



Software design specification document

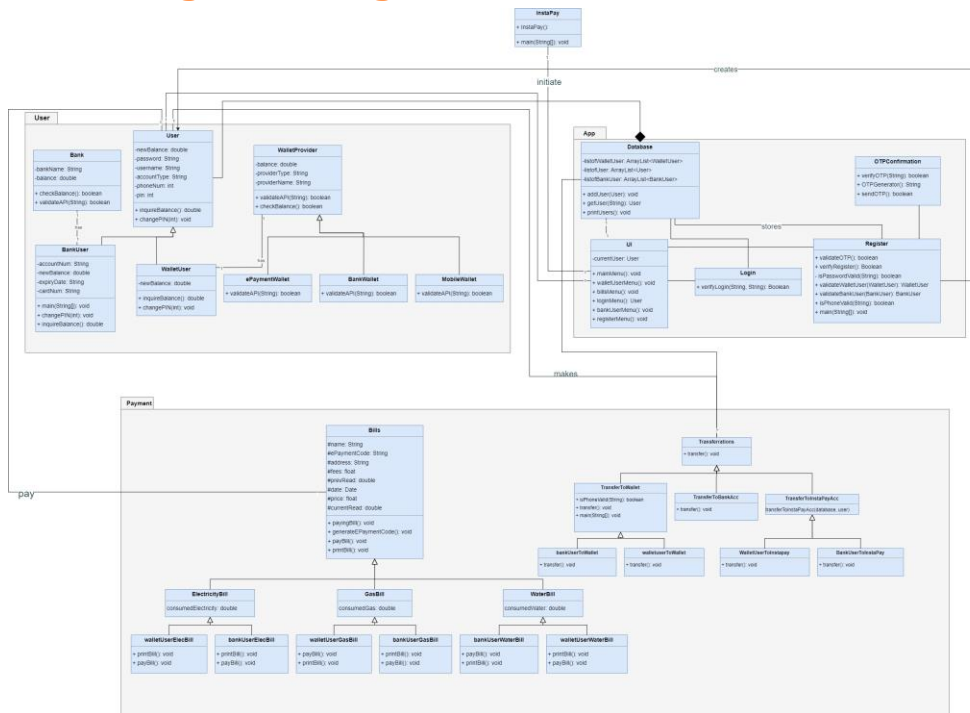
2023

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Class diagram Explanation

- Factory Method Pattern for WalletUser: The WalletUser class can be designed using the Factory Method pattern. This pattern allows the creation of different types of wallet users without specifying their exact classes.
- Strategy Pattern for User Interface: The UI class employs the Strategy Pattern by dynamically selecting and presenting various menus (such as bankUserMenu and walletUserMenu) based on the type of user logged in. This pattern enables the UI to adapt and switch between different strategies (menus) without altering its core structure.
- Strategy pattern for different types of bills (electricity, gas, water) and payment methods (bank account, InstaPay, wallet). Each bill type or payment method can be encapsulated as a strategy, allowing users to switch between them dynamically.
- Factory Method pattern for creating instances of bills or payment methods. This can help encapsulate the creation logic and provide a way to create objects based on the type of bill or payment method required.
- Template method is a design pattern employed in the payingBill method of the Bills class. Marked as a public final, it establishes a skeleton structure for the bill payment process. Subclasses can't override this method but are encouraged to implement specific actions within the predefined steps: generateEPaymentCode, payBill, and printBill.

