IT243 – System Analysis and Design

Assignment 3 (40 Points)

Note:

- **Submission Deadline: 10ᵗʰ December, 2016 (11:59 pm)**
- The following questions are from Chapters: 7, 8 and 9.
- Copied assignment will be graded zero mark.
- Assignment submitted after due date will not be accepted, it will be considered to be late and will have zero mark.
- Assignments must be submitted through BB only.
- Emailed assignments will NOT be considered.

Part 1

Question 1: MCQ Questions (5 Marks)

1. The major architectural components of any system are the_____.
    a. IT Department
    b. Hardware
    c. Software
    d. A and B
    e. B and C

    Ans: e

2. Software systems can be divided into how many basic functions?
    a. 1
    b. 2
    c. 3
    d. 4
    e. 5

    Ans: d

3. There are _____ primary hardware components of a system.
    a. 1
    b. 2
    c. 3
    d. 4
    e. 5

    Ans: c

4. Server-based architecture is:
   a. When the clients capture keystrokes
   b. The very first architecture system
   c. Outdated and never used
   d. A and B
   e. A, B and C
   Ans: d

5. Client-server architecture holds the client responsible for_____ and server is only responsible for _____.
   a. Application Logic; Presentation Logic
   b. Presentation Logic; Data Access Logic and Data Storage
   c. Data Access Logic and Presentation Logic; Data Storage
   d. Application Logic; Data Storage
   e. Data Storage; Application Logic
   Ans: b

Question 2: (4 Marks)

1. The decision to make, to buy, or to outsource the system is done at the design phase?

TRUE

2. Building the system in-house is cheaper than buying a ready software package?

FALSE

3. Outsourcing firms called Application Software Providers (ASPs) supply software applications and/or software related services through the Internet?

TRUE

4. Outsourcing or Hiring a vendor to develop the system for the company will relieve the company from the responsibility of managing the project?

FALSE

Question 3: (4 Marks)

List the three design strategies and give at least two advantages and two disadvantages for each?

ANSWER:

1. Custom development in-house. When the system to be designed is unique, or when confidentiality and secrecy is very important, and when the organization needs full control and ownership over the system.
   Advantages: A. Allow flexibility. B. Builds in-house technical skills and knowledge. C. Have control over the system.
   Disadvantages: A. Often more cost and more time and risk of failure. B. May not have in-house technical skills and knowledge. C. May delay backlogs of other important systems that need to be built.

2. Purchase a Packaged Software. When the system to be designed is very common and there exist many good software packages that provide a good solution that can be customized. These software packages have been tested and proven and comply with industry standards and requirements.
    Advantages: A. Cost and time saving. B. Tested, and proven and comply with industry standards and requirements.
    Disadvantages: A. Packaged System needs integration with existing company systems. B. Often does not fit perfectly with business needs and may require some customization. C. May require workaround.

3. Outsource development to third party. Hiring an external vendor, a developer, or service provider to build the system. It is very important to manage the relationship with the vendor and have a contract and service agreement.
    Advantages: A. The vendor will have the specialized and customized solution. B. Cost and Time will be less than in-house development.
    Disadvantages: A. Losing confidential or secret information. B. Losing the opportunity to develop in-house technical skills and knowledge. C. Losing control over the system.

Question 4: (4 Marks)

Name the five steps in user interface design? Why is iteration so important?

Answer: The five steps in user interface design are

- use scenario development;
- interface structure design;
- interface standards design;
- interface design prototyping;
- interface evaluation.

To get a user interface that meets the needs of the system (nonfunctional requirements), captures the data (use cases and DFDs), is consistent across the system and the company, and that users will use (organizational feasibility 'if we build it will they come') will require going back and fixing, modifying, changing the user interface design to meet all of those specifications.

Question 5: (4 Marks)

Briefly explain Storyboard, HTML Prototype and Language Prototype as Interface design Prototyping. Which prototyping technique(s) will work best if analyst want to be closer to the final version of interface desing? [3+2 = 5 Marks]

Answer:

- *Storyboard* is probably the cheapest and fastest. You draw interfaces on paper (or flip-charts) to illustrate the concepts of how the interface will work.
- *HTML prototyping* uses web design for developing interfaces. Using common web development tools, the analyst prepares what the screens will look like. It takes more time (and thus more money for salaries) – but the finished idea looks closer to what users might expect.
- *Language prototyping* uses GUI languages (like Visual Basic) to create prototypes and screens for the users to interact with. In some respects they are all but coded examples, the screens have all the form fields, but no processing occurs. It will probably be the most expensive, but closest to the final product.

If analysts want to be closer to the final version, then HTML or Language Prototyping will work best.

Question 6: (4 Marks)

As a system analyst, you are required to redesign the interface for the ATM at your local bank. Develop two use scenarios for *Authentication* and *Withdrawing Cash from ATM* activity.

Answer:

Students' answers will vary depending upon the details. Examples of use scenarios are as follows:

Use Scenario: Authentication

1. User inserts card into card reader
2. Upon prompt, user taps numeric keys for PIN input
3. User is granted access to account(s), or user is denied access.

Use Scenario: Withdrawing Cash from ATM

1. User is granted access to account
2. User will choose withdraw from a menu of available transaction types
3. User will choose account from which to withdraw
4. User will key in monetary amount to withdraw
5. User will remove card, money, and receipt

Part 2

[2 Questions – Each question carries 10 marks]

Question 1: (7 Marks)

Case study:

Ahmad is an analyst. The human resources department is very unhappy with their payroll package. They want the information systems department to write them a new package as they think they have unique needs. What should Ahmad do?

Answer:

Payroll is a very common application and there are many good payroll programs on the market. Ahmad really needs to understand what the problems with the current package are. Is it old (i.e. only runs on a mainframe system)? What functions does HR want to do that the package does not support? In that payroll information must be reported to state and federal officials for tax reasons, it probably don't not make sense to write a complete package but to find one that meets HR needs.
After a detailed investigation, it may be best to create either an RPI or RPQ to get additional information and bids from potential vendors.

Question 2: (8 Marks)

Design an Interface Structure Design for the ATM at your local bank that shows how a user would navigate among the screens.

Answer:

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