

Cloud Computing

Sessional Assignment

<u>Name: Faisal Karim Afridi</u>	<u>ID: 13163</u>
<u>Program: BSSE</u>	<u>Module: Sec A</u>

Q1: Explain in detail Service Oriented Architecture (SOA) in cloud computing.

Ans: Service-Oriented Architecture (SOA) is an architectural approach in which applications make use of services available in the network. In this architecture, services are provided to form applications, through a communication call over the internet.

- SOA allows users to combine a large number of facilities from existing services to form applications.
- SOA encompasses a set of design principles that structure system development and provide means for integrating components into a coherent and decentralized system.
- SOA based computing packages functionalities into a set of interoperable services, which can be integrated into different software systems belonging to separate business domains.

Q2: Explain in detail prominent security threats to the cloud computing.

Ans: The most common and prominent security threats to the cloud computing are as follows.

- The integrity of the data is very important the most important issue is Data Breach it is an incident in which an individual unauthorized person steals sensitive / personal data.
- The Data lock in is also a thread to the cloud computing company it is usually referred to as vendor lock-in and it is a situation in which a customer using a service cannot easily transition to a competitor's product or service.
- The Data removal it is a residual representation of data loss.
- Data recovery might become difficult in case of server breakdown or failure.

- Data locality is the implementation of the concept that the data should be stored near to where it is being processed but it makes things quite complex for simple applications.

Q3: Explain in detail Cloud Infrastructure Mechanisms.

Ans: Foundational building blocks of cloud environments, which comprises

➤ **Logical Network Perimeter:**

An isolation of network environment establishing a virtual network boundary. Purposes of which is to:

- ✓ Isolate IT resources in a cloud from non-authorized users.
- ✓ Isolate IT resources in a cloud from non-users.
- ✓ Isolate IT resources in a cloud from cloud consumers.
- ✓ To control the bandwidth that is available to isolated IT resources.

➤ **Virtual Server:**

A form of virtualization software that emulates a physical server. Used by a cloud provider for resources sharing. In other words Virtual server means virtual machine.

➤ **Cloud Storage Device:**

Storage devices designed specifically for cloud-based environment. Instances of these storage could be virtualized. Able to provide fix-increment capacity allocation in support of pay-per-use mechanism.

➤ **Cloud Usage Monitor:**

A lightweight and autonomous software program responsible for collecting and processing IT resource usage data.
e.g. amount of data, number of transactions, usage time, etc.

➤ **Resource Replication:**

The creation of multiple instances of the same IT resource. Replication is typically performed when an IT resource's availability and performance is need to be enhanced.

➤ **Read-Made Environment:**

A defining component of the PaaS(Platform as a Service) cloud delivery model that represents a pre-defined, cloud-based platform comprised of a set of already installed IT resources, ready to be used and customized by a cloud consumer. Typically equipped with Software Development Kit (SDK).