Department of Computer Science & Engineering University of Asia Pacific (UAP)

Final Examination

Fall 2020

3rd Year 1s Semester

Course Code: CSE 305 Course Title: System Analysis and Design Credits: 3

Full Marks: 120 Duration: 2 Hour

Instructions:

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- 1. There are **Four (4)** Questions. Answer all of them. All questions are of equal value. Part marks are shown in the margins.
- 2. Non-programmable calculators are allowed.
- a. "Mr. X wants to build a user support system for his company. So he collects all necessary data and user requirements for the system. Then he formed three different teams to find out if the proposed system is safe and sound technically and economically and strategically aligned with the business. After a few weeks these teams responded positively and Mr. X recruited an experienced manager Mr. Y for overall project control and direction."
 - All these steps indicate a particular phase of SDLC. Which one is it? Briefly describe its' steps.
 - b. Though Mr. X preferred Waterfall model for the user support system development,
 Mr. Y said as the system is completely user based it would be wise to follow any
 RAD technique. Do you agree with Mr. Y? Justify your answer with proper
 explanation.
- a. Draw a use case diagram for a library management system. Assume four actors:
 - 1...

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- General Member: does not have access to the original copies of books
- Librarian: tasks like selecting, developing, cataloguing and classifying *library* resources, answering readers' enquiries, using *library* systems and specialist computer applications, management of staff, including recruitment, training and/or supervisory *duties* etc.
- Vendor: supplies books
- Elite Member: has access to the original copies of books.
- b. Discuss the 'Extend' and 'Include' relationships that are used in use case diagrams with proper examples 10

or

a. The software solution company 'ABCD' has got the tender for a complete hospital management system for a famous hospital. Tough they were supposed to establish the complete system by April 2018, project manager Mr. Z has recently observed that the project is running behind the proposed schedule. So he decides to recruit ten more staffs, who would work parallel with the current staffs. If you think he has made the right decision, then justify your answer. Otherwise propose a better solution so that the project can run on schedule.

^{*} Total Marks of Final Examination: 150 (Written: 120 + Viva: 30)

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- 3. a. Draw the corresponding class diagram for the system described in question 3 (b). And discuss the importance about coupling and cohesion among classes or Process.
 - b. The figure below shows the level 1 DFD, which is the decomposition (i.e. break down) of the securities trading platform process from level 0 DFD.
 - i) Explain in which phase and how DFD help you to develop a system.
 - ii) Draw level 0 DFD from this Level 1 DFD.
 - iii) Also draw level 2 DFD for this example by decomposing process 5(place order).

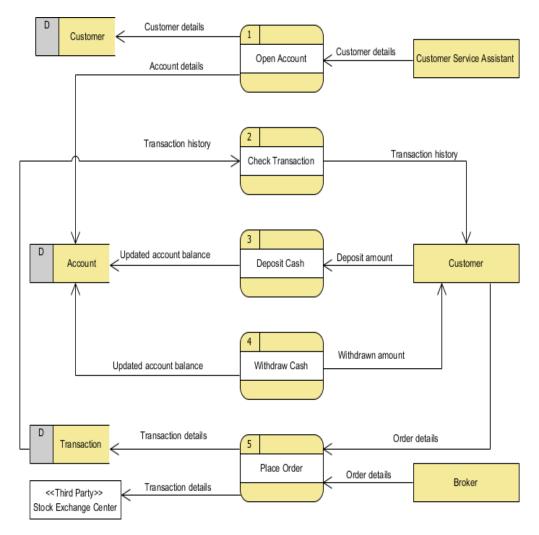


Fig: level 1 DFD.

4. a. Following is the activity list for a construction company's project. Find ES, EF, LS, 20 LF and critical path of the project.

[NOTE: ES= Earliest start time, EF= Earliest Finish time, LS= Latest start time and LF= Latest finish time]

Activity	Immediate Predecessors	Estimated Duration
A	None	I+5 weeks
В	None	I+10 weeks
C	A, B	I+20 weeks
D	С	I+5 weeks
E	С	I+10 weeks
F	Е	I+5 weeks
G	D	I+15 weeks
Н	Е	I+7 weeks
Where I = last digit of your ID Number.		

- b. How will the project schedule be affected if

 A is delayed by 2 weeks
 C is delayed by 1 week

 Explain your answer.

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