

"NO-PROBLEM (NP)"

Web-Based Online Payment Gateway

Partial Summary

Submitted By

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Problem Statement:

With the introduction of internet banking systems have also evolved. Now you can access many banking services just using your smartphone.

But there are some problems which are still faced by customer even now.

Sometimes when we need to do some kind of transactions online, due to server problems we are not able to do.

In the present payment gateways like Paytm, phone pay, Google pay etc.

We use these to pay different types of bills, but there is no specialized money management system that helps us to allocate our money for different daily transactions like food bills, DTH, fees etc. That provides us with customized money management Equation.

The objective of our project is to provide a payment platform that that can solve these problems

Introduction:

With the advent of internet banking, the banking industry has witnessed a significant transformation. Today, customers can access a wide range of banking services right from their smartphones, making financial transactions more convenient than ever before. However, despite these advancements, customers still face certain challenges when conducting online transactions.

One of the common issues faced by customers is the occasional unavailability of services due to server problems. These technical glitches can prevent customers from completing their transactions, causing frustration and inconvenience. Such interruptions can undermine the overall user experience and impact the trust customers place in online payment systems.

Furthermore, while popular payment gateways like Paytm, PhonePe, and Google Pay enable users to pay bills for various services, there is a lack of specialized money management systems that assist users in allocating funds for specific daily transactions. Customers often struggle to keep track of their expenses and allocate money efficiently for bills related to food, DTH services, fees, and other recurring expenses. This absence of a personalized money management solution creates a need for an innovative payment platform.

The objective of our project is to develop a payment platform that addresses these challenges. We aim to provide a seamless and reliable payment system that minimizes server-related issues, ensuring uninterrupted transaction processes. Additionally, our platform will introduce a specialized money management feature that empowers users to allocate funds for different types of transactions. By offering a customized money management equation, we strive to enhance financial control and convenience for users, thereby improving their overall payment experience.

Through this project, we aim to deliver a comprehensive and user-centric payment platform that resolves the existing issues and sets a new standard in online financial transactions.

Approach to Chosen Methodology/Methods

Iterative and Incremental Model is the proper model for this project. As argued by Enwere, (2002), "Iterative and Incremental Model developed to overcome the weaknesses of the waterfall model. It starts with an initial planning and ends with deployment with the cyclic interactions in between. The basic idea behind this method is to develop a system through repeated cycles (iterative) and in smaller portions at a time (incremental), allowing software developers to take advantage of what was learned during the development of earlier parts or versions of the system. It can consist of mini waterfalls or mini-V-Shaped model. It is used in shrink-wrap application and large system which built-in small phases or segments. Also, can be used in a system has separated components, for example, ERP system. Which we can start with the budget module as a first iteration and then we can start with the inventory module and so forth (Essien, 2007).

