



Software design specification document

2023

Project Team

ID	Name	Email
20210557	Nada Essam Ewas	enada746@gmail.com
20210552	Nouran Khaled Badri	nourancplusplus@gmail.com
20210456	Yomna Abdelsalam Mahmoud	yomn02@gmail.com
20210128	Doaa Mahdy Mohamed	doaamahdy49@gmail.com



CS352: Sprint SDS– **Instapy Project, Phase 1**

SDS document

Contents

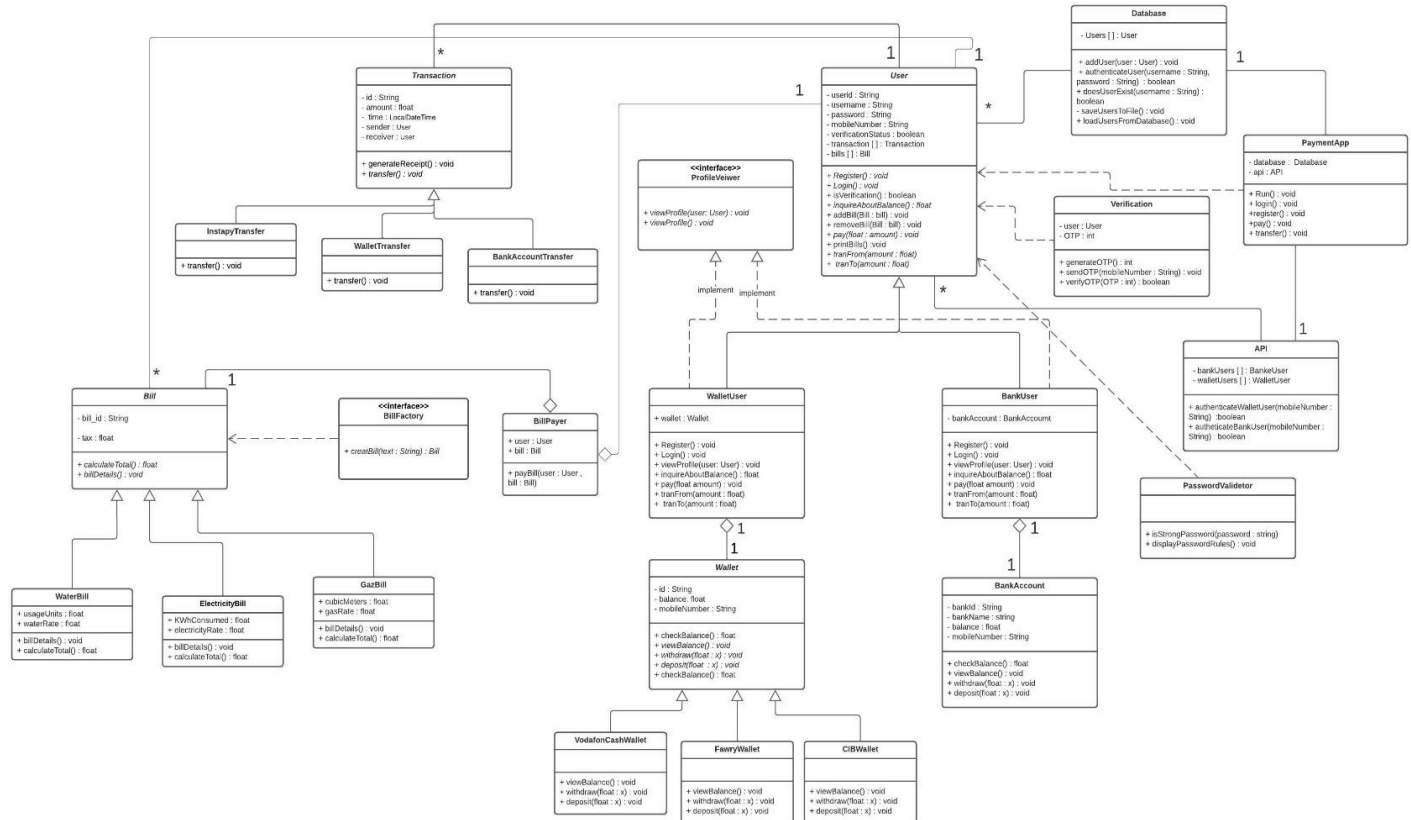
Class diagram design.....	3
Class diagram Explanation.....	4
Sequence diagram design	5
Github repository link	8



