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 ad web service across its different businesses?

Answer:

1. Rank the 5 characteristics by potential impacts *(from smallest to biggest)* to the company:
   
   Performance; Flexibility; Availability; Scalability; Reliability

2. Disaster recovery cost curve is a chart combines two aspects (2 curves intersected): First is the cost to the organization of the unavailability of technology and information, second is the cost to the organization of recover from a disaster. The intersection point of the two curves will tell you the optimal disaster recovery plan in terms of time and cost. Tribune Co. should operate this curve at the optimal point to decrease their cost.

3. Backups and recovery can be defined as a strategy to prevent a business entity from losing money and time because of system crash and failures. Back up here can be understand as an extra copy of the business entity’s information. Recovery is the capability of restart the system after a crash and restore the copied information. Tribune Co. is a newspaper company who has a huge amount of data, need to manage many reader/subscribers’ information and different advertising program information under different newspapers. The risk of fail to implement a proper back up plan may cause them lose readers’ information, cause a chaos in launching advertising plans, which is very serious result for a press company------lose the trust from both readers and advertisers.

4. For Tribune Co.’s current operation and future growth, scalability is very important because a newspaper’s growth relies on the subscriber’s amount increase and the ads programs amount, so the ability to react to huge increase demands is very important. Availability is also very important, because a newspaper company requires easily access to readers/users.

5. Tribune Co.’s need of information security is managing user access, especially the protection of user’s password.

6. Tribune Co.’s can use Classified ads web service to different types of newspapers, precisely target the market.
Part 4:

1. Write a brief pro/con assessment of public sector adoption of cloud computing services. (5 points).

   Pros: a. convenient access of information/data
   b. save time and cost
   c. achieve scalability
   d. easy to maintainence

   b. cannot access without internet
   c. reliability issue.

2. Provide a technical description of IUanyWare as an implementation of virtualization. (3 points)

   IUanyWare is a virtualized cloud service, permitted users, here in IU, allow IU students and faculties by input their ID and password, have access to multiple soft wares and apps the school applied from any location on their personal devices, including smartphones, tablets and laptops.

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)

   A non-profit organization need the donors to donate for their programs according to their website, may need machine intelligence to improve their online payment system.