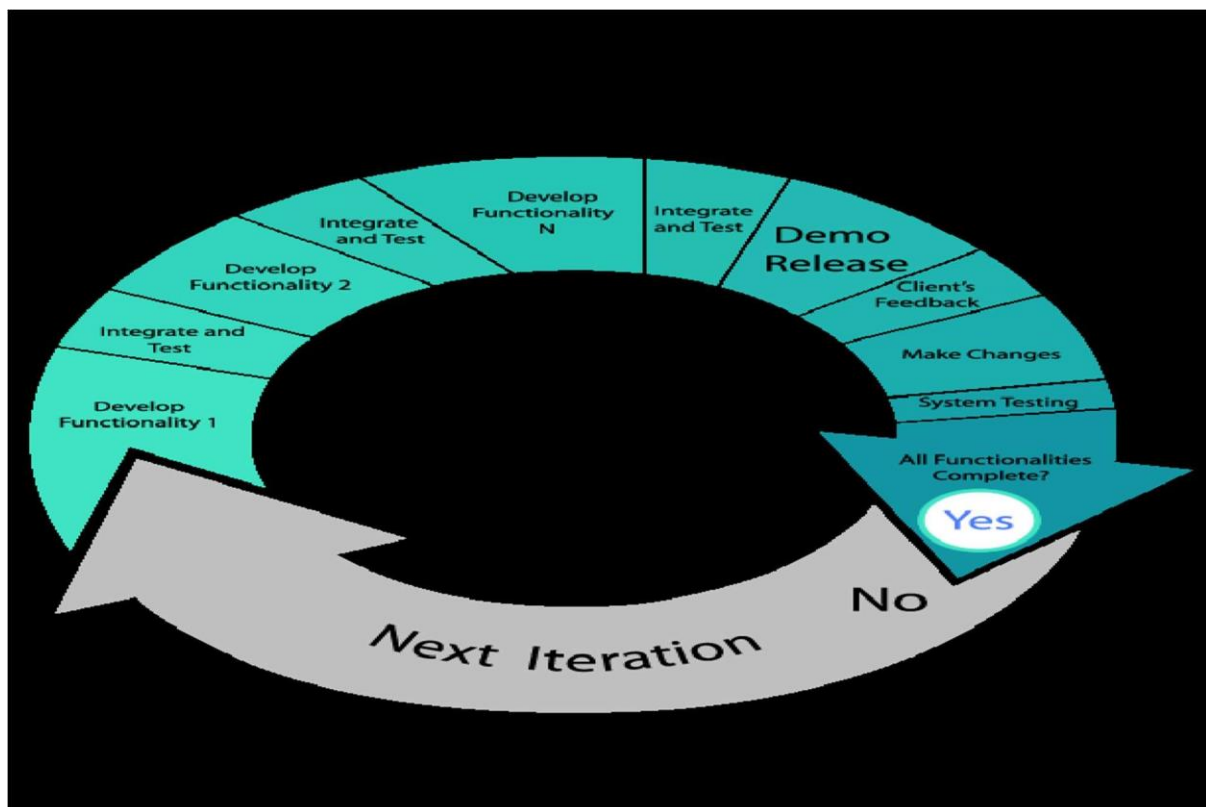


Figure: Iterative and incremental Diagram

This project work is developed with the "Iterative and Incremental Method". Therefore, there are classified into phases according to the specific concerns and requirements of this project to ensure its success and for the following.

- i. Planning and Requirements: When developing a project, the first is to go through an initial planning stage to represent the specification documents, establish the software or hardware requirements and generally prepare for the next stages of the cycle.
- ii. Analysis & Design: The next stages is the analysis to nail down the proper business logic, database models and Sequence diagram, DFD will be required at this stage in the project. The design stage also occurs here, setting up any technical requirements (data layers, services, using use case, activity diagram etc.) that will be utilized in order to meet the needs of the analysis stage.
- iii. Implementation: The actual implementation and coding process can now begin. All planning, analysis and design are documented up to this point and are coded and implementation into this initial iteration of the project.
- iv. Testing: Once this current build iteration has been coded and implemented, the next step is to go through series of testing procedures to identify and locate any potential bugs or issues that have been hidden.
- v. Evaluation: Once all prior stages have been completed, it is time for a thorough evaluation of the development up to this stage. This allows the entire team as well as clients, managers or other outside parties, to examine where the project is at, where it need to be what can or should change, what should be included, and so on.

Software requirements: The following software is required for the adequate implementation of the new design.

1. Windows operating system (windows 10)
2. Visual Studio Code (for coding)
3. Themeforest.net (for templates)

Hardware Requirements :

The new design will need the following hardware requirement to work effectively.

They include:

- i. A complete Laptop computer set with a reasonable and sizeable hard disk space of at least 2GB and above and memory of at least 2GB.

- ii. A networked environment to ensure the collection of data and records to central database storage device.
- vi. The share able resource such as printers fax machines, scanners etc. Can Also be connected so that users can make use of it.