CS352: Sprint SDS– Instapy Project, Phase 1

SDS document

Class diagram design





CS352: Sprint SDS– Instapy Project, Phase 1

SDS document

Class diagram Explanation

1. Abstract Factory Pattern:

- Classes: BillFactory, Bill , WaterBill , ElectricityBill , GazBill

- Justification: We used this pattern because this pattern allows the creation of bill objects without exposing the concrete implementations of the code and we have The BillFactory class acts as an abstract factory that creates different types of bills (WaterBill, ElectricityBill, GazBill) based on the input

2. Strategy Pattern:

- Classes: Wallet, VodafoneCashWallet, FawryWallet, CIBWallet, BankAccount , Transaction , InstapyTransfer , WalletTransfer , BankAccountTransfer

- Justification: We used this pattern because The strategy pattern is used to encapsulate different algorithms (withdraw, deposit) and make them interchangeable within the Wallet and BankAccount classes. Each wallet type (VodafoneCashWallet, FawryWallet, CIBWallet) and the BankAccount can have its own implementation of these methods, allowing flexibility and easy swapping of strategies. The same reason for Transaction class.

3. Code to Interface Principle:

- Interface: ProfileViewer

- Justification: The ProfileViewer interface defines the contract for viewing user profiles. It allows different classes (User, WalletUser, BankUser) to implement their own version of the viewProfile() method to provide specific profile viewing functionality.



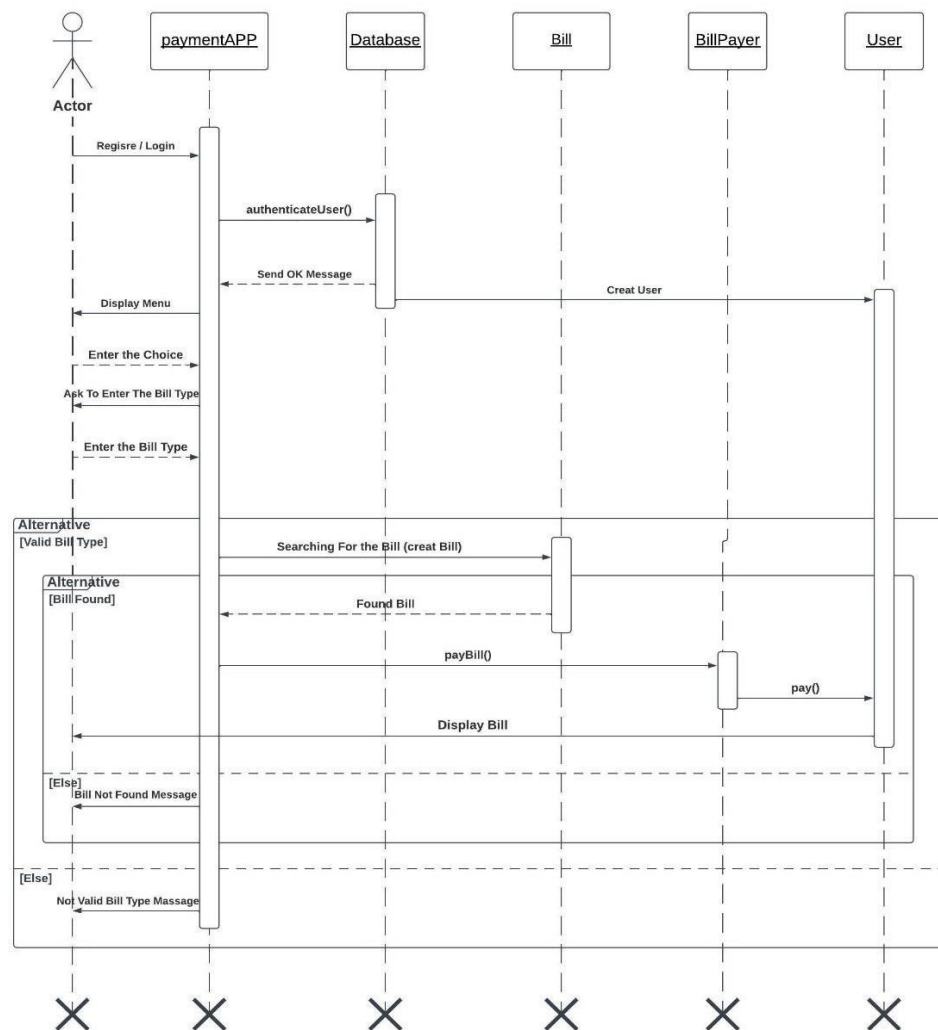
CS352: Sprint SDS– Instapy Project, Phase 1

