

Q.1.

- 1) Both activity & state chart diagrams model the dynamic behavior of the system.
- 2) Activity diagram is essentially a flowchart showing flow of control from activity to activity.
- 3) A state chart diagram shows a state machine emphasizing the flow of control from state to state.
- 4) An activity diagram is a special case of a state chart diagram in which all or most of states are activity states & all or most of transitions are triggered by completion of activities in the source state.  
(An activity is ongoing non atomic execution with a state machine).
- 5.1 Activity diagram may stand alone to visualize, specify & document the dynamics of society of objects or they may be used to model the flow of control of an operation
- 6.1 State chart diagrams may be attached to class use cases, or entire systems in order to visualize, specify & document the dynamics of an individual object.

Q.2 Let's consider source of data be class diagram of Calculator.

Steps:-

1. Class is mapped class in C++
2. Attributes are assigned with access specifier & datatype.

3.

class Calculator.

4.

```
private int a, b;  
public int result;
```

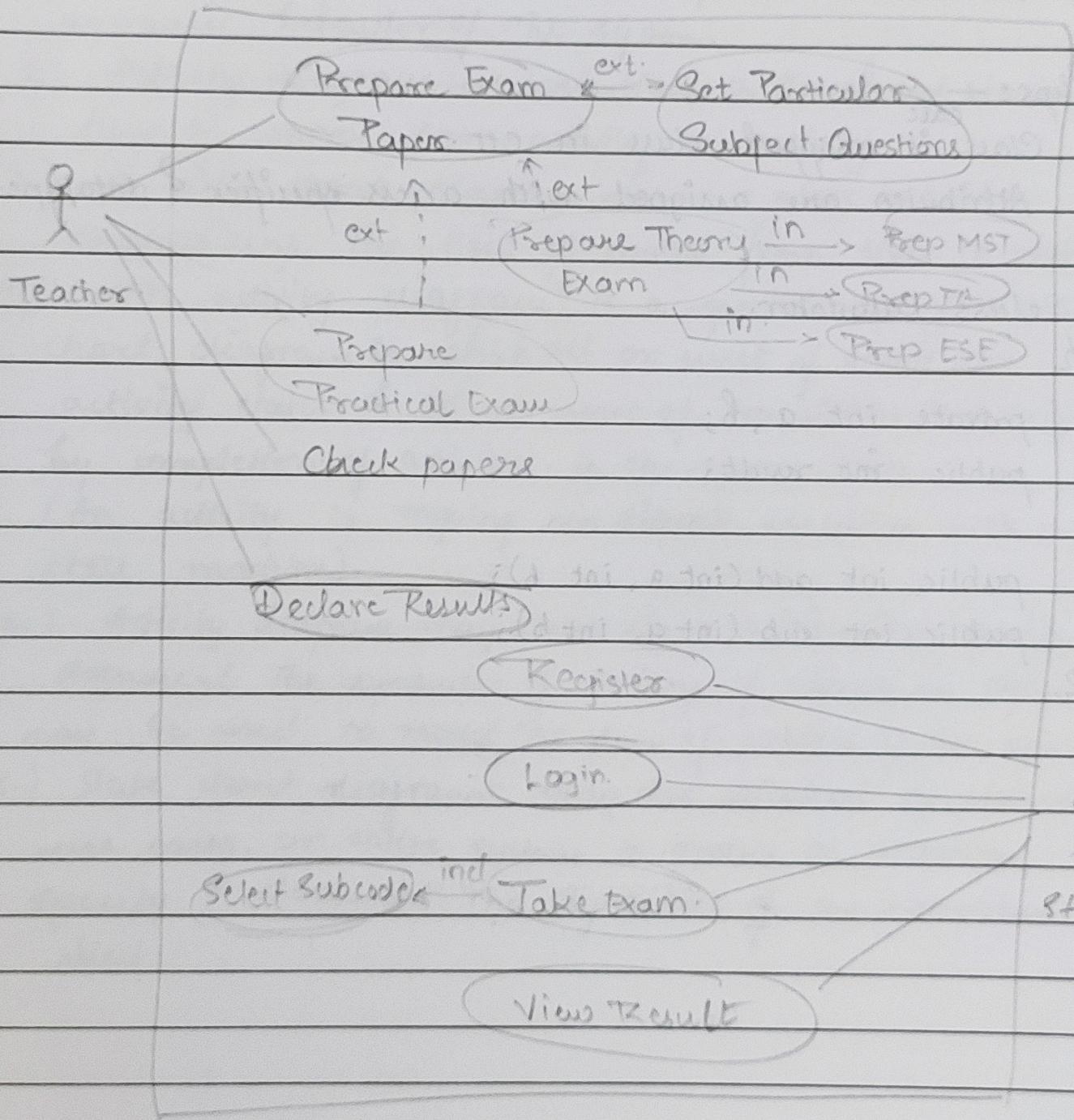
```
public int add(int a, int b);
```

```
public int sub(int a, int b);
```