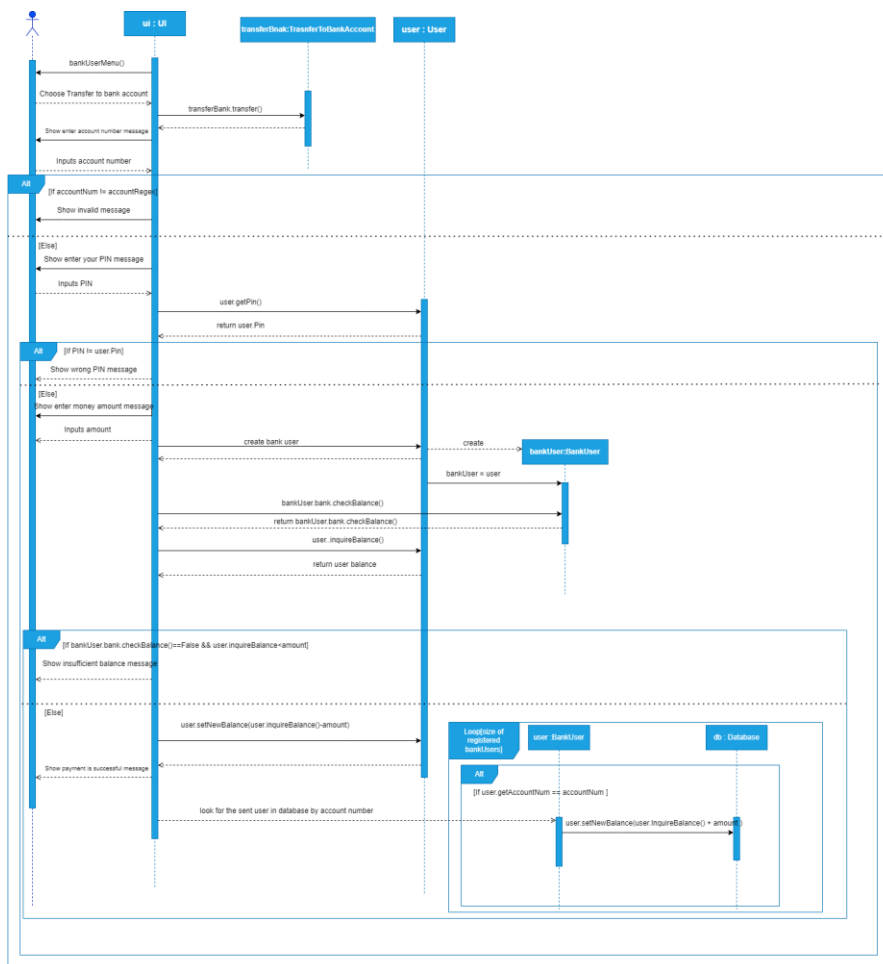


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Sequence diagram design

Transfer to bank account

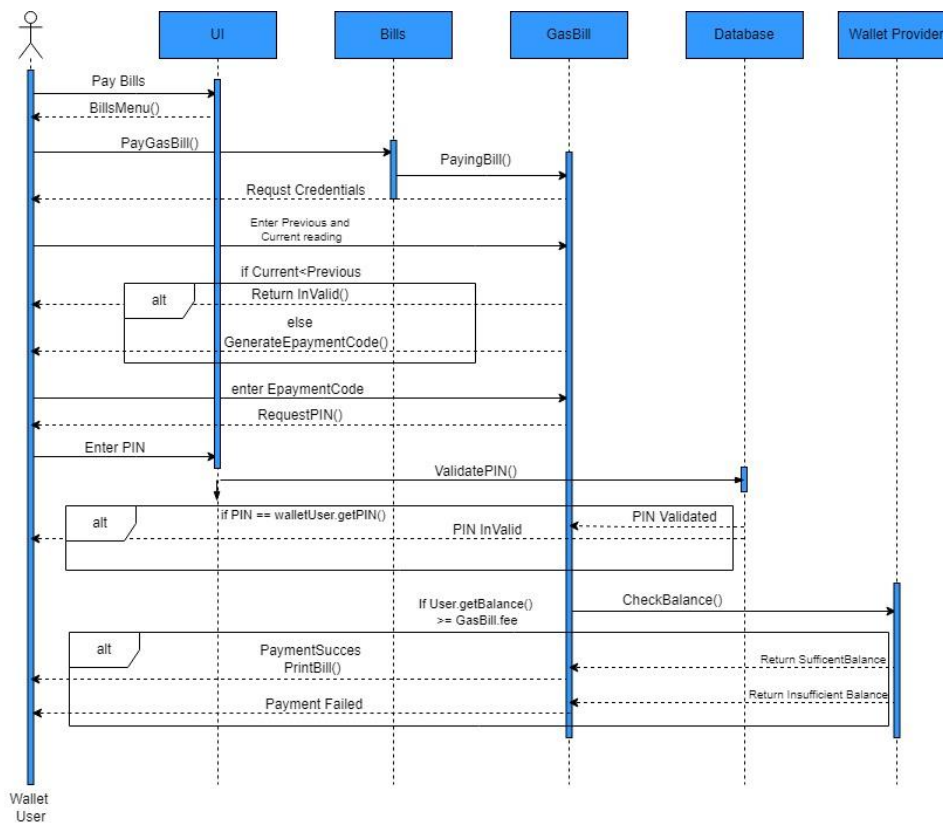