SDS document

Sequence diagram design

1-Pay Bill Sequence diagram

Pay Bill Sequence Diagram

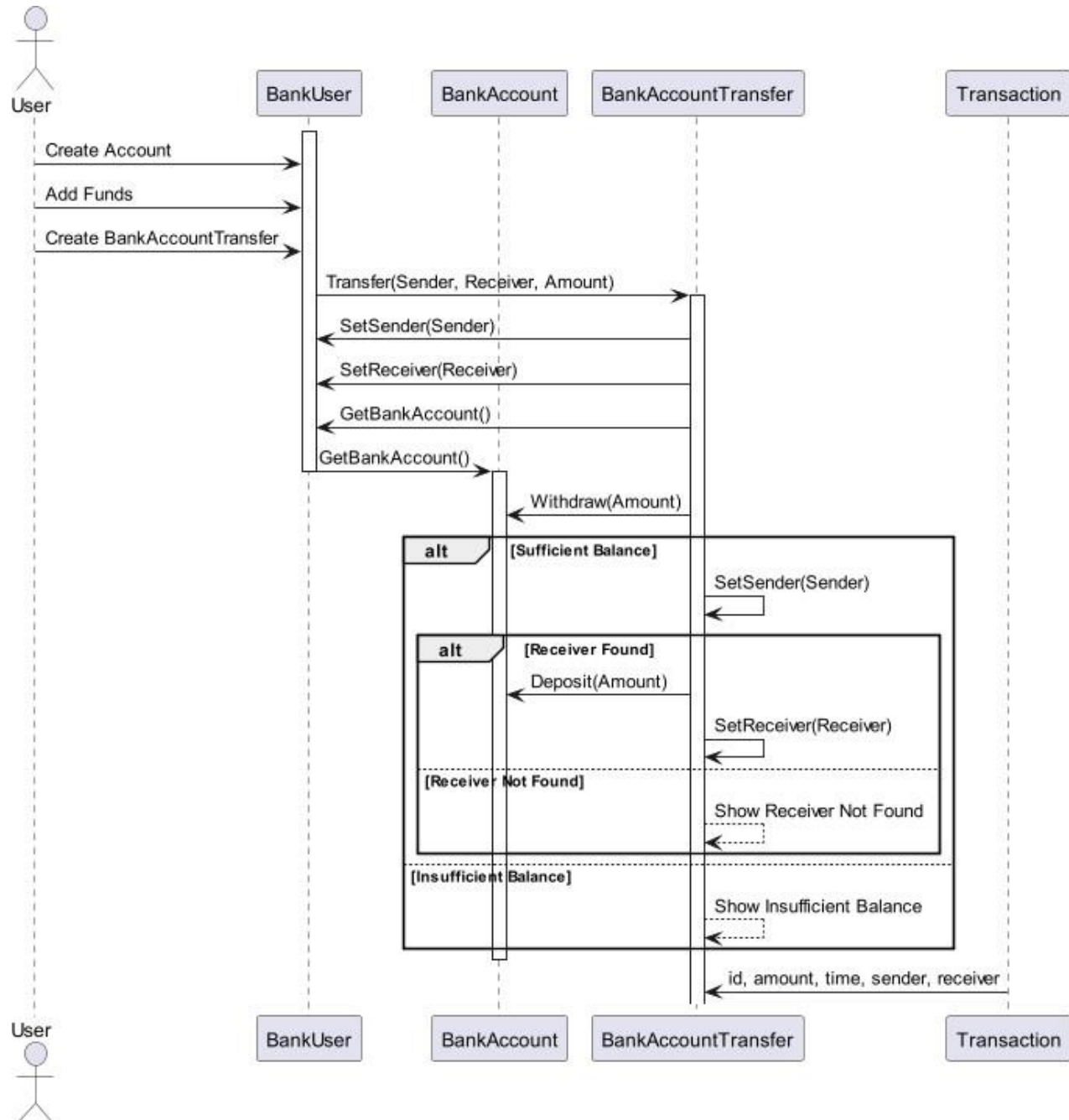




CS352: Sprint SDS – Instapy Project, Phase 1

SDS document

