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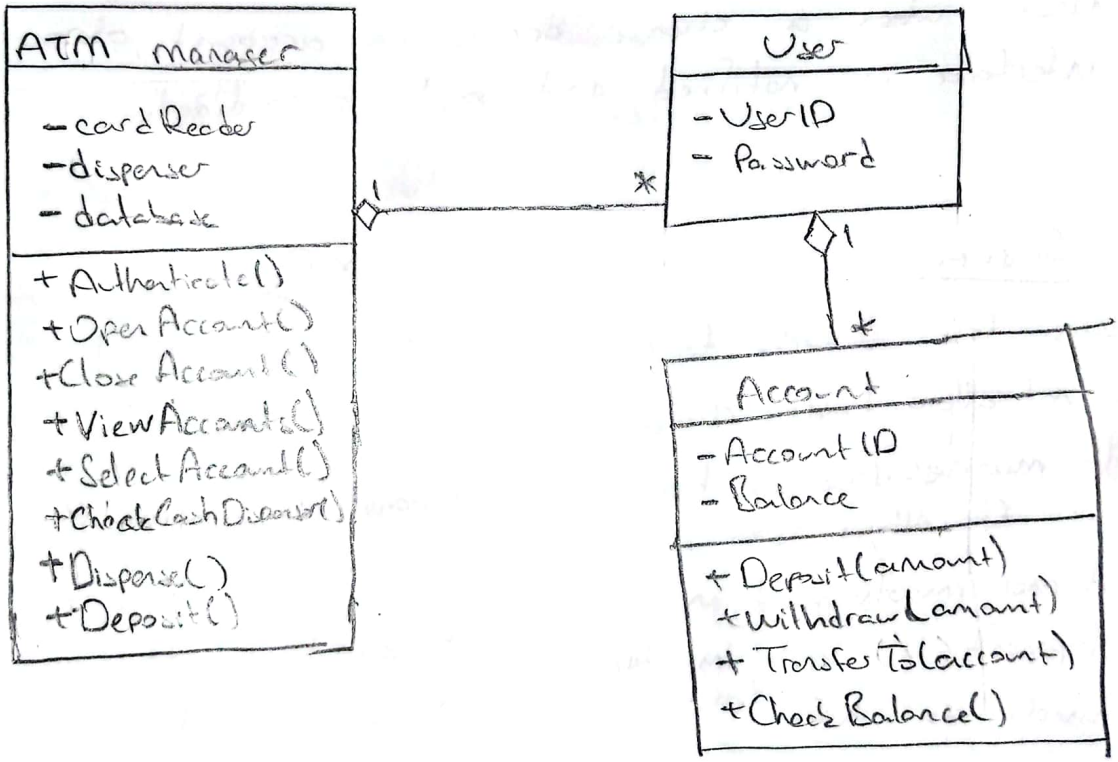
1) a) Agile methodology will be appropriate for this project, because Agile provides incremental development. This means that the development team can quickly deliver the project. Also, Agile methodology involves customer interaction and this allow that development team can get feedback continously and adapt the posect to meet the customer requirements.

b)



c) Layered architecture can be used to design an ATM System. System can be layered as;

→ Graphical user interface
→ User interactions
→ Authentication
→ Information retrieval
→ Transaction management
→ Database

d) 1) The Abstraction-Occurence pattern can be usefull in ATM design. Since a user may have more than one account, an abstract account can be created and inferred when user creates an account. So, we can represent these occurences with this pattern.

2) Observer pattern can be used to associate classes that belong different modules or layers. For example the class responsible for user interface can be associated with using observer patten to the class responsible for account manage. So that when a change occurs in account object, the user interface is notified and act accordingly.

2)

Scrum

- Cycles takes 2 weeks to 4
- Does not allow timeline change
- Daily meetings. Everyone know about the others job
- Customer involvement in development is not important as much as XP

XP

- cycles takeat 1-2 weeks
- Allows change in timeline
- pair programming. Programmers work together
- Test-first development
- Costumer involment in development is more important
- Focus on engineering practices

3) a) functional requirements, state what the system does, how the system react to the inputs. On the other hand, domain requirements are constraints on the systems that specific to the systems domain.

b) functional requirements, provide the services that a system should have. They state what a system does. Non-functional requirements state how the system provides the given service. For example, how fast can system respond, how much memory can system use etc.

4) a) Test cases for equivalent classes:

→ single element list
→ empty list
→ invalid strings
→ multi element list

Test cases for boundry classes:

→ List with desired string is last element
→ List with desired string is not in the list
→ List with desired string is in the middle of the list

b) Decision point coverage is used to test each outcome for the conditional statements or branches. Full path coverage aims to test every possible path or sequence in the code. That's why full path coverage requires more test cases. But decision point coverage can miss some errors related to some specific data values or loop related issues.