

National University of Computer and Emerging Sciences, Lahore Campus



Course: Software Engineering
Program: BS (CS)
Duration: 60 Minutes (1 Hour)
Paper Date: 02-Oct-18
Section: All
Exam: Sessional I

Course Code: CS303
Semester: Fall 2018
Total Marks: 45
Weight: 15%
Page(s): 4

Instruction/Notes:

1. Attempt all questions on the question paper. Neither use nor submit any extra sheet.
2. You are allowed to use a single-sided, hand-written, A-4 size help sheet.

Name: _____

Roll Number: _____

Section _____

Question 1 (Max. Marks = 15 = 5 x 3)

List the process model that you think will be most appropriate for the following situations. Also, list your reason(s) for choosing a particular model. If you just list the process model without mentioning the reason(s), you will not be awarded any marks.

- a. Assume that you work in a reputable software house of Lahore. A school requires a Laboratory Management System (LMS) and has contacted your company for assistance. Your company has 50 software engineers, but 40 of them are busy working on other projects. The project will be quite innovative and needs smart programmers. A school representative is willing to stay at the software house premises. The annual evaluation of the school is due soon, in which computerization initiatives will be appreciated.

Process Model:

Reason(s):

XP (Extreme Programming)
- Small team
- Innovative Product - Client always present

- b. Your team is starting work on a new project, but all the requirements are not clear right now. The project is a long duration project and quality of the project cannot be compromised as it may incur huge financial losses. The client requires quarterly releases and he will be providing feedback on each release.

Process Model:

Reason(s):

Spiral
① Long term project
② Req's not clear
③ Risk Management

- c. An existing software needs to be developed in a newer and better technology and your company has been assigned this task. The software has been running successfully for a few years and does not require any major changes in its functionalities in the newer technology i.e. same functions that are available in the current version will also exist in the updated version.

Process Model:

Reason(s):

Waterfall
Reqs clearly defined and will not change

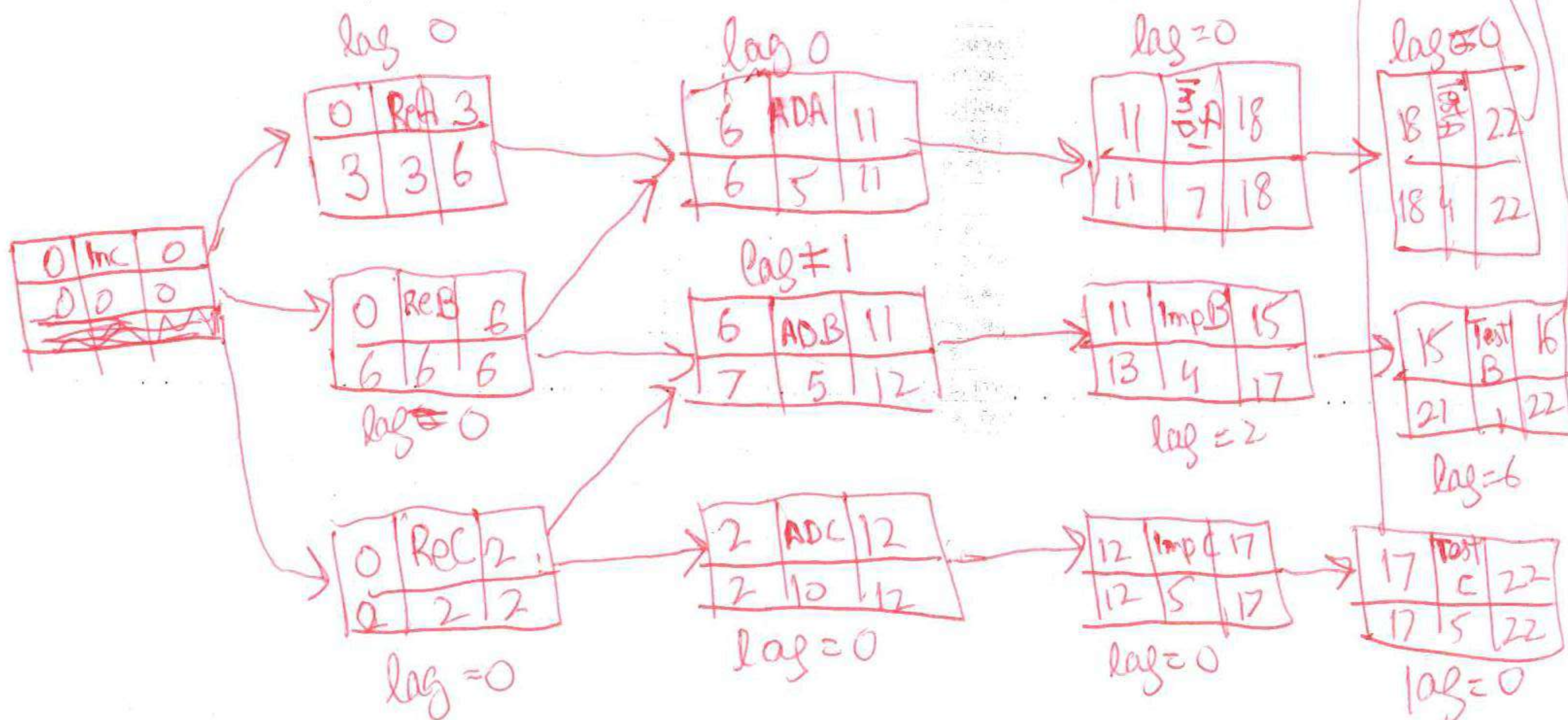
Question 2 (Max. Marks = 15)

The following table provides a high-level work breakdown structure (WBS) of project FASTFinder – an AI-based search engine. For each task, it contains information about the estimated duration (in weeks) and predecessor(s). Use this information to draw a task network (including the Start and Finish tasks). Then, use the Critical Path Method (CPM) on this task network (tasks map to nodes) to determine the minimum duration of FASTFinder, the critical path(s), the critical tasks, and the lag (a.k.a. slack) of each task. Show all of your working clearly.