5.

Q.5.

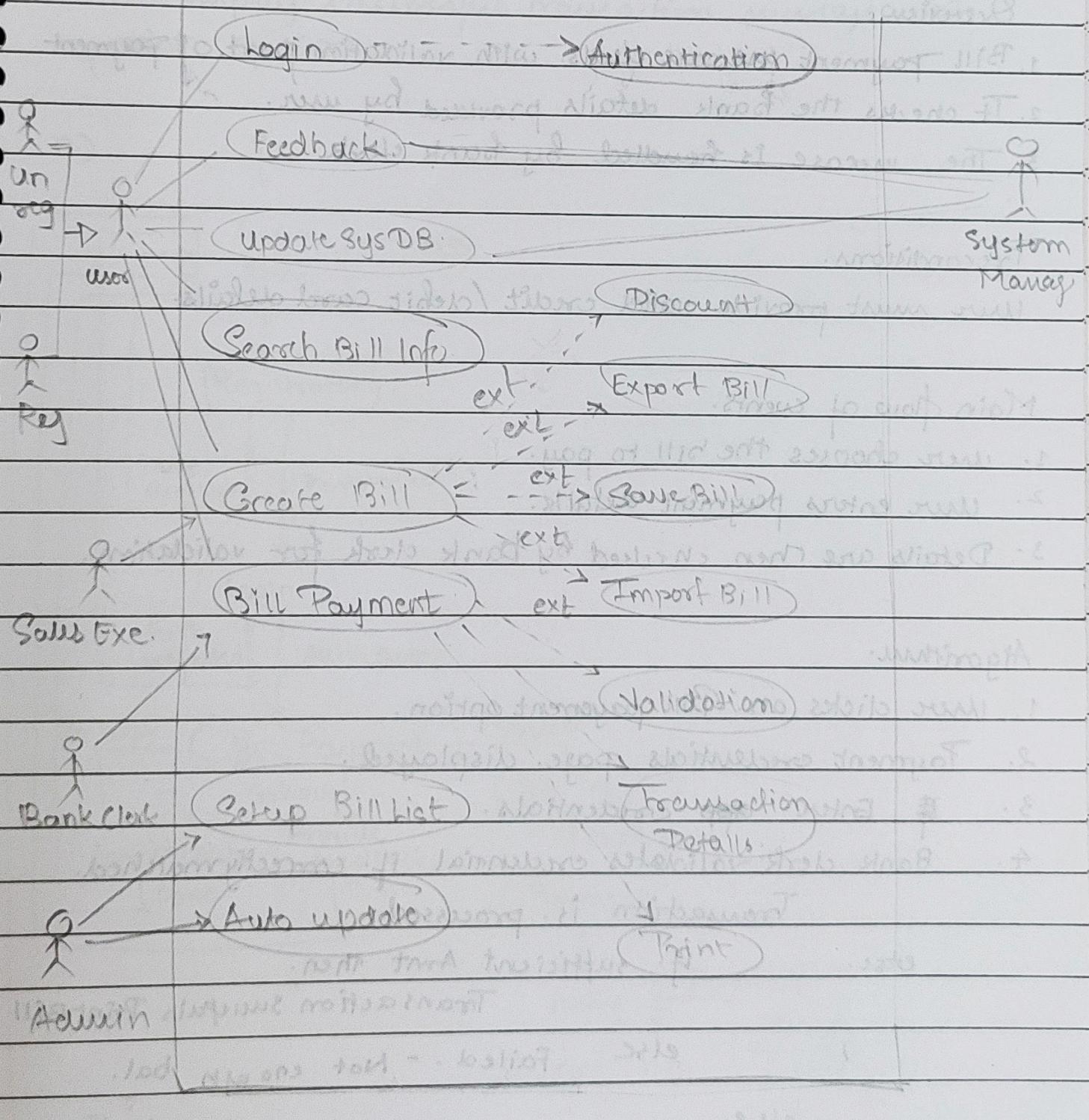
a)



classmate

Q.4. All in one billing system.