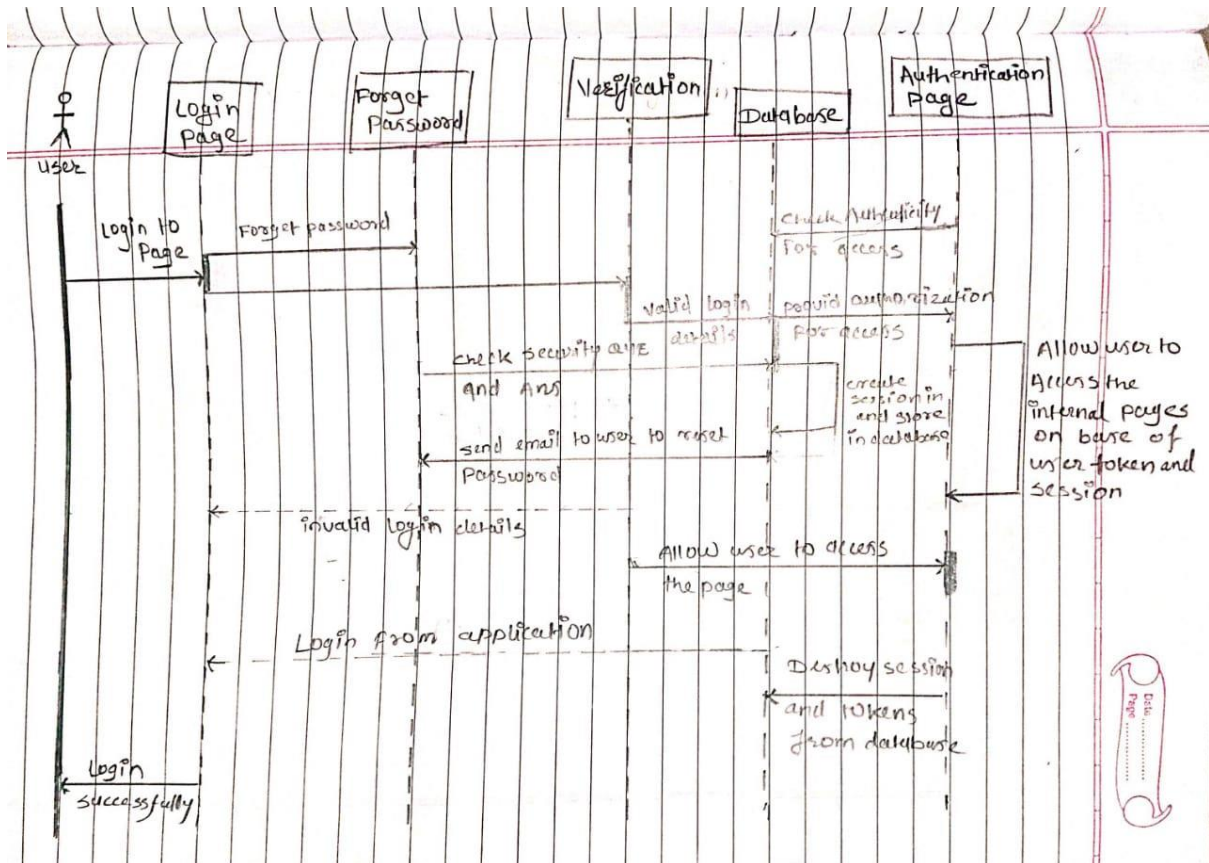


Fig. Sequence diagram for Login Page.

