



Software design specification document

2023

Instio

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Class diagram design





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Class diagram Explanation

- **Strategy Pattern:** allows for flexibility in selecting algorithms at runtime, promotes code reuse, and separates the concerns of the client and the algorithm implementations
 - Transaction “interface” , “BankTransaction” , “WalletTransaction” and “InstoTransaction” all implements from Transaction interface acts as the strategy, and the concrete classes represent different implementations of the transaction strategy The ”User” class that uses a particular transaction strategy, and you can dynamically switch between different transaction strategies at runtime by setting the appropriate strategy for the user.
This structure allows you to encapsulate the variations in transaction behaviour, making it easy to extend and modify without altering the user code.
- **Facade Pattern:** Simplifies a complex system by providing a unified interface that clients can interact with, hiding the complexities.
 - The InstoSystem class could potentially act as a facade, providing a simplified interface to a larger set of functionality within the system.
- **Singleton Pattern:** is a design pattern that restricts the instantiation of a class to a single instance and provides a global point of access to that instance. to implement the singleton pattern is to use a private constructor, a private static instance variable, and a public static method to retrieve the instance.
 - “BankMisr”, “BankCIB”, “VodafoneCashProvider”, “EtisalatCashProvider”, and UserDB in each of these classes, the getInstance method ensures that only one instance of the class is created and provides a global point of access to that instance.

