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***Question 1***

What is architecture reconstruction? Briefly describe the various reconstruction

activities and draw a diagram.

Architecture reconstruction is when an architect decides to rebuild the structures that created a system from the residual pieces. Reconstruction applies to products that already made at least one complete pass through the design and build phases. The architect will use artifacts from the initial architecture, if they exist, and the architect will employ several strategies to overcome lacking documentation. Such strategies include: involving anyone with knowledge of the system in the reconstruction, reading header files, reading source code and decompiling machine code from the existing system.

*Activities:*

*Diagram:*

***Question 2***

Provide the context, problem, and a real-world scenario for architecture

reconstruction (different from class example).

Context:

A team designed, developed and deployed a system for an Android phone application. The original architecture documents are incomplete, and half the original developers still work for the company. Today, the business goals shifted, and the company would like to market to iOS customers as well as Android.

Problem:

Our manager would like a cost estimate of reusing the existing architecture when porting between Android and iOS development frameworks.

Scenario:

Reconstruction would be necessary to evaluate the cost analysis of porting the system to iOS.

***Question 3***

You oversee the football stadium at a Big Ten school and oversee security.

Answer the following questions with a security mindset:

i) What assets do you need to protect?

Personal information of everyone involved

Students

Faculty

Staff

ii) What threats will you defend against?

External

Cracking

Hacking

Malware

Internal

Sabotage

iii) What countermeasures can you justify, in terms of costs and benefits?

Accounts

Two step account verification

Strong passwords

Expiring passwords every 2 months

***Question 4***

Listen/Watch the following webinar from SEI and submit a half page single spaced

summary in your own words about the webinar.

<https://resources.sei.cmu.edu/library/asset-view.cfm?assetid=18914>

References

[1] Dr. Pushpa Kumar, Lectures 17-18 Architecture Reconstruction, Topic: "Module8”, SE-4352.001, Software Engineering, University of Texas at Dallas, ECSS, 10/16/2018

[2] Dr. Pushpa Kumar, Lectures 19-20 Security, Topic: "Module9”, SE-4352.001, Software Engineering, University of Texas at Dallas, ECSS, 10/23/2018

[3] Dr. Pushpa Kumar, Lectures 21-22, Topic: "Module10” Software Product Lines”, SE-4352.001, Software Engineering, University of Texas at Dallas, ECSS, 10/30/2018