3-Transfer to Bank Account Sequence diagram

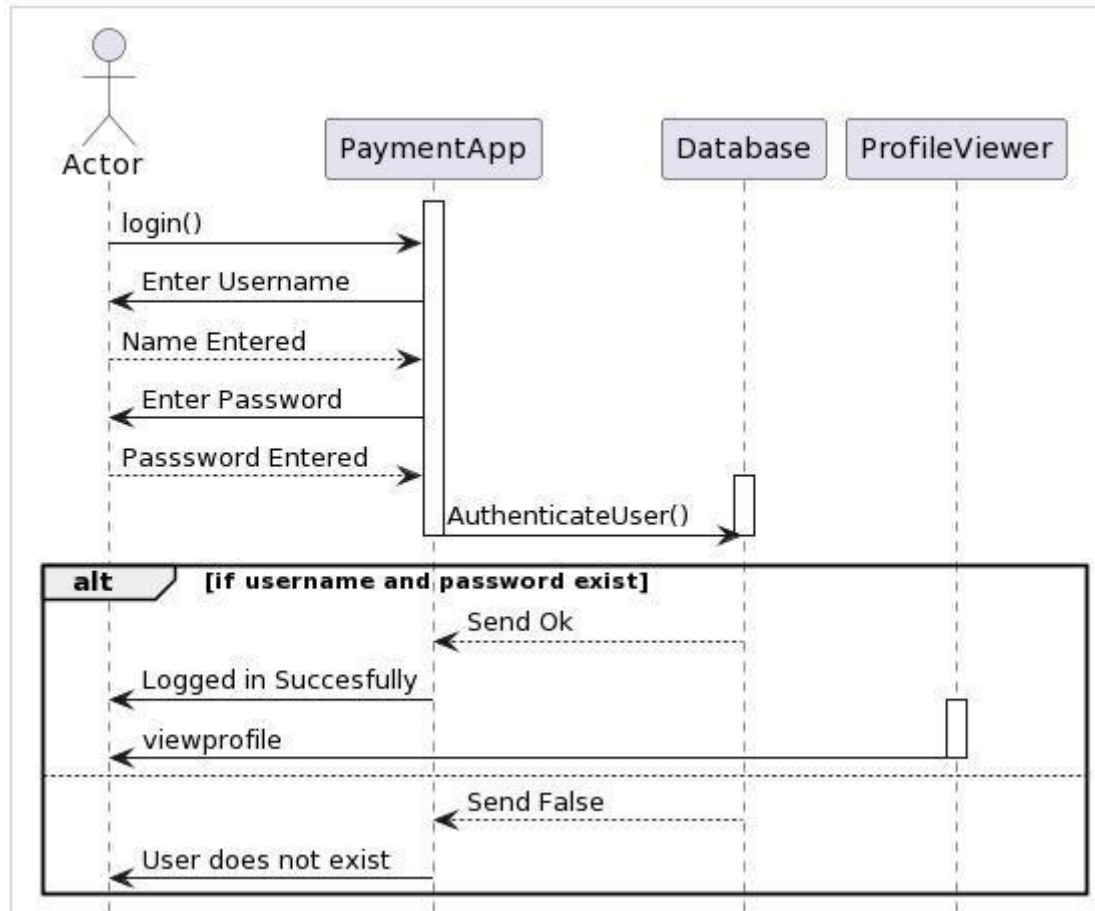




CS352: Sprint SDS– Instapy Project, Phase 1

SDS document

4-Login Sequence diagram



Github repository link

https://github.com/Doaamahdy/Instapy_System