

chardet==5.2.0

Django==5.0.6

django-cors-headers==4.3.1

django-dbbackup==4.1.0

django-simple-history==3.7.0

djangorestframework==3.15.1

djangorestframework-simplejwt==2.0.5

ecdsa==0.19.0

pillow==10.3.0

psycopg2==2.9.9

psycopg2-binary==2.9.9

pyasn1==0.6.0

python-Jose==3.3.8

pytz==2024.1

reportlab==4.2.0

「sa==4.9

six==1.16.0

sqlparsea=0.5.9

tzdata==2024.1

To get all the different packages we simply type the command: pip install -r requirements.txt, which will access the requirement.txt file and install the different requirements needed.

And finally the things to add in the install apps are ;

INSTALLED_APPS = [

"corsheaders",

"simple_history"

"e_cash",

"dbbackup"

Helping us to work with the history, the cors headers, the backup and the folder e_cash.

USERGUIDE

Sign Up: Visit the online ATM website and click on the "Sign Up" button to create a new account. You'll need to provide some personal information and set up login credentials.

Log In: Once your account is created, you can log in to the online ATM using your username and password.

Verify Identity: For security purposes, you may be asked to verify your identity through additional steps, such as entering a one-time code sent to your registered phone number.

Available Transactions

The online ATM offers the following transaction types:

Check Balance: View the current balance in your checking, savings, or other linked accounts.

Make Deposit: Deposit funds into your account by uploading an image of a check or by transferring money from an external bank account.

Withdraw Cash: Request a cash withdrawal and have the funds delivered to your doorstep or available for pickup at a local branch.

Transfer Funds: Move money between your own accounts or send funds to other individuals or businesses.

Manage Account: Update your personal information, change your login credentials, and view transaction history.

Security and Privacy

The online ATM uses advanced encryption and security measures to protect your financial information. However, it's important to also take the following precautions: