Software Project Management

INF3708

Assignment 04: Due date 11 April 2016 Compulsory

ASSIGNMENT 04 - SEMESTER 1

ASSIGNMENT 04	
Due date	11 April 2016
Study material	Hughes & Cotterell: Chapters 8 and 9
Total marks	40 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:
862900

3. Show all your working (calculations).

4. This assignment consists of 3 questions.

Questions on Chapter 8 – Resource allocation

QUESTION 1 **[15]**

The staff cost of the Phumzani Project is shown below. Nomsa is the project leader of the Phumzani project and will spend 10 extra days on the project to plan and carry out the post project review. The project is scheduled to be finished in 26 days. An amount of R350 per day is charged by the Phumzani team for overhead costs. Busi will work on the project every day, Samuel and Amy will work only half of the days and Juan will work only 10 days

Staff member	Daily cost
Nomsa	R400
Samuel	R200
Juan	R300
Busi	R400
Amy	R300

Table for Question 2

1.1 Calculate the total cost for the Phumzani project. (14)

Answer

To calculate the total cost of the Phumzani project we need to refer to the information for each individual. For Samuel and Amy who works only half of the total number of day, we will use 13 as the value in our calculations. Cost = daily cost * days required.

Staff member	Daily cos1	Days required	Cost	
Nomsa	R400	26+10=36	R 14,400	2 marks
Samuel	R200	26 / 2 =13	R 2,600	2 marks
Juan	R300	10	R 3,000	2 marks
Busi	R400	26	R 10,400	2 marks
Amy	R300	26 / 2 =13	R 3,900	2 marks
Overhead costs*	R350	26	R 9,100	2 marks
Total			R 43,400	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 9100 but in bigger projects this cost can grow exponentially to have a staggering influence on the total cost of the project.

1.2 Identify 1 other type of cost that could also be relevant, and that were not taken into account in Question 1.1. (1)

Answer
(This question will be judged on merit)
Other possible types of costs to be considered:

- Usage charges (textbook section 8.9- page 206 mentions 3 types of costs of which Staffing costs and overheads are discussed already in the problem, leaving usage charges to be included.)
- Training costs
- Equipment costs- any additional equipment that has to be bought for the project.
- Risk costs -for example costs involved if for some reason the project cannot be completed according to the planned time.
- Additional cost could be involved if additional staff has to be appointed to be able to meet the target date. If this is not done costs of delayed delivery might be involved. (refer to section 8.6)
- Team building costs.
- Charge for computer time
- Rental of premises
- Office equipment (phones, faxes)
- Stationary
- Services (Telkom)

Any of the above (1 Mark)

QUESTION 2 **[10]**

2.1 Explain in detail what a project manager can do when a project will not meet the target date. What should he NOT do? (5)

Answer:

Section 9.8 Page 229-232

- Renegotiate due date **/** cost with client
- Revisit requirements (MOSCOW)
- Ensure effective resources are on critical path (re-allocation of resources)
- Schedule overtime
- Re-look tasks start dates to maybe start sooner

- Shorten critical path
  Three marks for any three (DOs) points explained

Do Not

- add new resources
- compensate on quality
- skip steps in the SDLC
- give in on testing (quality)
- Be careful to shorten critical path and then create another critical path
  Two marks for any two (DON'Ts) points explained

2.2 Discuss the categories of cost. (5)

- *Staff costs*: These include staff salaries as well as other direct costs of employment such as the employer's contribution to social security funds, pension scheme contributions, holiday pay and sickness benefit. These costs are commonly charged to projects at hourly rates based only weekly work records completed by staff. It should be noted that contract staff are usually charged by the week or month, even when they are idle.
- *Overheads*: Overheads represent expenditure that an organisation incurs, which cannot be directly related to individual projects or jobs, including space rental, interest charges and the costs of service departments (e.g. HR). Overhead costs can be recovered by making a fixed charge on development departments (usually appears as a weekly or monthly charge for a project), or by an additional percentage charge on direct staff employment costs. These additional charges or on-costs can easily equal or exceed the direct employment costs.
- *Usage charges*: In some organisations, projects are charged directly for use of resources such as computer time (rather than their cost being recovered as an overhead). This will normally be on an 'as used' basis.