a.)



classmate

## b.) Bill payment.

### Overview.

1. Bill Payment use case deals with validation part of payment.
2. It checks the bank details provided by user.
3. The usecase is handled by bank clerk.

### Preconditions.

User must provide valid credit / debit card details.

### Main flow of events.

1. user chooses the bill to pay.
2. User enters payment details.
3. Details are then checked by bank clerk for validation.

### Algorithm.

1. User clicks on Bill payment option.
2. Payment credentials page displayed.
3. Enter app credentials.
4. Bank clerk validates credential if correctly matched.  
    Transaction is processed.

else.      if. sufficient Amt then.

    Transaction successful, Print Bill

    else Failed. - Not enough bal.

    else

        Incorrect credentials.

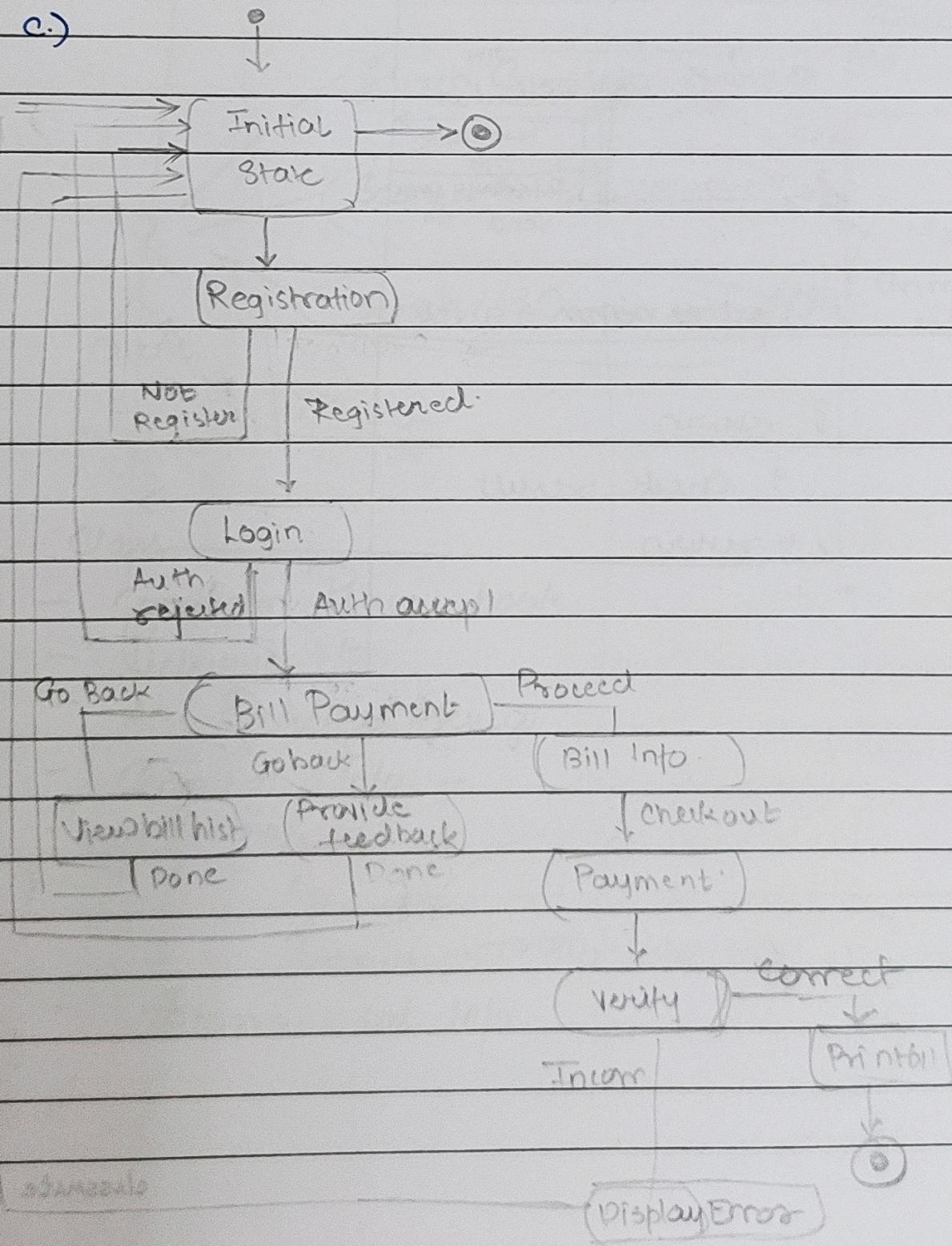
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Post condition.:

Amount must be transferred to proper channel.

4. display successful transaction message with print option

c.)



5-6.)

Examiner Student Test Test Paper Result

1. Prepare

2. return

3 starts

4 Searches  
Test Paper

5 Display paper

6 Displays paper  
Send em

7 Checks paper & gives

8 return

9. check result

10. return

Display methods

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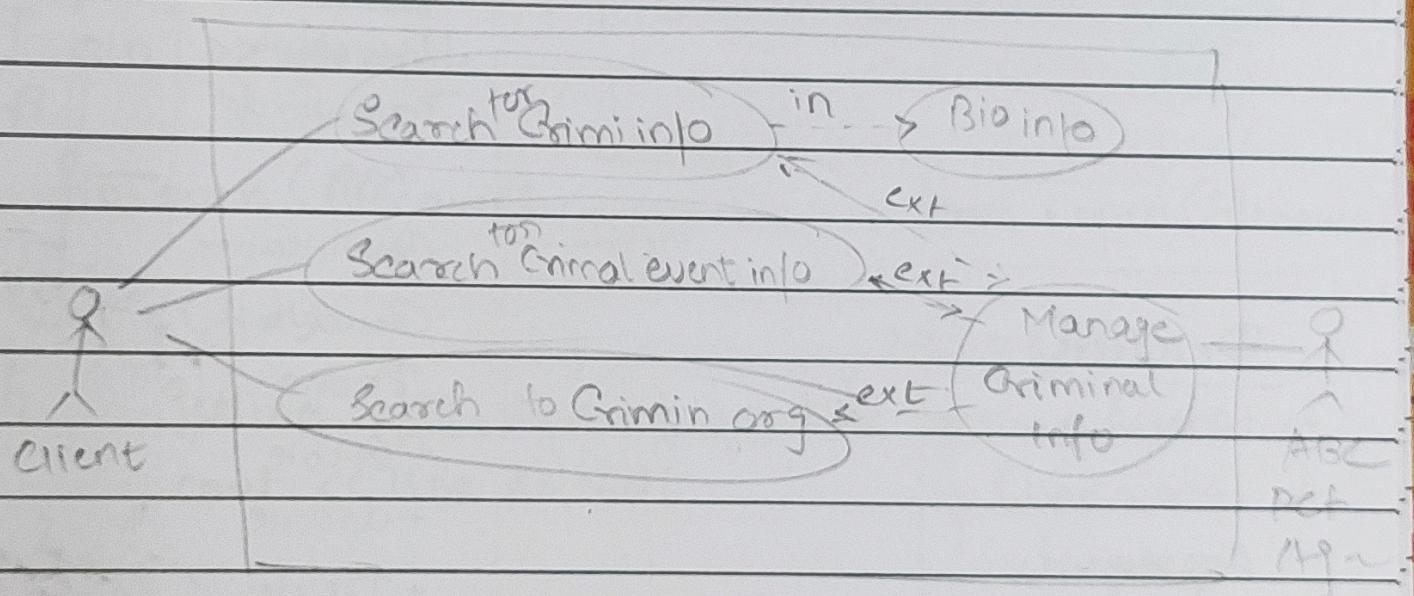
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C.i) Common Place book.

