I_516 Homework_1

**Part 1.** Using appropriate diagramming software, create DFD context and level-0 diagrams for the Red Cross blood donor app, providing the 4 listed functions. (8 points):

  - Find local blood drives and donation centers quickly and easily.
  - Convenient, easy appointment scheduling and rescheduling.
  - Receive appointment reminders.
  - Keep track of total blood donations.
Part 2. Referring to Hardware_Basics powerpoint (and/or related websites), develop a Flow_Chart describing the Turing Machine processing cycle. Note that a Flow_Chart describing the machine instruction cycle for a VonNeumann machine is included in the powerpoint.
Part 3. Referring to Enterprise Architecture reading assignment, Closing Case 1, page B4.15, answer Questions 1,3,4,5. (1 point each)
Questions
1. Review the five characteristics of infrastructure architecture and rank them in order of their potential impact on the Tribune Co.’s business.
2. What is the disaster recovery cost curve? Where should the Tribune Co. operate on the curve?
3. Define backups and recovery. What are the risks to the Tribune Co.’s business if it fails to implement an adequate backup plan?
4. Why is a scalable and highly available enterprise architecture critical to current operations and future growth?
5. Identify the need for information security at the Tribune Co.
6. How could the Tribune Co. use a classified web service across its different businesses?

1. Reliability
Availability
Performance
Flexibility
Scalability

Reliability ranks the first because the company will suffer the most without a reliable infrastructure architecture.

Availability comes second because the newly built infrastructure architecture should be available to all the employees, partners of the company. Otherwise, there would be no point to spend money to rebuild it if no one can use it.

Performance is also very important after reliability and availability, since only a well-performed infrastructure architecture can satisfy the massive and long-lasting use by all the members of the company.

An infrastructure architecture should have the ability to adapt to different situations, but it is not as important as the Top3.

Scalability is for future development. It being the last one does not mean it is not important, yet present should be the foundation of future.

3.

“A backup is an exact copy of a system’s information. Recovery is the ability to get a system up and running in the event of a system crash or failure and includes restoring the information backup.”

If the company fails to implement an adequate backup plans, it would not be able to recover quickly from a system failure. During the potential system failure, as in the case, the company would delay delivery to readers and cost pages. The longer the recovery takes, the more money will the company
lose. Without an adequate backup plans, the company would also face loss of critical information after a
system failure.

4.

If an enterprise architecture is only designed for the current state of the organization, in other words,
lack scalability, it has to be rebuild when the organization grows. This will cost time, money and also
limit the growth.

If a system is not highly available, in an increasingly globalized world, customers and partners from all
over the world would have a hard time using the system at their different local times. Partners and
customers would probably seek same type of service with high availability provided by other company.

5.

Consider the scale of the Tribune Co., it must have tremendous amount of critical information of its
customers or readers, like address, credit card information and other personal information. It is very
important for the company to prevent hackers from stealing those information.

After the company standardize its business processes, it is even more crucial to secure its information.
Because all the newspaper will be using the same security procedure, the hacker will only need to do the
job once.

**Part_4:**

1. Write a brief pro/con assessment of public sector adoption of cloud computing services. (5
   points).
   Pros:
   a. You can use the data or application on cloud anywhere with Internet.
   b. Your will not lose your data if your computer or thumb drive crashes.
   c. You can share your data with others by sending a link.
   d. The storage space is unlimited.
   Cons:
   a. Once the internet is unavailable at that time, the cloud computing services will out of
      reach neither.
   b. If the server of the cloud computing services crushes, you will lose all the data on the
      cloud.
   c. Hackers can easily access your information if they have your passwords.
   d. You need to pay an amount of money to access this service.

2. Provide a technical description of IUanyWare as an implementation of virtualization. (3 point)
IUanyWare is a virtual service that using single physical server to provide multiple virtualized servers to students, faculties and staffs. Anyone with an IU account can use IUanyWare to stream certain applications or virtual desktop using a web browser or mobile devices. By using IUanyWare, you do not need to install applications on your own computer which will save you both money and time. It can launch applications with only a web browser and internet access. Mac users can use it to use applications that not available for Mac.

With Box, Google Drive or any other IU Cloud Storage service, you can save and have access to files using IUanyWare applications. There is no need to have multiple copies of files or using thumb drive to carry them anymore.

You can also print your files with IUanyWare. It is just like printing from all own computer.

With IUanyWare, you can using IU applications anywhere.

3. What circumstances would be required for machine intelligence to be employed as part of public administration? For example, an information system that issues administrative orders in the field of environmental law, or a system that is responsible for sanctions in relation to speeding or financial fraud. (2 points)

First, machine intelligence must have the ability to issue administrative orders or sanction in relation to illegal activities. It will know when it should or should not issue administrative orders or sanctions. It can detect abnormal situation and report it as set.

Second, to use machine intelligence rather than human employees, machine must be less expensive than human employees. Or the amount of issues or sanctions need to be processes is exceeding the ability of human employees.