ECC Tutorial Questions Week 3

Q: Define a data center. What are the components of data center technology

A: A dedicated housing used to house computer system dedicated to running and serving applications and their associated components which include telecommunications and storage systems.

Q: Compare hardware – based virtualization and OS – based virtualization

A: Virtualization is the abstract of a computer system, making that system a virtual machine. Hardware-based virtualization makes that machine available to access for everyone with the main advantage being that it is faster due to the virtual machine being on top of the hardware. OS – based virtualization adds the OS in between the virtualization software and the hardware which provides more accessibility for more users.

Q: Define multitenant technology. What are the common characteristics of multitenant applications?

A: Multitenant technology is defined as an application where multiple people have access to said application in one instance with different interface. The characteristics of multitenant are:

* Isolation and privacy: Everyone has their separate instance and only they can view the data in that instance
* Upgradability: Application upgrade and maintenance will be done by another party
* Allow you to backup and perform data recovery
* The application will be able to support increased demand from the user
* Users will only be required to pay for what they used

Q: What are the fundamental container architecture elements?

A: A container is the encapsulation of an application and its environment for it to run independently. The core elements of container architecture are:

* Container engine: A piece of software that processes the user request
* Container build file: A text file explaining what do you need in the container
* Container image: A file that holds the executable code of the application and operation in isolation on IT infrastructure

Q: What are the services that are provided by IaaS providers?  
A: The services provided by IaaS are:

* Virtualized CPU and storage for your virtualization need
* Storage solutions allowing you to store your data
* Network devices allowing you to connect your devices to connect to the internet
* A load balancer to distribute the traffic across all devices equally

Q: Compare cloud delivery models

A:

* IaaS:
  + Allows full administrative access to all the functionality within the system
  + Customers have full administrative access to virtual IT resources and possibly physical IT resources
  + The provider only provides access to the system
* PaaS:
  + Allows limited control and limited access to the system resources
  + Customers have limited access to the IT resources relevant to the platform
  + The provider will pre-configure your platform, install it and maintain it for you
* SaaS:
  + Provide only user level access
  + Customer can only access frontend user interface
  + The provider will implement, manage and maintain the system for you

Q: Describe the common cloud deployment model

A: We have 4 cloud deployment models namely public, private, community and hybrid models. A public model allows access to all users with an internet connection and managed by a third party

A private model allows access only from one organization using their own internal network.

A community model is when multiple organizations collaborate to use the cloud and share the cost

A hybrid model is a mix of public and private model

Q: Describe AWS infrastructure features

A: Scalability, security, database services, storage services, compute services.