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This tutorial is designed to revise your knowledge on Component and Deployment Diagrams.

Activity 01

Draw a component diagram.

- Seminar Management <<UI>> is an Application component which make use of different components interfaces.
- A facility is a component which implements FacilityDataAccess and Facilities interfaces.
- Facilities interface is used by Seminar Management.
- Student component implements StudentDataAccess and student interfaces and student interface is used by Seminar Management.
- Seminar component implements the SeminarDataAccess and Seminar interfaces.
- Seminar Management component makes use of the Seminar interface.
- Persistence <<infrastructure>> component implements Persistence interface which is needed by the Facilities, Student and Seminar components.
- University DB <<database>> component implements the JDBC interface which is needed by the Persistence component.

Activity 02

Given below is a detailed description of a web-based application developed for an online banking system "Smart-E-Banking". Model a physical diagram according the given description.
Note: You may use appropriate operating system in required places.

This application can be used by both mobile and desktop users to do banking transactions much easier. Hence, there are two modes of access, a web application or as a mobile app. The desktop user can access the "Smart-E-banking_Webclient" web application through a browser while a mobile users need to setup the "Smart-E-banking" mobile app from the Google's play Store or Apple's App-Store.

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The main web store application SEB runs in an application server, which deployed in Dell EMC Server. The SEB web application contains three sub components; Authentication, AccountMgt and PaymentMgt. The Authentication component implement iUser interface which used by AccountMgt and PaymentMgt. The AccountMgt component facilitates the users to do all the activities relates to his/her bank accounts(Account Summary, Balance Check, etc…). The paymentMgt component handles all the online bill payments the users makes.

UI Component contains all the user interfaces of this system that are developed through Java Server Pages (JSP). It is installed in the main web server called UI_SEB WebServer. This web server runs in a Lenovo ThinkServer hardware server. UI component is responsible to create i_SEb interface, which used by the mobile and desktop devices to connect with the web Server. Also UI component uses Authentication, AccountMgt and PaymentMgt com/components through iUser, iAccountMgt and iPay interfaces respectively.

The backend IBMServer server runs Account application which contains two components; Accounts and Transactions. The AccountMgt uses the imanageAccount interface realized by Account application. Furthermore, Transaction component realizes iTransaction interface which used by PaymentMgt which handles all the online bill payments.

Mobile user and desktop user connected to the Lenovo ThinkServer via HTTP. Lenovo ThinkServer connected to Dell EMC server and Dell EMC server connected to IBM server via LAN.

Self-Study Question

Students should try this question by themselves.

Activity 03

 "Neo-Safe-Health" (NSH) is a new E-Health application developed under the vision of empowering health consumers and assisting health professionals. Given below is a detailed description of the deployment of NSH application. Model a physical diagram for NSH.

- NSH is a web application which is accessible for any user via a mobile phone or a desktop. Mobile users need to download and install the NSH_M_Client application

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from the respective app stores (Android or IOS), while desktop users can access the system using the browser.

- NSH's backend applications is named as NSH_Service, which is implemented in java and is deployed in an NGINX web server. NGINX runs in Ubuntu 16.04LTS which is installed in a Dell PowerEdge-T130 Hardware Server.

- This NSH_Service application consists of three core modules (components) such as UI, Patient_Services and Doctor_Services.

- The User Interface (UI) of NSH is developed using JSP web pages. UI component implements "I_NSH" interfaces which can be accessible by both mobile and desktop users. Other core-components (Patient_Services and Doctor_Services) implements their own interfaces such as iPatient_Services and iDoctor_Services respectively. UI component will retrieve information using these when needed.

- Both desktop and the mobile devices connect to the web server via http over internet.