Activity Diagram

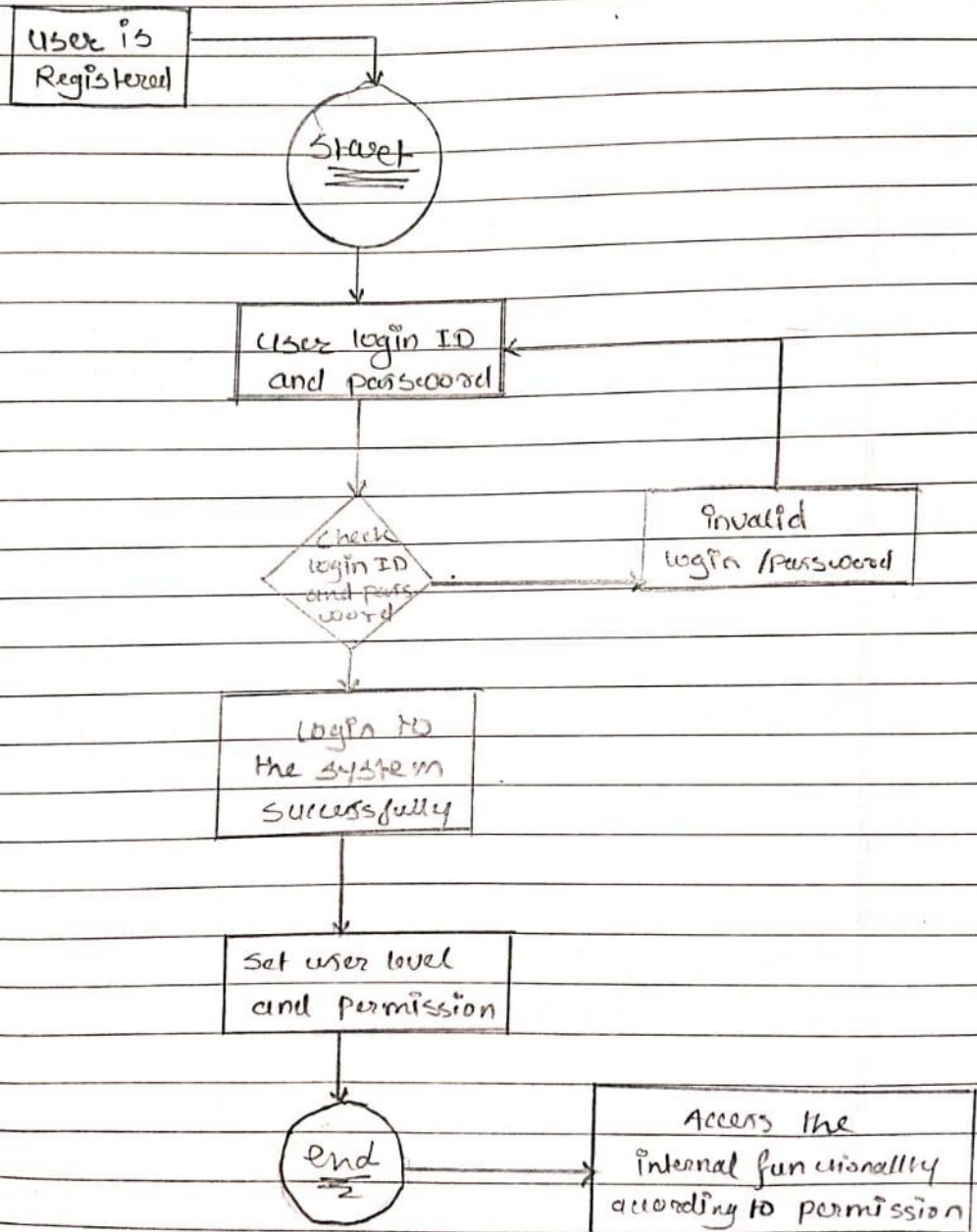


Fig. Activity diagram for Authentication.

