Software Engineering

Name : Pratisha A. Patel
Sapid : 60004210126
Branch : Computer Engineering
Div - C2, Batch : I

Experiment no. 4

Aim : Develop Activity Diagram and DFD (up to 2 levels) for the project.

Theory :

Activity Diagram :

1. Customer initiates Payment : The customer triggers the process by requesting a payment within the mobile application. This involves selecting a biller & entering the payment amount.
2. System Displays Payment confirmation : The mobile application displays a confirmation screen summarizing the payment details.
3. Customer confirms Payment : The customer verifies the payment details & confirms they want to proceed with the transaction.
4. System initiates UPI Request : The mobile application initiates a UPI request to the customer's UPI app on their smartphone. It includes the payment information.
5. Customer authorizes Payment : The customer receives a notification from their UPI app prompting them to authorize the payment. This typically involves entering their UPI PIN or using fingerprint recognition.
6. Conditional Branch :
   - Success : If the customer authorizes the payment through the UPI app, the process proceeds to step 8.
   - Failure : If the customer cancels or there's an issue with UPI authorization, the process moves to step 10. (Payment Failu
7. System waits for Response : It waits for a response from the customer's UPI app regarding the payment authorization.

8. Payment Processing :- It communicates with the designated Payment service Provider (PSP) to process the UPI payment
9. System receives Payment status :- It receives a notification from the PSP indicating the payment status.
10. Payment status Display :- It displays a message to the customer informing them about the payment status.

Data Flow Diagrams :-
The DFD enables you to develop models of the information domain & functional domain. As the DFD is refined into greater levels of detail, you perform an implicit functional decomposition of the system. At the same time, the DFD refinement results in a corresponding refinement of data as it moves through the processes that embody the application.
Guidelines for drawing a data flow diagram :-
1) The level 0 data flow diagram should depict the software as a single bubble
2) Primary input & output should be carefully noted.
3) refinement should begin by isolating candidate processes, data objects & data stores to be represented at the next level.
4) All arrows & bubbles should be labeled with meaningful names
5) Information flow continuity must be maintained from level 0 to level 2 &
6) one bubble at a time should be refined.

P.T.O.

SDS Page No.
Date / /

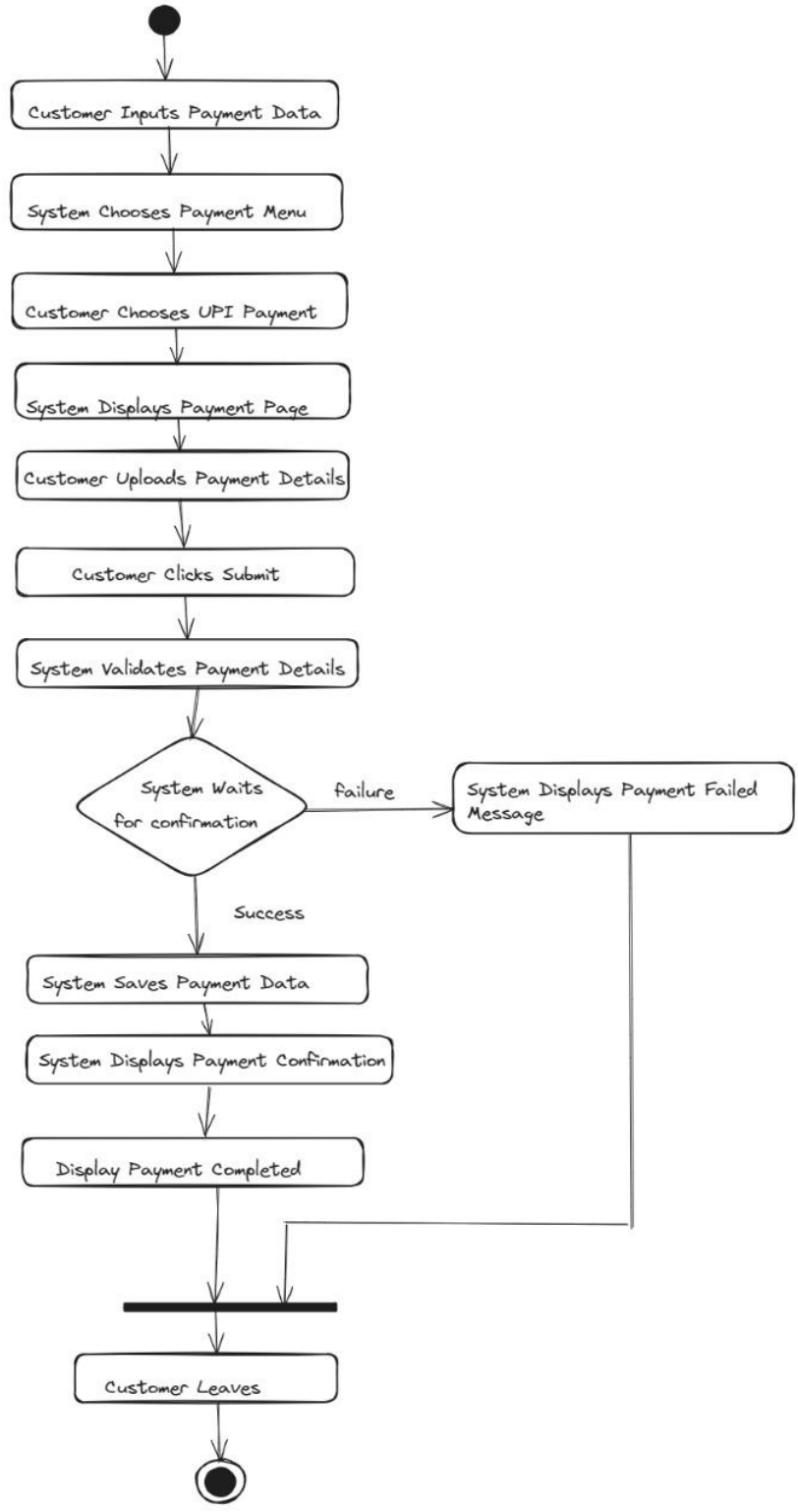
Conclusion :