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Pay bills





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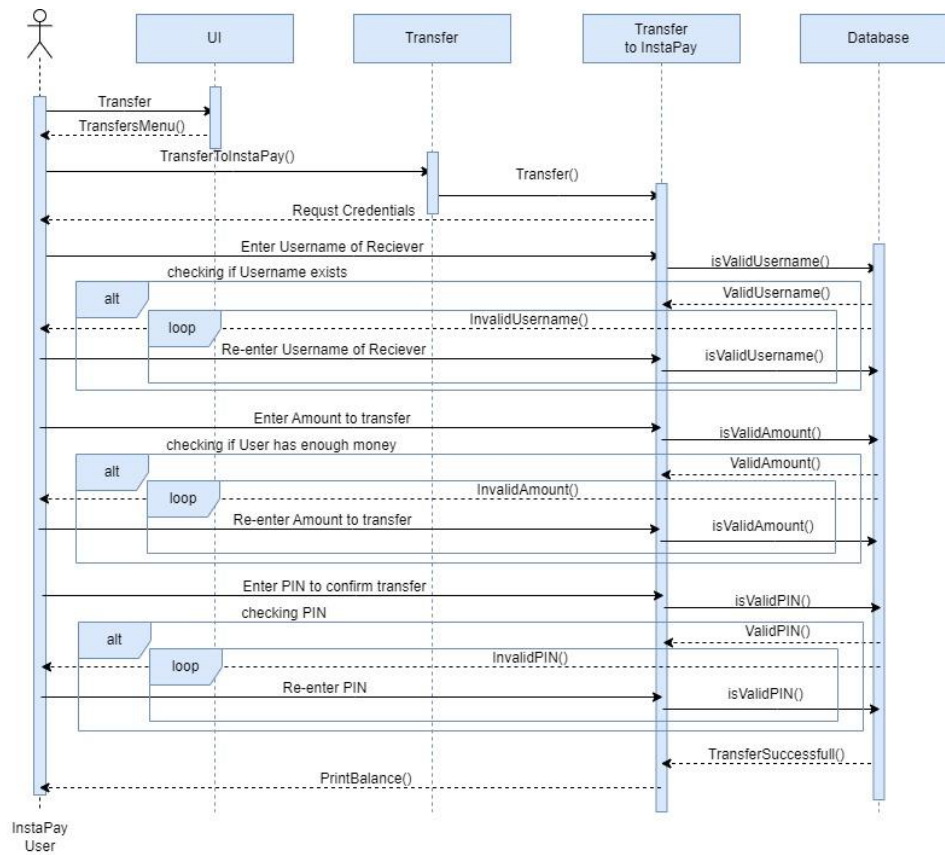
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Transfer to instaPay account



