Software Project Management

INF3708

Assignment 04: Due date 28 September 2017 Compulsory

ASSIGNMENT 04 - SEMESTER 2

ASSIGNMENT 04	
Due date	28 September 2017
Study material	Hughes & Cotterell: Chapters 8 and 9
Total marks	70 marks
If your assignment is late, please DO NOT PHONE OR E-MAIL asking for an extension but include a note in your assignment stating the reason for the late submission and we will decide whether or not it will be marked.	

Instructions:

1. **Download and complete** this assignment and submit online in a .pdf format by performing the calculations.

2. The following unique number has to be assigned to the assignment:

UNIQUE NUMBER:
687991

3. Show all your working (calculations).

4. This assignment consists of 3 questions.

Questions on Chapter 8 and 9

QUESTION 1 **[14]**

A resource is any item or person required for the execution of the project. As a project manager, explain to your team the seven categories a project resource can fall into.

Answer

See section 8.2 page 194 for solution

Labour: are staff of the development project team for example, project manager, system analysts and software developers. Also important are quality assurance team, support staff and any employees of the client organisation who undertake or participate in specific activity.

Equipment: this include workstations and other computing and office equipment. Other equipment include desks and chairs.

Materials: are consumed items. In most software project material are of little consequence but can be important for some software project.

Space: this include office space for the staff of the organisation

Service: Some project requires procurement of special services – development of wide area distributed system.

Time: time as a resource is often offset against other primary resources – project timescales can sometimes be reduced by increasing other resources and will almost certainly be extended if they are unexpectedly reduced.

Money: money is a secondary resource. It is used to buy other resource and will be consumed as other resources are used. Money is available at a cost as interest are charged to borrow money.

QUESTION 2 **[15]**

Calculating the cost of the Right Solution software development project, should be straightforward, because the organization has standard cost figures for their staff and

other resources. The project is scheduled to be finished in four months (120 days including installation and training of staff) since it is a large project. The staff cost for the Right Solution Project is shown in table 1 below.

Peter, who is the main project manager, spends 17 extra days on the project, due to planning and other post project reviews. “You” (assign any name to yourself) are the developing project manager assisting Peter in the Right Solution project and you only spent 5 extra days. The project overhead costs, amount to R500 each day. Emma is scheduled to work daily for the duration of the project. Juan, Bester and Steve are training and support specialists, so their services would only be needed in the fourth month (the last 30 days). The remaining project team members, John (System Design), Ana (Programmer) and Khumo (System tester), will work for three months (90 days), after the first month (30 days) of requirement analysis done by Smith.

Answer

The table below shows the calculation of the total cost of the Right Solution software development project we need to refer to the information for each individual.

Staff Member	Daily Cost	Days Required	Cost	
Peter	R1000	120+17=137	R137,000	2 marks
“You”	R450	120+5=125	R56,250	2 marks
John	R500	90	R45,000	1 marks
Ana	R550	90	R49,500	1 marks
Khumo	R400	90	R36,000	1 marks
Emma	R550	120	R66,000	1 marks
Johan(Juan)	R300	30	R9000	1 marks
Bester	R200	30	R6000	1 mark
Steve	R200	30	R6000	1 mark
Smith	R400	30	R12,000	1 marks
Overhead Cost	R500	120	R60,000	1 marks
Total			R482750	2 marks

***Note:* The overhead cost per day is very important to include in the calculation of the cost of the entire project. The overhead cost is calculated for the number of days for which the project is scheduled and not for additional days that some staff members may work. This cost can easily be overlooked with great influence on the final cost. In this scenario the overhead cost was only R 120, 000.

QUESTION 3 [15]

Delight Company Limited (DCL) has employed you as a project manager to oversee the development of new software project for their Mail Server installations. After week 1 of the project, you find it necessary to determine the project performance using the earned value management (EVM) technique. Before carrying out the measurements and all the necessary calculations it comes to your attention that only 50% of the expected work in week 1 was completed. The planned value of the project (PV) is R 12,000. Assume an actual cost completion of R16 000

Consider the earned value for ***one activity*** after one week. Define and find the following measurements of the project. Show all your calculations.

3.1 Earned value (EV) (3)

3.2 Cost variance (CV) (2)

3.3 Schedule Variance (SV) (2)

3.4 Cost Performance index (CPI) (2)

3.5 Schedule Performance Index (SPI) (2)

3.6 Indicate what the answers you calculated for 3.2 – 3.5 means. (4)

Answer

3.1 Earned value (EV)

EV= PV to date x Rate of performance
Rate of performance is 50% = 50/100 = 0.5
EV= 0.5 x 12,000 = 6,000

3.2 Cost variance (CV)

CV= EV – AC = 6000- 16,000 = -10,000

3.3 Schedule Variance (SV)

SV = EV –PV = 6,000 – 12,000 = -6,000

Schedule variance (SV) indicates the degree to which the value of complete work differs from the planned. The negative SV means that the Delight Company Limited project is behind the schedule.

3.4 Cost Performance index (CPI)

CPI = EV/AC = 6000/16,000 = 0.375

3.5 Schedule Performance Index (SPI)

SPI = EV/PV = 6,000/ 12,000 = 0.5

3.6 Indicate what the answers you calculated for 3.2 – 3.5 means.

Negative CV – Means that the project is over cost
Negative SV – Means that the project is behind schedule

CPI and SPI ratios can be thought of as a "value-for-money"

The CPI value of 0.375 (a value less than one) indicates that Delight Company Limited (DCL) work is not being completed better than planned.

The SPI value of 0.50 (a value less than one) indicates that Delight Company Limited (DCL) work is not being completed better than planned.