Questions on Chapter 9 – Monitoring and control

QUESTION 3 **[15]**

Sipho is the project leader and his duty is to make sure the project is finished in time. The other members and their job specifics are:

Nomsa – Analyse existing systems (2 weeks)

Bennie – Obtain user requirements (3 weeks

Maggie – Plan office layout (3½ weeks)

Alice – Finalise office layout (4 weeks)

Arthur – Issue tender (4½ weeks)

(Note: the weeks in brackets denote the scheduled time within which each person's part of the project is to be completed. The longest time, i.e. 4½ weeks is the scheduled time for the completion of the whole project).

After the first week Nomsa is delayed by a week, but she finished by the end of the 3rd week. By the end of the 4th week Bennie has finished but Maggie was delayed for a week. This was the last delay in the project.

3.1 Name and describe three ways that a manager can use to visualise this data. Present this data visually in all three ways. Accept that each activity, allocated to a specific person, starts at the same time. (15)

Discussion of Question

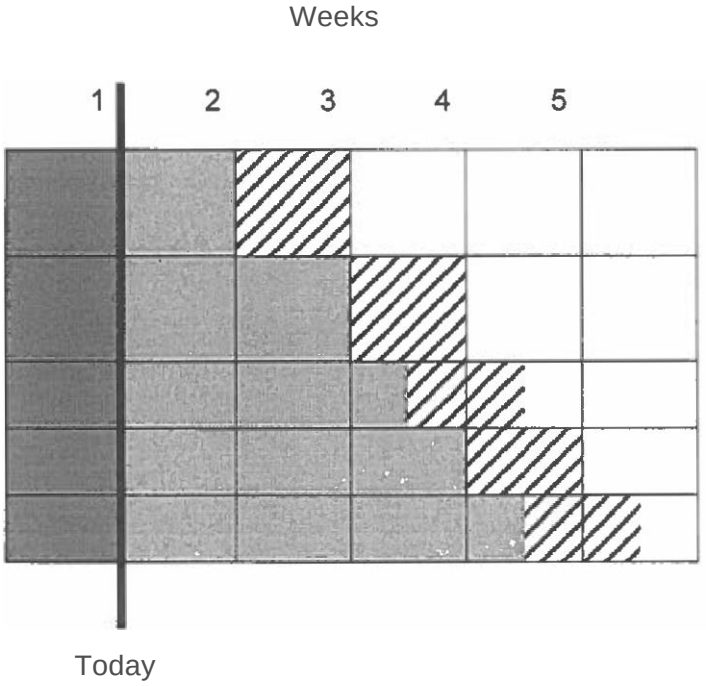
1. The Gantt chart
(5)

This chart 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 Gantt is given in two diagrams, one for the project after the first week, the second for after week4.

After week 1:

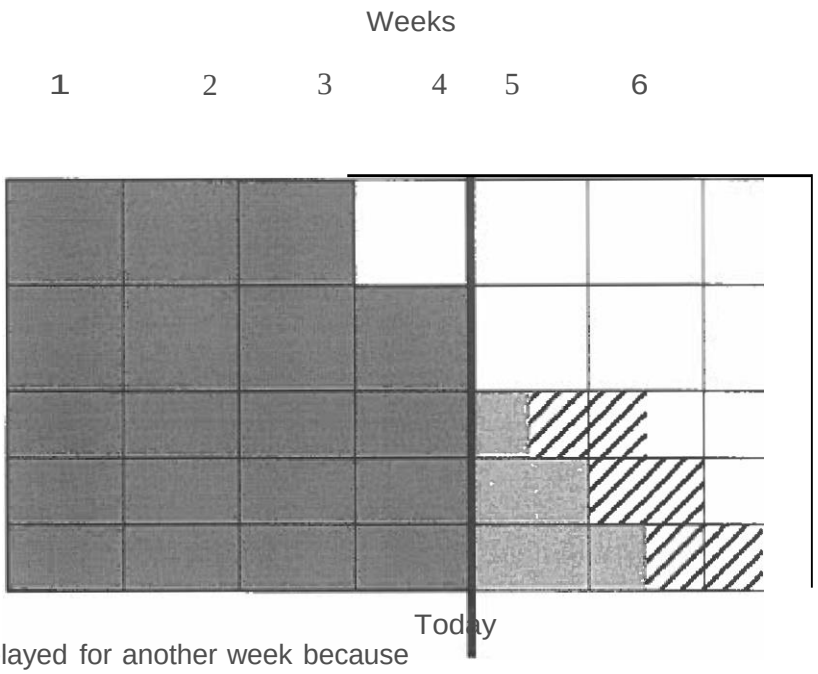
Nomsa	Analyse existing systems
Bennie	Obtain user requirements
Maggie	Plan office layout
Alice	Finalise office layout
Arthur	Issue tender