Analyzing both the activity & DFD for the UPI payment process reveals a clear sequence of steps. The DFD provides a high-level overview of data flow between the user, the mobile app, and external entities like the UPI app & Payment service Provider (PSP). The activity diagram delves deeper, illustrating the user's interaction with the mobile app, confirmation steps, UPI authorization, and the system's communication with the PSP for processing & final status updates. Together these diagrams offer a comprehensive understanding of the UPI payment journey, from user initiation to final payment confirmation or notification.

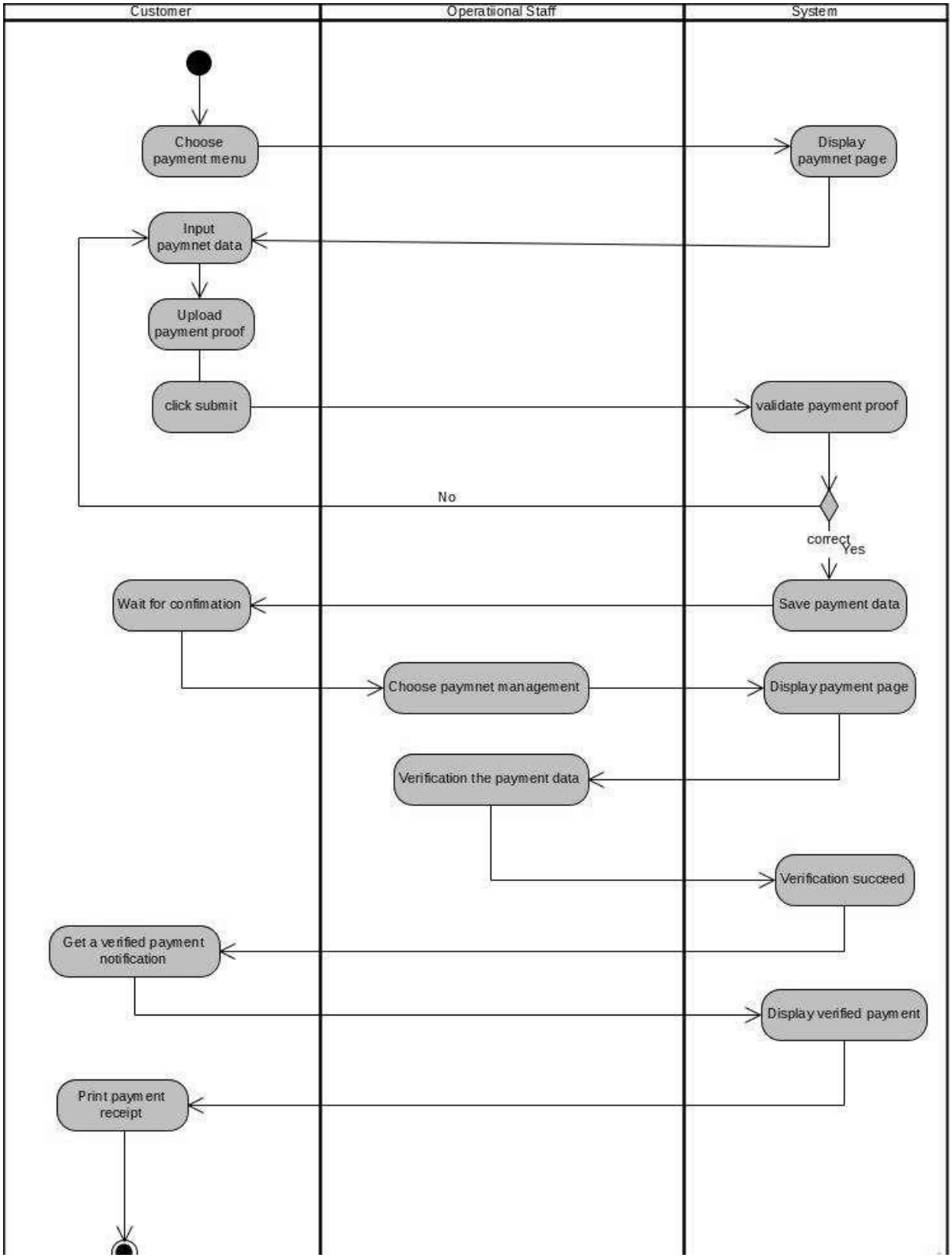
Name: Preksha Patel
SAPID: 60004210126
Div/Batch: C21