ABC Detective Agency.

Private Detective, Police → Client.

Criminal Records

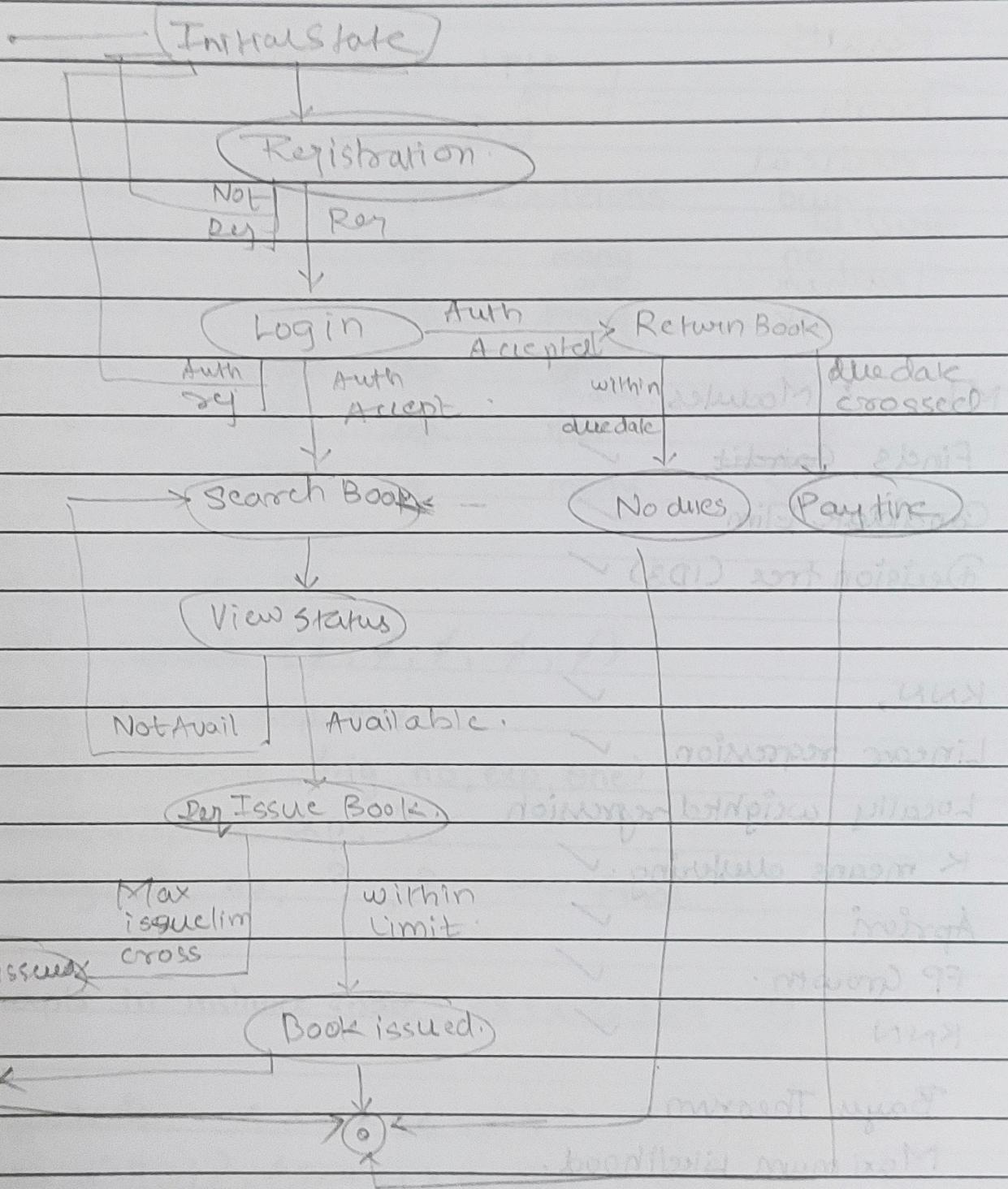


Class:

- Common Place book.
- Detective.
- ABC Detective Agency.
- Criminal Info.
- Name
- Age

Details → Bio Info

- Biographical Info.



classmate