Note that after the first delay, all the other tasks are also delayed by one week because Nomsa was delayed by one week.

After week 4:

Nomsa	Analyse existing systems
Bennie	Obtain user requirements
Maggie	Plan office layout
Alice	Finalise office layout
Arthur	Issue tender



After week 4, the last 3 tasks were all delayed for another week because Maggie was delayed.

Legend:

completed

scheduled

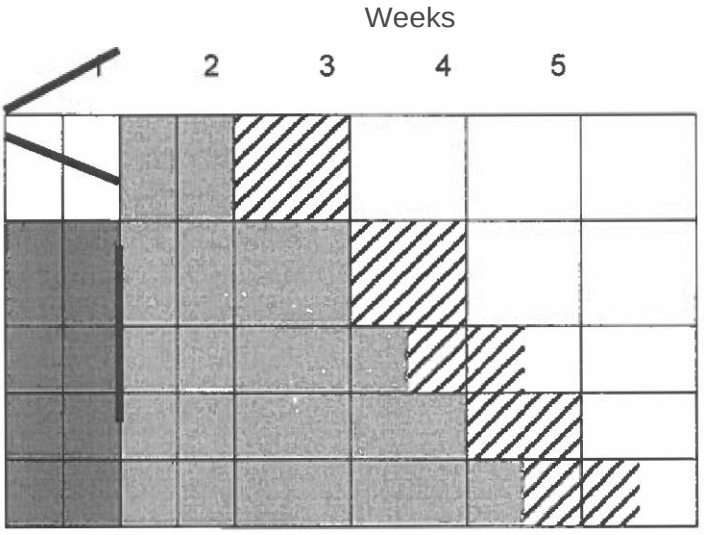
delayed

2. The slip chart **(5)**

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.

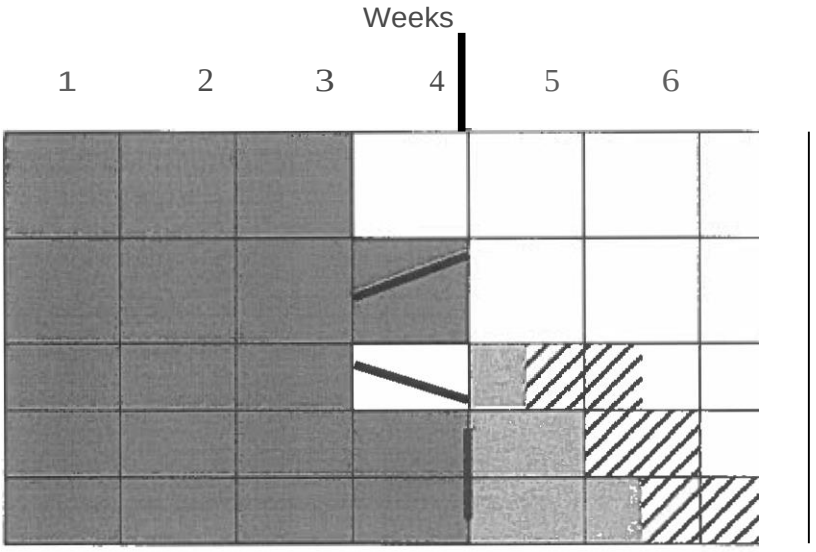
After week 1:

Nomsa	Analyse existing systems
Bennie	Obtain user requirements
Maggie	Plan office layout
Alice	Finalise office layout
Arthur	Issue tender



After week 4:

Nomsa	Analyse existing systems
Bennie	Obtain user requirements
Maggie	Plan office layout
Alice	Finalise office layout
Arthur	Issue tender



After week 4, Maggie is delayed for another week, delaying Alice and Arthur as well for another week.

Please note, this diagram is not the same as in the textbook on page 220, it is simpler as we do not have the actual start dates of the activities and we do not know if it is ahead of schedule or not. We only know the two activities that were delayed in week 1 and 4 respectively, causing the other activities to be delayed in a ripple effect.

3. Timeline chart indicating the delayed finishing date of the project. (5)

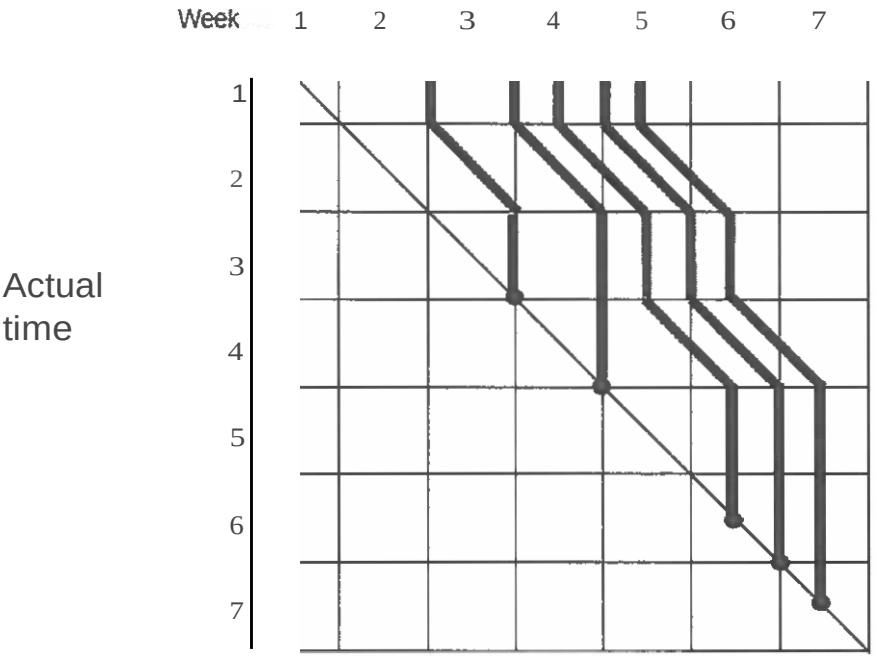


Diagram Timeline chart

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.

When one part of a project is delayed for a number of days, the completion time for the whole project is delayed with the same number of days. On a timeline chart a delay in one part of the project has an effect on all the other uncompleted parts of the project in that each of the uncompleted parts shows the same delay. Keep in mind that a time line chart shows planned and actual times of completion of parts of a project as well as of the whole project and not dependencies of parts of a project on each other. On a timeline chart each part of a project's time is measured from the beginning of the project.

In the chart above the • indicates the final completion of each person's activity. Remember, that the diagonal line shows the completion of each activity. Nomsa and Bennie had one delay after the second week and therefore this delay is indicated with a diagonal line across week 2 with the amount of days delayed (= 1 week). Also remember that the delay of one activity is

reflected on all the activities to the right. That means in the second week Maggie, Alice and Arthur had been delayed due to the delay by Nomsa. Maggie has also had one delay and therefore has a diagonal line to the right with the number of days delayed. Once again Alice and Arthur are delayed with a week due to the delay by Maggie. There were no further delays and the other activities ends when their activity lines reach the diagonal line. This is the end of the project and the project manager can visually see the delay in the target date.

