

**TECHNICAL DEPARTMENT**

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Lecturer’s signature…………….

**QUESTION 1**

Cloud computing is the process of making use of computing services provided over the internet. This has taken much attraction of people as many individuals are now taking advantage of it to use it in their day to day lives. It can also be referred to as the process of storing and accessing data and programs on remote servers instead of one’s computer’s hard drive.

Cloud computing is gaining much popularity nowadays as it is now being applied in most fields. Cloud services are as the backbone of social applications where the user backups based on the history and chats so that the users can access their social media accounts from anywhere as long as they have the login details. For example, twitter can be used on multiple devices and the cloud will be providing the service for it to happen. Moreover, on online learning platforms, students can access various applications based on the internet and also can be able to attend their classes and they will be combined on one platform where announcements and course materials can be shared. A good example is Google classroom which is sometimes used at Telone Centre for learning sometimes.

Cloud services can be used in medical fields to make sure that the information for clinics and hospitals is stored and always available whereby the applications backup their information on the cloud so that anytime the information is needed it is found. We also have ecommerce systems that promote commerce over the internet whereby people can buy and sell goods online, the users can access the application online and shop whatever they want and all the details about what is available in stock is stored on the cloud. History of purchase is also stored and a good example of this is the Alibaba ecommerce service provider. Moreover, we have cloud storage services which promote the application of cloud computing whereby they allow individuals to save their information and files in an off-site location that can be accessed through public or private internet network connection. Third party cloud providers will be responsible for the data and a good example is the Amazon Web Services which offers such services.

However, not all people are adapting to the use of cloud computing as they do not have much trust on the service providers and are yet to be convinced. Some still favor their traditional way of computing where they use their local disk drives as their storage locations. Also, the services tend to be a bit expensive for smaller firms and that is the reason why is has failed to be applied by many.

**Question 2.**

**Web applications in Practice:**

A web application is an application program that is stored on a remote server and delivered over the internet through a browser interface. Web applications do not need to be downloaded to use them, they only need a browser for them to run on any platform and are now being used much by organizations. Examples of Web applications can be online auction applications like the ABC auctions web application.

Web applications are the better version of desktop applications but generally the same and different in the sense that they can be accessed from anywhere whilst web applications are based on one physical location.

**Web applications**

They can be used to:

* Perform business transactions online through e-commerce web Apps.
* They can be used to send emails.

When making web applications there are things we have to consider to make sure that our product tops in the market and meets the customers’ needs. A web application must be responsive. It must be usable on multiple devices with different frame sizes so that the website can be usable on devices with smaller frames. A web application must react quickly to user commands and give them their output. Mostly, the best practice to implement is to make use of wireframes which help to visualize how our website is going to look like before starting to make it so that we flag issues earlier if they exist. Moreover, great user interfaces should be made use of. A well-made web application should provide a simple and straight to the point interface like the one for twitter. Even layman should understand the design concept and the instructions should be user friendly. Also, we should consider the fact that ensuring security should be the top priority. A web application must help users to supervise their accounts and add security features like the email verification process whenever they try to login to ensure security.

Chatbots must be used for customer interaction. We can make use of chatbots to provide a wonderful customer experience when they use our website and that makes them favor the one with those features so that they get assistance instantly when they need it instead of making use of emails which take long for them. To add on top, web applications must be scalable. Web applications must be able to handle multiple users who might be using the system by not experiencing down time when the traffic increases, it should adapt. It should also ensure great speed and performance which can help users to finish their preferred work when using the system in time.

However, when developers are trying to meet these practices, they sometimes miss the concept of the product and up confusing clients. Especially when designing the User interfaces, people say that too much of something becomes monotonous. Developers might try to make their applications’ speed increase and end up writing code whih is too complex and they miss the demands of the practice which says that they should write clean code and the application will be hard to maintain especially if it is a different person.

**Question 3.**

**Cloud Security in Practice**

As many are adopting to the use of cloud services, their data is on bigger threats of attacks from hackers who might try to access users’ information without their concern therefore, best Cloud security measures must be put in practice:

The Cloud services providers must consider creating a security plan before deploying any resource. This is a good measure other than waiting for an attack to take action. There are some security measures which must be taken to ensure good security. Firstly, auditing features should be included. Each and every user’s actions when using the cloud services should be recorded with full details entailing the time and what exactly was done by a specific user. This information can be used as proof to point out to the respective user who did the specific actions. Also, multifactor authentication should be included whereby the identity of the users should be checked before giving them access to the cloud services and more security features should be added on authentication like the one used to verify if you are a robot or not on most platforms.

Authorization is one of the most important features. The users’ authorities should be checked to access the resources, for example making use of access levels whereby the person’s details are authenticated but then he will be given access levels restricting him/her to do some certain actions so if the access levels allow, then authorization takes place. To add on, brokered cloud storage access also helps the cloud services providers to be in compliance with set regulations and data protection rules and protects users’ information against threats. A good example is twitter, which once faced allegations of failing to comply with data protection acts as it breached some of the rules and this gives a guarantee that every provider does not want to pay fines therefore, they will comply. Moreover, antivirus applications must be installed and made us of. On Installing anti-virus Applications sometimes it won’t be the problem of the cloud services providers but the system from where the clients are accessing the services from and therefore, antiviruses should be there to immune and protect the device from virus as it may cause damage to the information and the bottom line is, both parties should have strong anti-virus applications to avoid such cases of virus attacks from happening. Lastly making use of encryption techniques helps to make sure that the information or data transferred over the cloud services is always encrypted as this helps to bias the information bi-passers as they may fail to get the meaning of the message if they do not have the encryption key. An example of here this is implemented well is on watsapp where, there is end to end encryption when people are communicating.

However upon implementing these practices, we find that the process of implementing some of the practice may attract more costs on top. Like for example, if we make use of firewalls. This gives a disadvantage to smaller firms which cannot afford. Also, authorization and authentication sometimes might not be applicable on open systems which do not require more security options and if the authentication ways become too much, this might even irritate the client for example the are you a robot verification sometimes is not necessary.