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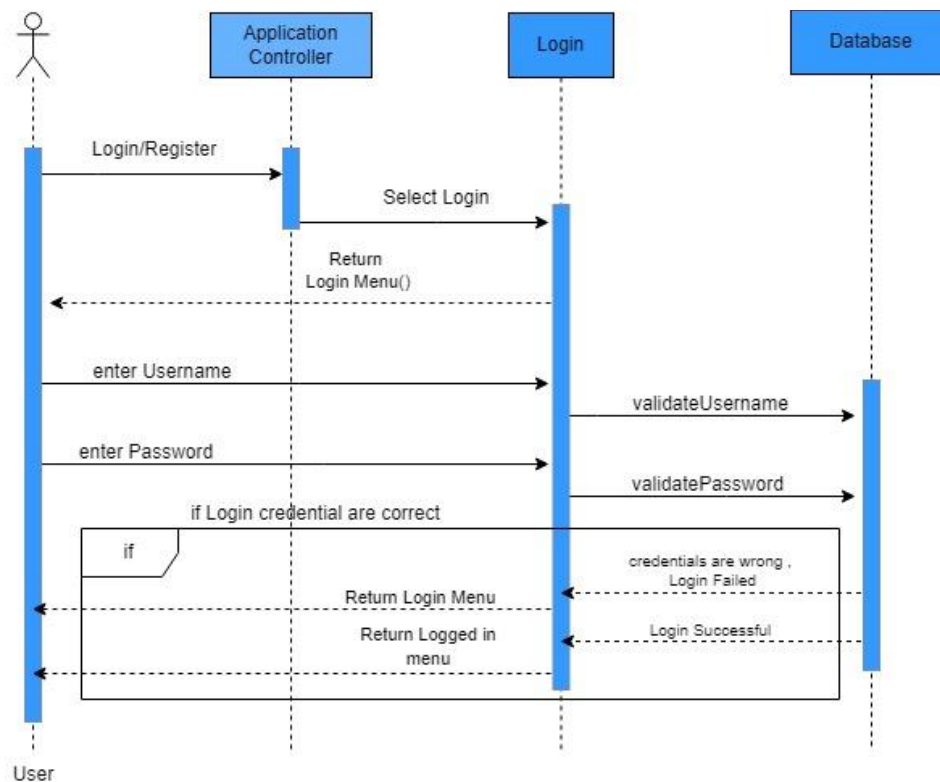




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Login

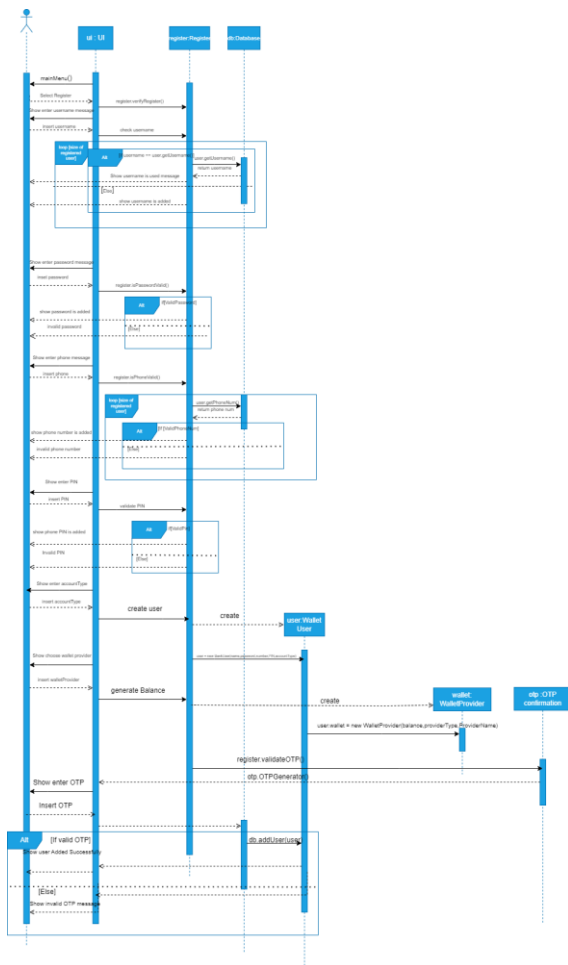




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Wallet register





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Github repository link

- <https://github.com/youssefahmedzakaria/InstaPay-Assignment>