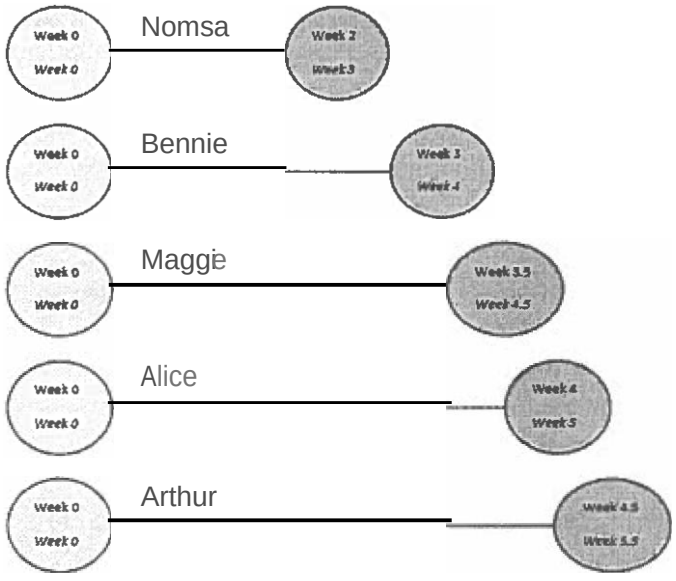
To make sure you understand timeline charts, also do Exercise 9.2 on page 222 in the prescribed book.

Ball charts

Note: The Ball charts answer is optional; mark only if any of the three above is missing (5)

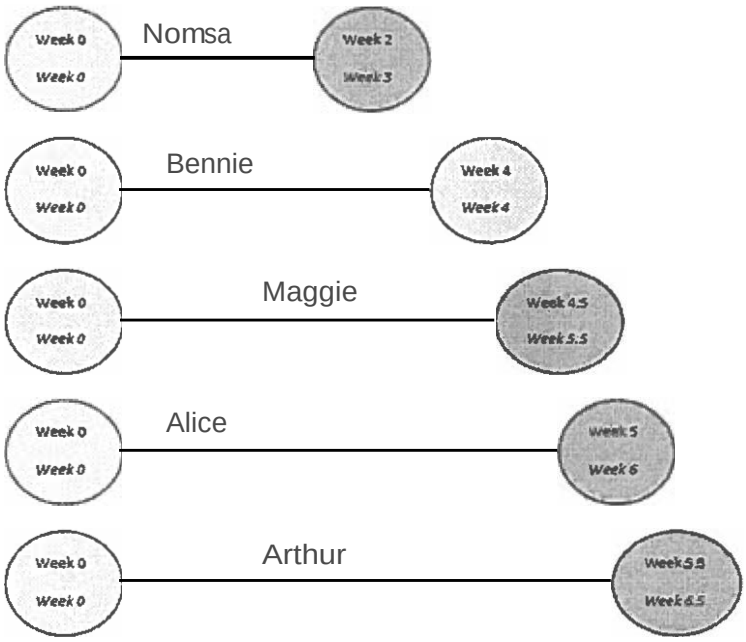
Another way to visualise the progress of activities is with a ball chart. This chart uses circles and colours to indicate whether an activity is ahead or behind schedule. If the activity is ahead of schedule the circle for that activity is coloured light grey and if an activity is late the circle is coloured dark grey. The original scheduled date is the top date in the circle, the most recent or the actual date is in italics in the bottom. One advantage of this chart is that it is very easy for a project manager to keep it up to date.

After week 1:



After week 1, all the tasks are 1 week behind schedule, coloured dark grey, because Nomsa was delayed by 1 week

After week 4:



After week 4, Bennie is on schedule, therefore the lighter coloured ball, but Maggie is delayed by 1 week, delaying Alice and Arthur as well by 1 week. We assume that after the initial delay, he activities were rescheduled, resulting in the Week 4 scheduled date for Bennie.