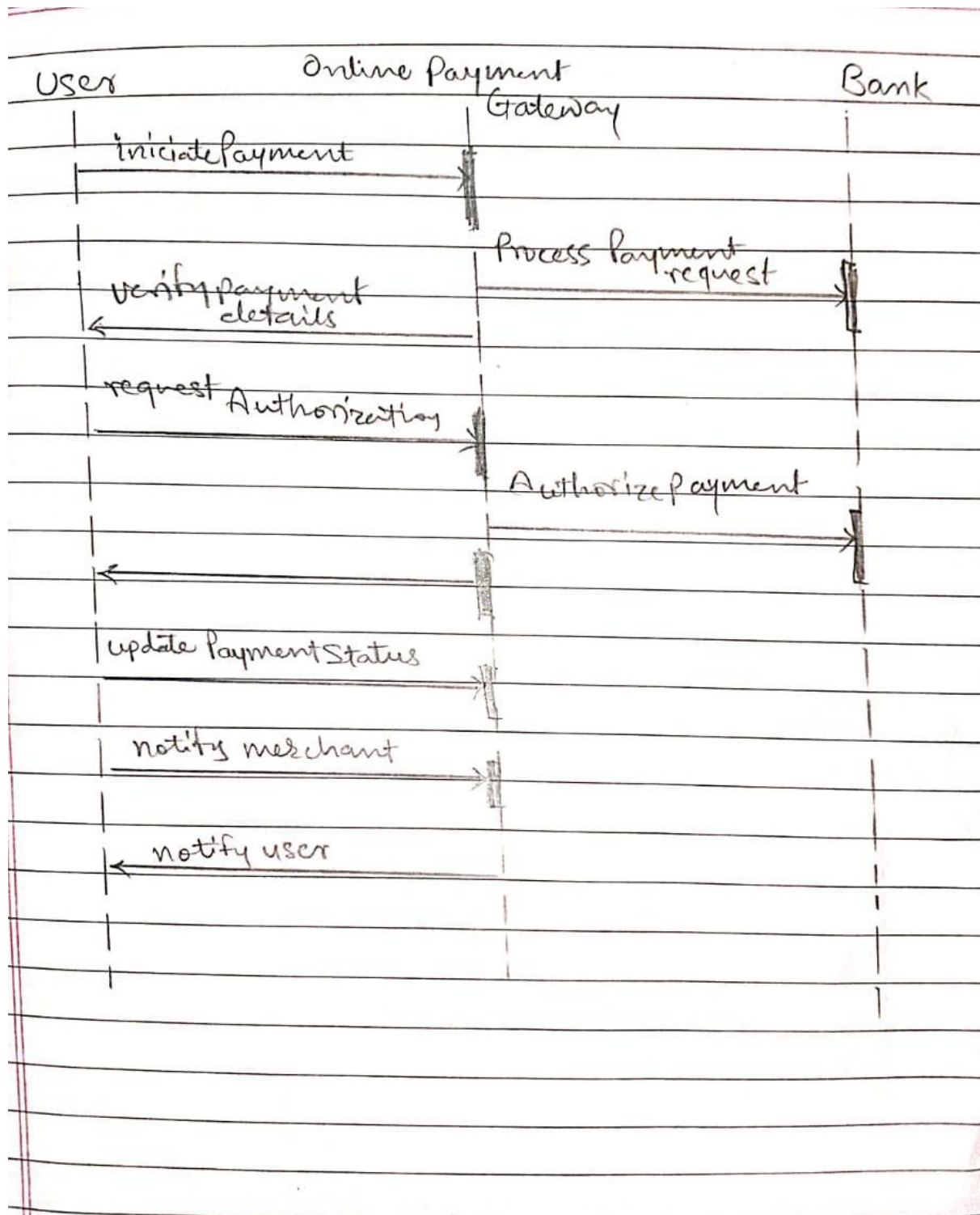


Fig. Sequence diagram for Payment

Explanation:

1. The user initiates the payment process by calling the 'initiatePayment()' function or action.

2. The message is sent from the user to the online payment gateway.
3. The online payment gateway receives the payment request and starts processing it by calling the ``processPaymentRequest()`` function or action.
4. The online payment gateway needs to verify the payment details provided by the user, so it sends a message to the bank requesting verification by calling the ``verifyPaymentDetails()`` function or action.
5. The bank receives the request for verification and performs the necessary checks by calling the ``authorizePayment()`` function or action.
6. The bank sends the authorization response back to the online payment gateway.
7. Upon receiving the response, the online payment gateway updates the payment status by calling the ``updatePaymentStatus()`` function or action.
8. The online payment gateway then notifies the merchant about the payment status by calling the ``notifyMerchant()`` function or action.
9. Simultaneously, the online payment gateway notifies the user about the payment status by calling the ``notifyUser()`` function or action.
10. The payment process is complete, and the sequence diagram ends.

