



Daffodil International University
Department of Computer Science and Engineering

Faculty of Science & Information Technology

Midterm Examination, Fall 2020 @ DIU Blended Learning Center

Course Code: CSE321 (Day), Course Title: System Analysis and Design

Level: 3 Term: 2 Section: All

Modality: Open Book Exam

Date: Tuesday 3 November, 2020 Time: 09:00-01:00pm

Four hours (4:00) to support online open/case study based assessment Marks: 25

Directions:

- **Students need to go through the CASE STUDY shown in this exam paper.**
- **Analyze and answer specific section based on your own thinking and work.**
- **Do not share as this will be treated as plagiarism by Blended Learning Center.**

Answer all the following questions

You must answer parts of a question sequentially. The figure in square brace at the right side of a question indicates the marks allocated to the questions.

1. Education has changed a lot over the last couple of decades. Institutional based education is still present. However, there is more focus than ever on learning at home, continuing one's education, and using the Internet for the glorious information tool that it is. Childhood is particularly important for learning. We obviously can't do all the work as every child is different.

Nowadays Children (Age: 5-9) are very addicted to smartphones. It can be hard to keep kids occupied sometimes, especially when school is out. That's why you typically reach for tablets, phones, or other electronic devices for your kids to play with when they're bored. But it can be difficult to figure out which apps are worth learning for kids. They are always busy with smartphones by playing games and watching videos. So a renowned company named "WeTechCare" decided to make such an app for children where they are able to learn by playing.

Suppose you are appointed as a system analyst for a "WeTechCare" company. However, they are hoping that these learning apps for kids can help! [3]

As we know that System Analysis and Life Cycle has 9 steps.

- a) Briefly explain which step of System Analysis and Life cycle is more challenging for building up this learning app for Children? [2]
- b) To develop this app needed for long range planning and directions. How can you explain your strategic plan with your CEO of "WeCareTech".

2. In this new era of technology, children are more exposed to the advanced technology even at an early age with smartphones, tablets and e-readers being some dominant choices as observed by many educators and parents. The experiences with the latest technology can surely pave the way for extraordinary learning opportunities. Every time a new mode of technology is invented, say from television to computers to mobile devices, it always presents some new potential as an educational tool for the young children. Nowadays there are more platforms for the educational media content than there were ever before. With children spending so many hours a day with these technologies, there are certain concerns which parents have regarding technology use for children.
- a) Prepared a survey question and shared it with the parents of elementary school age children (aged 6 to 10 years) in Bangladesh Context. This survey question is an attempt to investigate the attitude of parents towards the use of mobile technology for children and specifically in the context of education by using educational or learning apps for children. This survey aspires to provide guidance in order to overcome the concerns of parents and to increase the accessibility of mobile technology in education for young children. [3]
 - b) Survey is a good option. Besides, which Information Gathering Tools do you think to use for best practice to build up this learning app? [2]
3. Readymade Garments (RMG) are the finished textile product from clothing factories is one of the fastest-growing sectors in the Bangladeshi economy, with a growth rate of 55% from 2002 to 2012. In the last seven years, Bangladesh's garment industry has increased its annual revenue from \$19 billion to \$34 billion—a 79 percent raise. This makes the country the second-largest exporter of garments in the world, with the sector accounting for 80 percent of Bangladesh's total export earnings. Most of the Garments in our country use Progressive Bundle System (PBS) for the production as here labors of all levels i.e. unskilled, skilled, semi-skilled are involved. Nowadays they are using information systems to make everything easy and convenient. All users must register into the system for login. Foreign buyers can give orders and management can receive it through this system. After order confirmation, officials check inventory for raw material. However, 15-20% of raw materials and 80-85% of dyeing chemicals and accessories of this sector comes from China. So, management prepares an order for all needed materials. Then the work is distributed to employees. End of the month, the salary of each employee is produced according to this list. There are some testers (QC) who check the products according to order. Once qualified, management delivers the products. [5]
- Now, your task will be to draw a context-level and Level 1 DFD from the above scenario.
4. "H&M" is a fashion wares business company in Bangladesh. They have 50 showrooms in Bangladesh and every showroom has several sales persons. They purchase finished dresses of men and women of all ages from different suppliers and sale those items to the registered or non-registered customers. All Purchases are controlled from the head office and distributes items to all showrooms based on their previous sales records. The system also keeps track of the numbers of sales made by each salesperson. The management can view these statistics of purchase, sales process and employee contribution. They have a discount policy for the registered customers. They have three types of customer: Platinum, Golden and General. If a Platinum customer purchases items by less than 1000 taka then they will get 5 % discount and purchase items by more than or equal 1000 taka they will get 7 % discount. If a Golden customer purchases items by less than 1000 taka they will get 4 % discount and purchase items by more than or equal 1000 taka they will get 6 % discount. General customers will always get a 2 % discount whatever they purchase. At the end of each financial year, the management produces an annual report of each employee (Sales persons, managers) and provides them some bonus based on their performance. In addition, they produce different documents (Tax File, Income expense statements etc.) to have a very good record to the government in order to expand their business in future. [5]
- Draw a decision tree, decision table and structured English language for the above policy.

5. **“Ezan Hospital”** is going to open within a very short time due to treating Corona patients. The CEO of this hospital is very kind hearted and tries to help her best to every employee and patient. But her manager tried to please her by showing extra profit every year. But this manager suggested the CEO of the hospital develop a new system by which she can observe every movement of employees and patients. They have decided to develop this system by **“Z Generation Research and Development Team”**. For this reason, the CEO of ABC Hospital invited the developer team along with their CEO in their HQ to collect their initial requirements. In this meeting both concluded that they will work in an agile method. After this meeting, the developer team started their development and faced some difficulties like changing requirements frequently, hiding information, adding requirements which might be causal of security issues etc. So, the developer team paid a visit in the Ezan Hospital to collect onsite requirements from their employees and patients. Employees are found to be very nervous of sharing their requirements because of their new policies. Patients are not cleared enough because maximum patients are suffering from extreme breathing problems. But there is a shortage of ventilators in this hospital. Maximum patients are treated by nurses and intern doctors. On the other hand, the manager of Ezan Hospital tried to cheat the developer team by giving them wrong information. Moreover, he tried to get the system before the expected delivery date.

[5]

Find out the deficiencies? Which deficiency do you want to emphasize most? What are the reasons to emphasize the specific deficiency? How can this deficiency be solved?