SOFTWARE ENGINEERING
EXPERIMENT -4

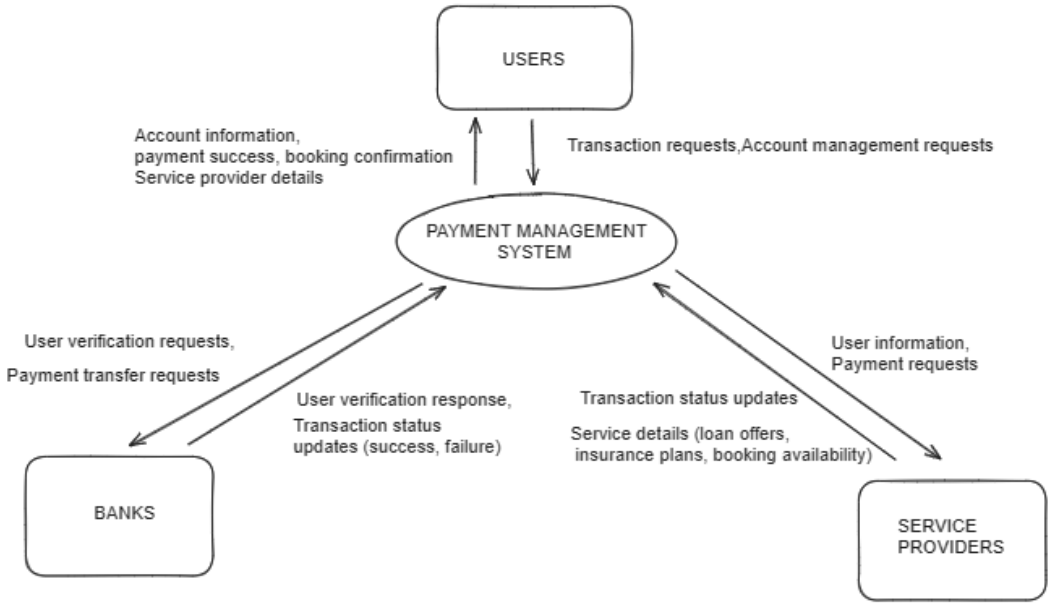
Activity Diagram



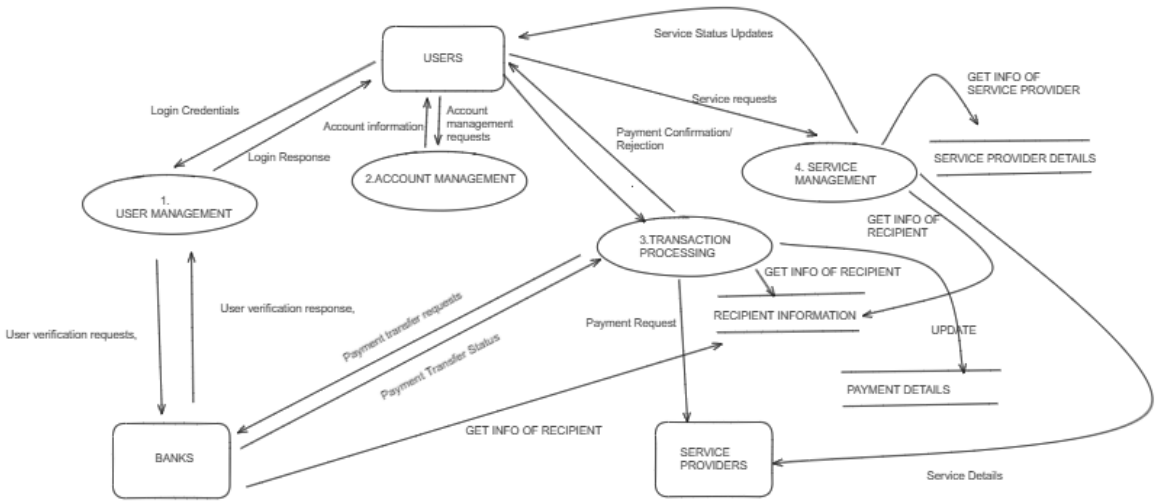
Swimlane Diagram



DFD Diagram (Level 0)



DFD Diagram (Level 1)



DFD Diagram (Level 2) for Initiate Payment sub-process