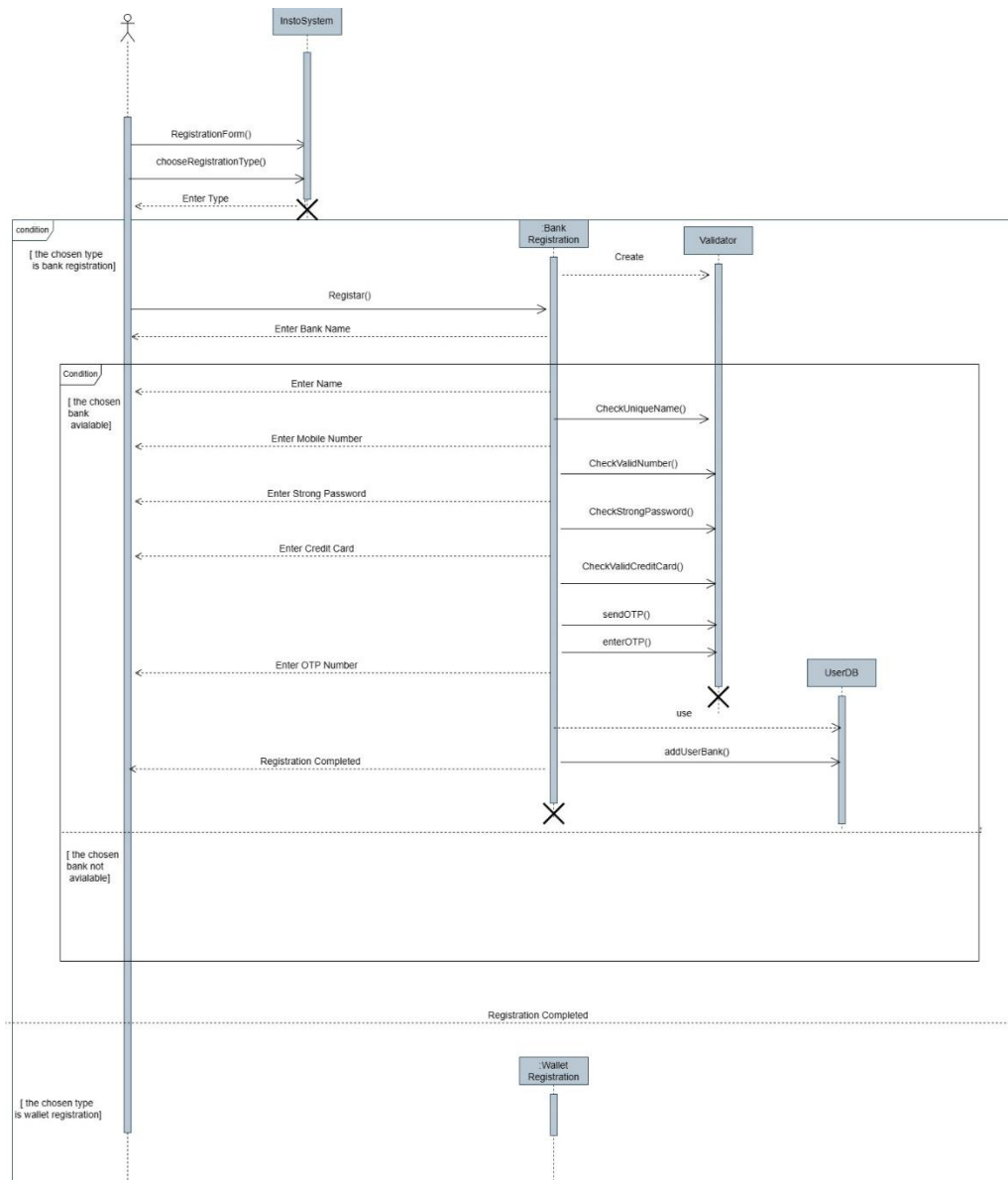


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Sequence diagram design

- Registration:

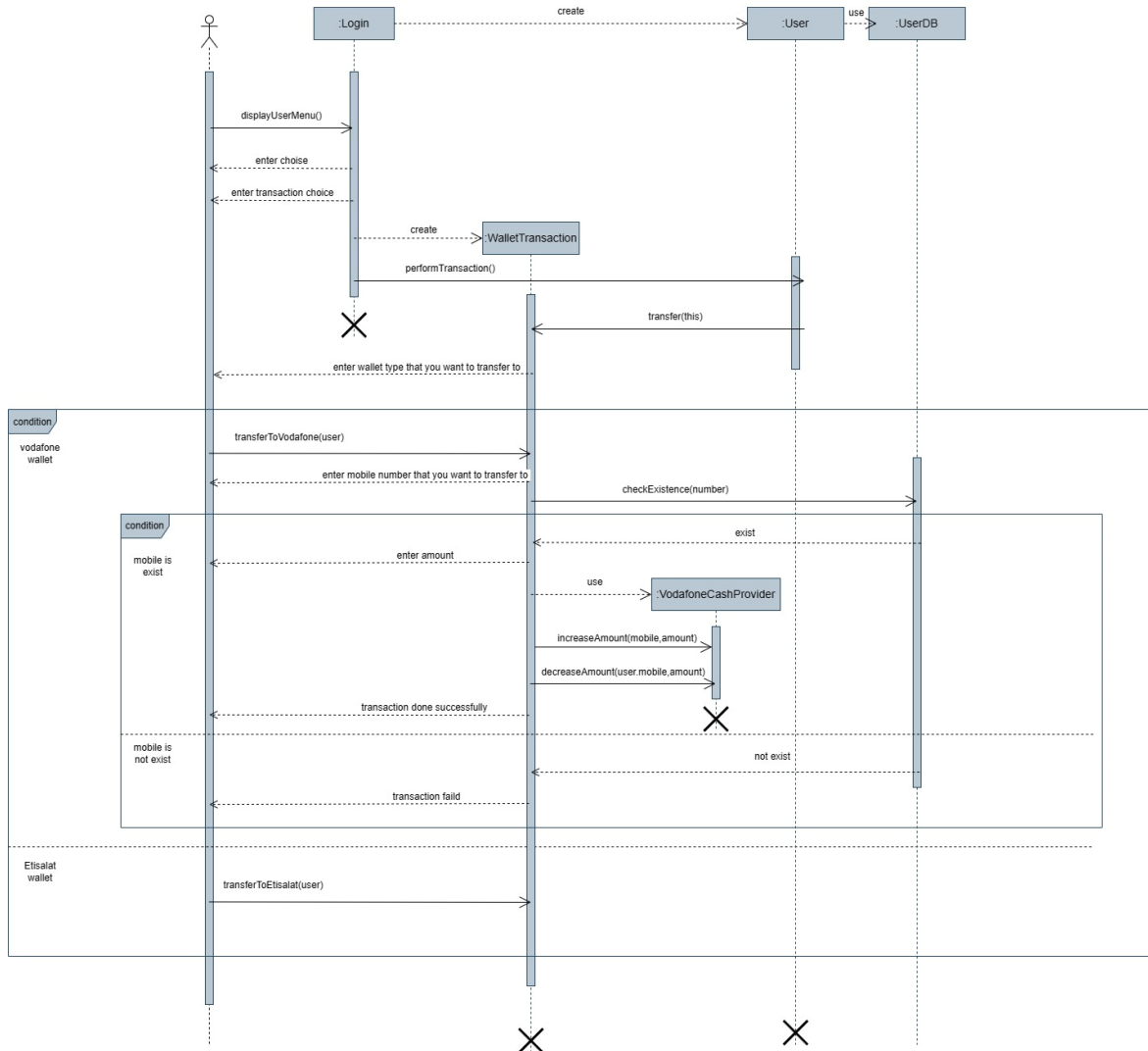




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- **WalletTransaction:**

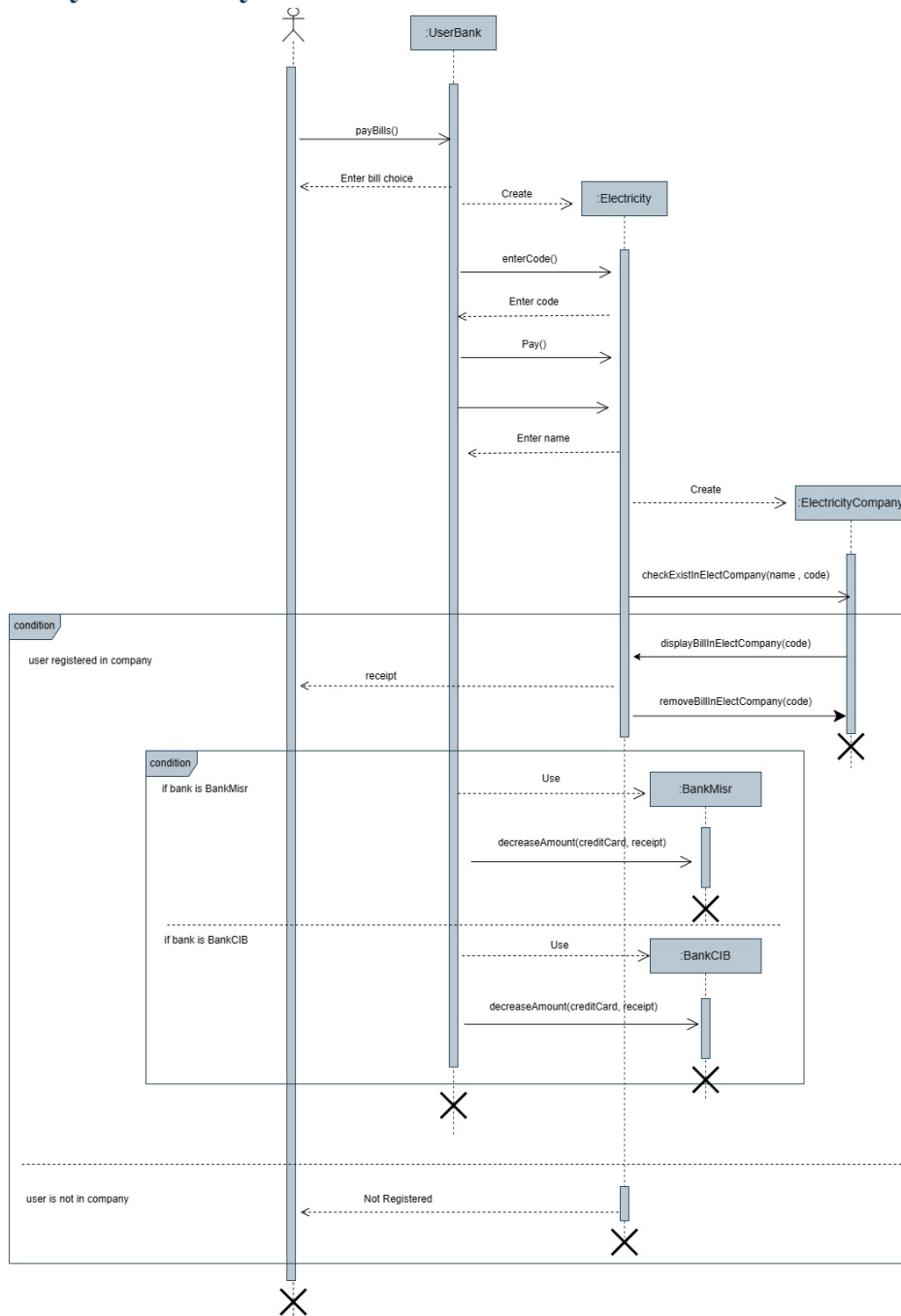




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- Pay Electricity Bill:

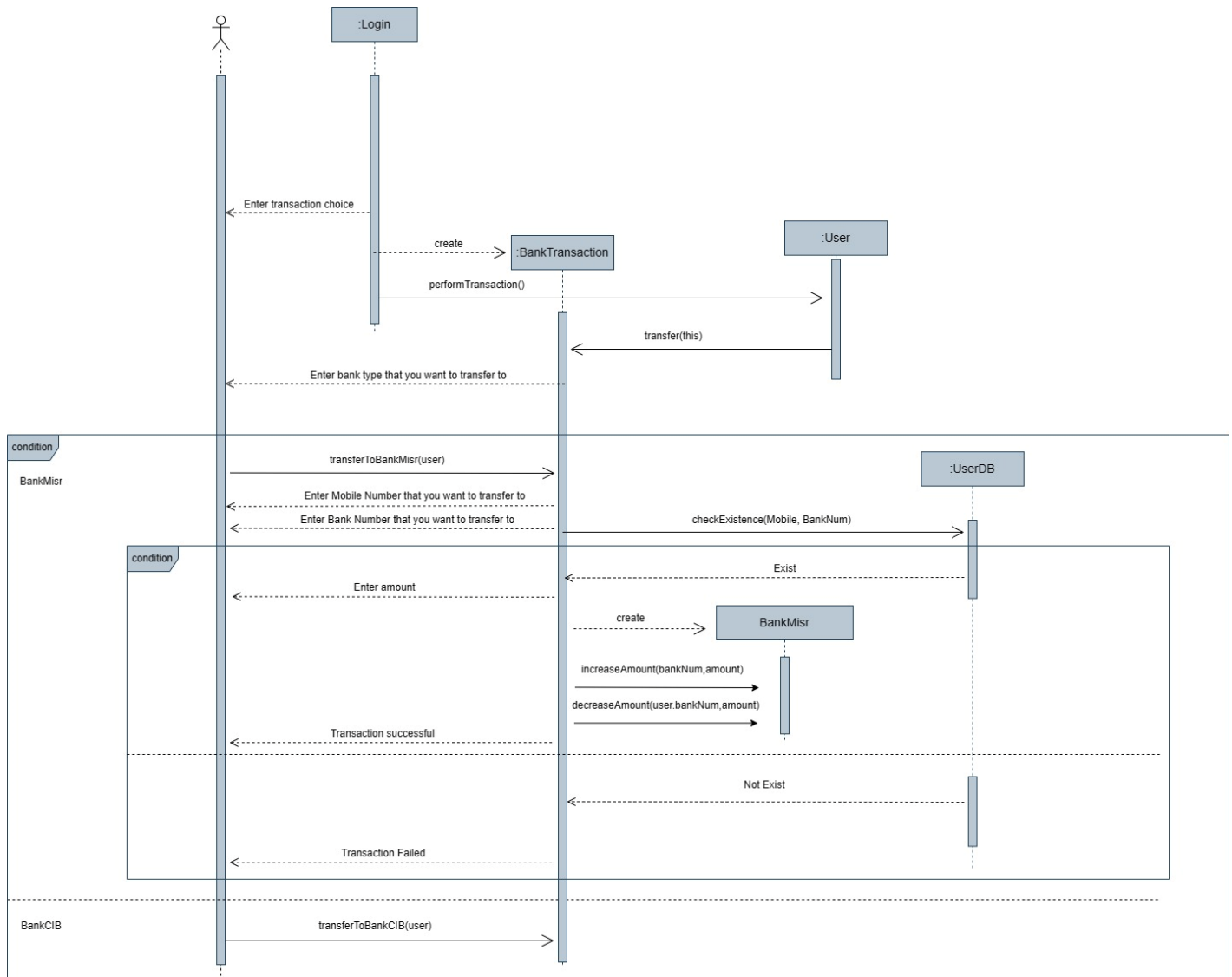




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- **BankTransaction**



Github repository link

- https://github.com/Salma12004/Instito_pay.git