Important Note: There is no partial credit in this question. Therefore, check your answers carefully.

Task/Node	Estimated Duration (Weeks)	Predecessor(s)
Inception/Start	0	
RE A	3	Inception/Start
RE B	6	Inception/Start
RE C	2	Inception/Start
A&D A	5	RE A, RE B
A&D B	5	RE B, RE C
A&D C	10	RE C
Imp A	7	A&D A
Imp B	4	A&D A, A&D B
Imp C	5	A&D B, A&D C
Test A	4	Imp A, Imp B
Test B	1	Imp B
Test C	5	Imp B, Imp C
Delivery/Finish	0	Test A, Test B, Test C

-3 for no lag
-2 for no missing each critical path
other mistakes marking depends

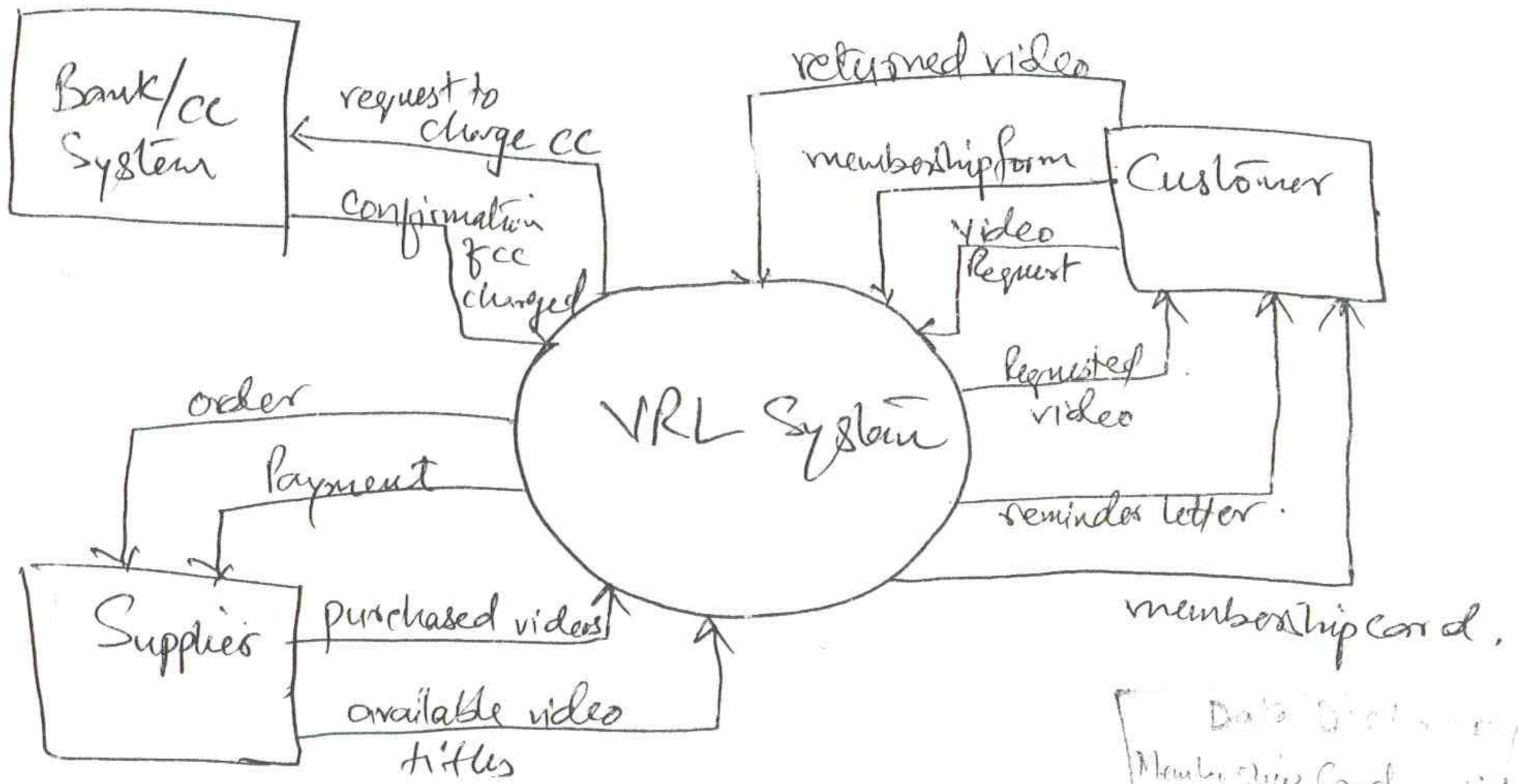


Critical paths:

① S — RE B — A&D A — Imp A — Test A — F

② RE C — A&D C — Imp C — Test C — F

Level 0



Data Dictionary

- Membership Card - id, Name
- Membership Form - Personal details, cc details
- Video Request - video title, quantity, category

Level 1