QUESTION 4 **[25 Marks]**

4.1 List and explain the various visualization method **(9)**

Answer:

The Gantt chart: this chart is one of the simplest and oldest techniques for tracting project progress. It is essentially an activity bar chart indicating scheduled activity dates and durations, frequenly augmented with activity floats.

is used to indicate scheduled activity dates and durations frequently associated with activity floats. The Gantt chart can visually indicate if a project is ahead or behind schedule. One disadvantage is that this chart is very difficult to keep up to date.

The Slip chart: The slip chart is a more striking visual indication of the progressing of activities than the Gantt chart. The slip chart has a slip line that indicates the variation from the plan. The more the slip line bends the greater the variation. The project

manager can then decide to reschedule some activities if the chart has a very jagged slip line.

Tasks/activities/work element	Work packages	Duration (weeks)
H	Basic design	10
I	Hardware design A	8
J	Hardware design B	6
K	Drawings B	4
L	Software specification	2
M	Parts purchase A	4
N	Parts purchase B	4
O	Drawings A	5
P	Installation drawings	5

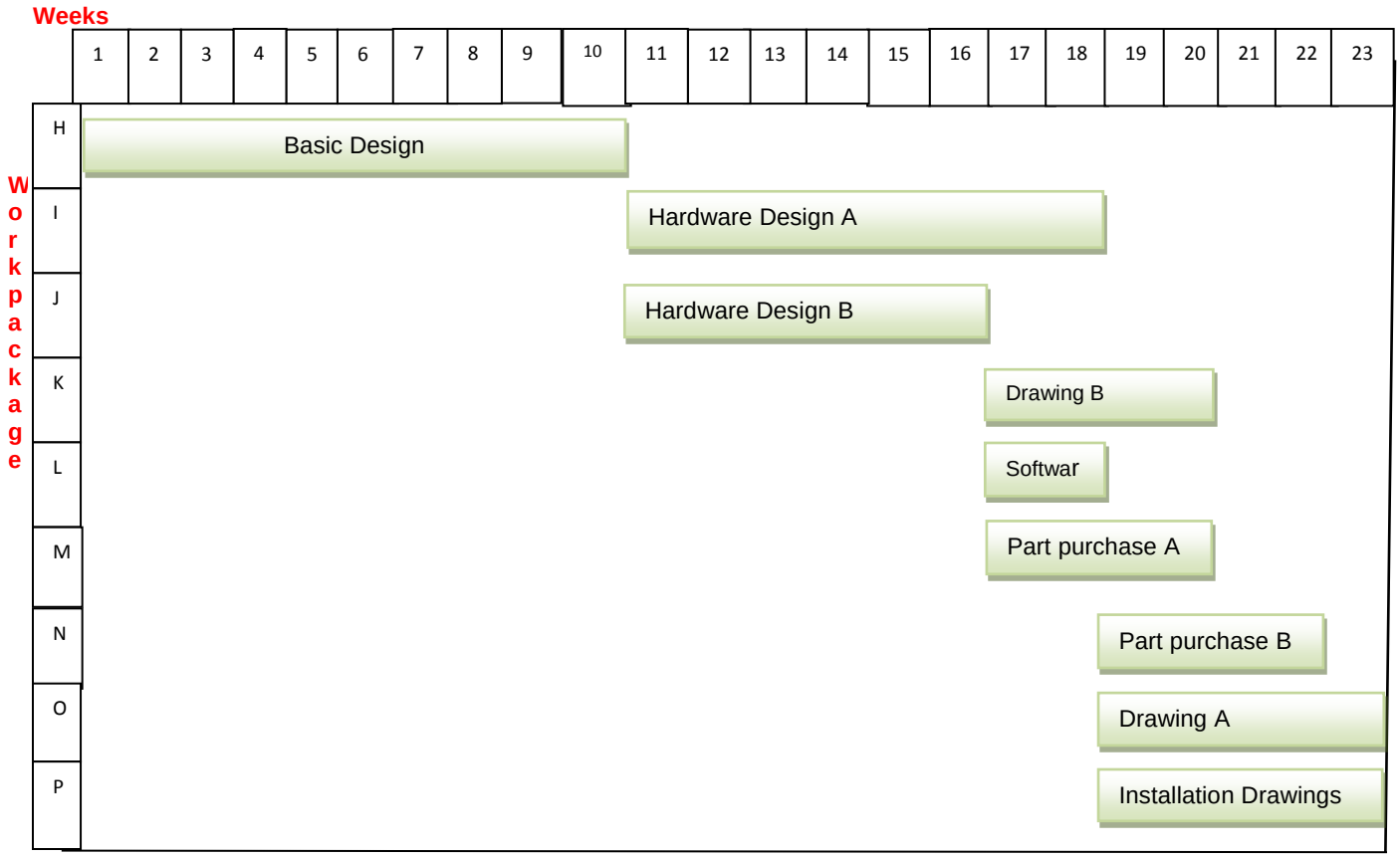
The timeline: The timeline chart illustrates the way in which targets have changed through-out the duration of a project. Planned time is shown along the horizontal axis and actual time along the vertical axis. In the ideal situation (no delays), the Planned Time and the Actual Time will correspond on the diagonal.

4.2 A Work Breakdown Structure (WBS) analysis for LOGON project (of question 3) in which you are a project manager for was preformed and the work packages indicated on table 2 was identified. (16)

Use the sequencing logic depicted in table 2 to create the Gantt chart for the LOGON project. Indicate clearly the durations of each activity.

NB: During the WBS, it was determined that before work elements **I** and **J** could be started, element **H** had to be completed; that before work elements **K, L**, and **M** could be started, element J had to be completed; and that before elements **N, O**, and **P** could begin, element **I** had to be completed.

Answer



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