This sequence diagram showcases the interactions and flow of messages between the user, the online payment gateway, and the bank during an online payment transaction.

Data flow Diagram

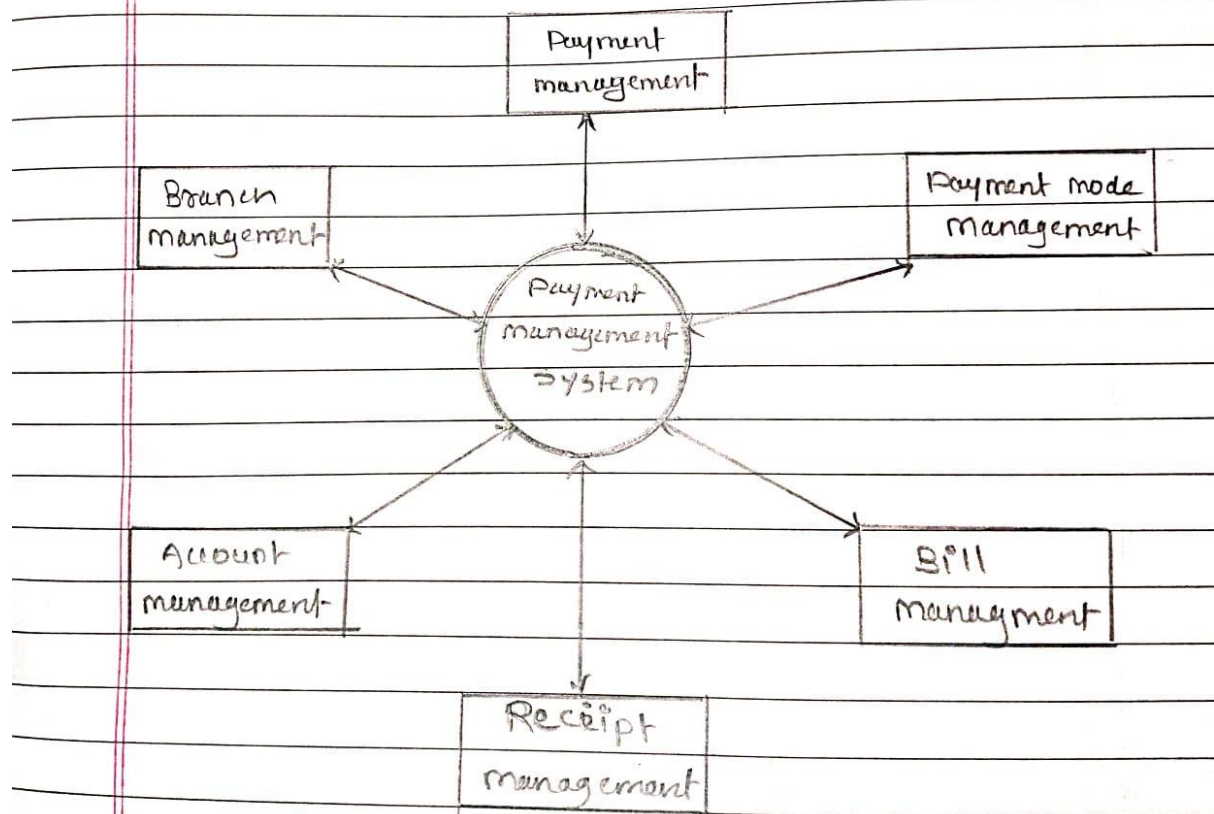


Fig. DFD for System Management