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SUBJECT: Object Oriented Software Engineering
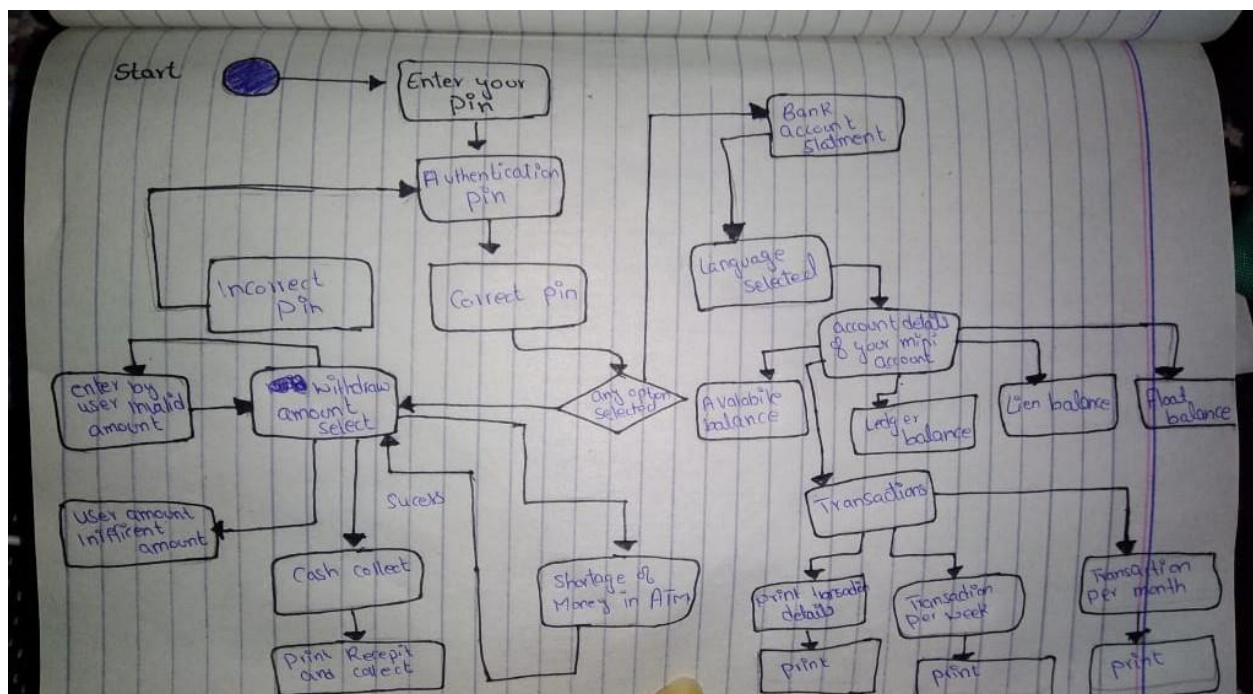**SUBMITTED TO : MAAM SANA**
SEMESTER: 5TH
DEP: BS(SE)

Question #1 (16 Marks)

An ATM machine can be used for Money Withdrawal and getting Mini Account statement. Make a State Machine Diagram for these two cases.

ANSWER:

Question #2 (10 Marks)

You have to make a personalized software for a consultancy firm. Some components of the software are those for which you already have code. Some parts of the software are such that you can find ready-to-be-used code from internet. If you want

to embed both types of code into your product, and complete the software by coding the remaining part, what can you expect during this whole process? Will it be easy or hard? What problems you might face and how will you overcome those problems?

ANSWER:

Obtaining codes from the internet is known as code reuse. Using ready-made codes reduces the development time, resources and fewer development team. However, code reuse might bring some licensing concerns, replicate bugs from the borrowed code, etc.
Software development is a field where one can choose to reuse codes from other developers. These codes might be readily available on the internet. However, the open code might not be able to accomplish all your needs, and hence you will need to code some parts to suit your needs. Code-reuse reduces the development time since the developer will not need to start developing a software system from scratch.

The following are the benefits of using ready-made code from the internet.

The development time will be shortened
The process of development will require fewer people.
The software will be developed at lower costs.
However, code reuse might come with various challenges. The following are the challenges that you might encounter in the process.

The bugs from the borrowed code might be replicated
There might be some licensing concerns due to reusing other peoples' codes.
It might take some time for the developers to familiarize themselves with the code obtained from the internet.

Question #3 (24 Marks)

1. What is the difference between a Task and a Work Product? Explain in your own words and give an example of each.

   # ANSWER:

   A task is a single thing that you can do in one session. A task might be labeling your products or making a single item. A work product

includes the beginning stages of a project, proposals, agendas, reports, analysis and information on the project. A deliverable, on the other hand, is the end result of the project.

Example of Work Product

There are many example of work product are, some of them are;
- Requirements
- Market Research
- Design
- Technical Component

Example of Task

There are also many different example of Task are available, some of them are;
- Requirements Gathering
- High-Level Design
- Low-Level Design.
- Development.
- Deployment.
- Maintenance.

2. You are working on coding of a software in which a lot of calculations are involved. The calculations are quite easy to be done, but you do expect some inconsistency in the calculations because of some inner problem with the software. Would you rather go for Fault Avoidance technique or Fault Detection technique in the Testing Phase? Explain your answer.

ANSWER:

Fault avoidance techniques try to detect faults statically, that is, without relying on the execution of any of the system models, in particular the code model. Fault avoidance tries to prevent the insertion of faults into the system before it is released. Fault avoidance includes development methodologies, configuration management, and verification.

Fault detection techniques, such as debugging and testing, are uncontrolled and controlled experiments, respectively, used during the development process to identify erroneous states and find the underlying faults before releasing the system. Fault detection

techniques assist in finding faults in systems, but do not try to recover from the failures caused by them. In general, fault detection techniques are applied during development, but in some cases they are also used after the release of the system.

Firstly I will look at the software engineering model ,which type of model I am using,let suppose if I am using waterfall model and I am facing issue in calculations just because of missing some calculations or you can say some values and there comes some inner problem in software in testing phase .so

 i will prefer fault detection technique because if I choose fault avoidness technique then my whole software will be collapse.Let suppose if choose egile model, here its all upto my choice .if I choose detection or avoidness technique .because in this only problems comes in that specific phase.

3. There are different types of testing. State which techniques are performed by the developer and which of them are performed by the client.

ANSWER:

DEVELOPER TECHNIQUES:

There are many testing types.
The developer testing types :
1. Alpha testing
2. Backward compatibility testing
3. Unit testing
4. Usability testing
5. Integeration testing

CLIENT TECHNIQUES:

The client testing types
- Beta testing
- Acceptance testing
- System testing
- Performance testing