Software Project Management

INF3708

Assignment 04: Due date 28 April 2017 Compulsory

ASSIGNMENT 04 - SEMESTER 1

ASSIGNMENT 04	
Due date	28 April 2017
Study material	Hughes & Cotterell: Chapters 8 and 9
Total marks	55 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:
716909

3. Show all your working (calculations).

Questions on Chapter 8 – Resource allocation

QUESTION 1 **[10]**

A resource is any item or person required for the execution of the project. As a developing project manager involved in a team of software development project in your organization (Right solution), you understand the important of allocating individual members of staff to activities as early as possible, as it can lead your team to revise estimate of their duration. Your team has mandated you to **list and discuss possible factors that need to be considered when allocating individuals to tasks.**

Answer

The factors that need to be considered when allocating individuals to tasks include:

Availability: when allocating individual to task, it need to be ascertain whether the individual will be available when required.

Criticality: Allocation of more experienced personnel to activities on the critical path often helps in shortening project durations or at least reduces the risk of overrun.

Risk: To help allocate staff, it is important to identify those activities posing the greatest risk, and have knowledge of the factors influencing them. Allocating the most experienced staff to the highest-risk activities is likely to have the greatest effect in reducing overall project uncertainties.

Training: It would be benefit organisations if positive steps are taken to allocate junior staff to appropriate non-critical activities where there will be sufficient slack for them to train and develop skills.

Team building: The selection of individuals must also take account of the final shape of the project team and the way they will work together.

QUESTION 2 **[20]**

Calculating the cost of 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 big project. The staff cost for the Right Solution Project is shown in table 1 below. Peter is the main project manager. Due to planning and other post project review he spends 17 days extra on the project. "You" (call yourself anything) are the developing project manager assisting Pater in the Right Solution project and you only spent 5 day extra. The project overhead cost amount to R500 each day. Emma is scheduled to work daily for the duration of the project. Bester and Steve are training and support specialist so their services would only be needed for only the fourth month (the last 30 days). The remaining project teams likes John (System Design), Ana (Programmer) and Khumo (System tester) will work for three months (90 days) after the first month (30 day) of requirement analysis by Smith.

Staff member	Daily cost
Peter	R1000
"You" (the name here depends on what you call yourself)	R450
John	R500
Ana	R550
Emma	R550
Bester	R200
Steve	R200
Khumo	R400
Smith	R400

Table1 for Question 2

Based on the information in table 1, calculate the total cost for the Right Solution software development project. Show all your calculation. (20)

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 cos1	Days required	Cost	
Peter	R1000	120+17=137	R 13,7000	2 mark
"You"	R450	120+5=125	R 56,250	2 mark
John	R500	90	R 45,000	2 mark
Ana	R550	90	R 49,500	2 mark
Emma	R550	120	R 66,000	2 mark
Bester	R200	30	R 6000	1 mark
Steve	R200	30	R 6000	1 mark
Khumo	R400	90	R 36, 000	2 mark
Smith	R400	30	R 12, 000	2 mark
Overhead costs*	R500	120	R 60,000	2 mark
Total			R 47, 3750	2 mark

***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 [16]

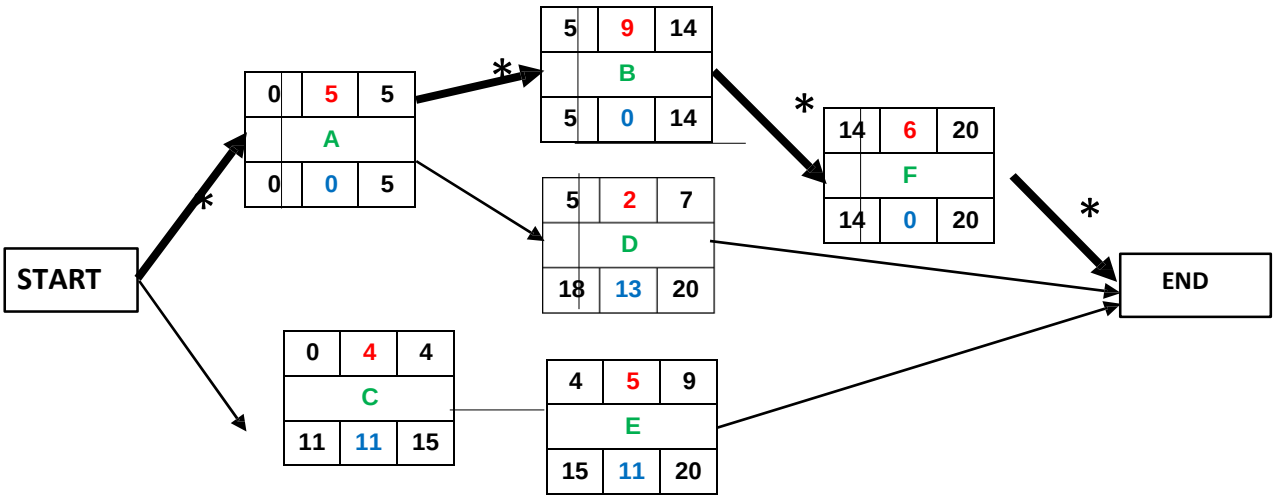
With the information on the table 2, Draw an activity-on-node network. Calculate earliest start (ES) and Latest finish (LF).

Activity	Description	Resources	Duration (working days)	Precedents
A	Requirement analysis	System analyst	5	None
B	System design	System Designer	9	A
C	Programming	Programmer	4	None
D	Hardware installation	Hardware Installer	2	A
E	System testing	Tester	5	C
F	Training and Support	Trainer and supporters	6	B

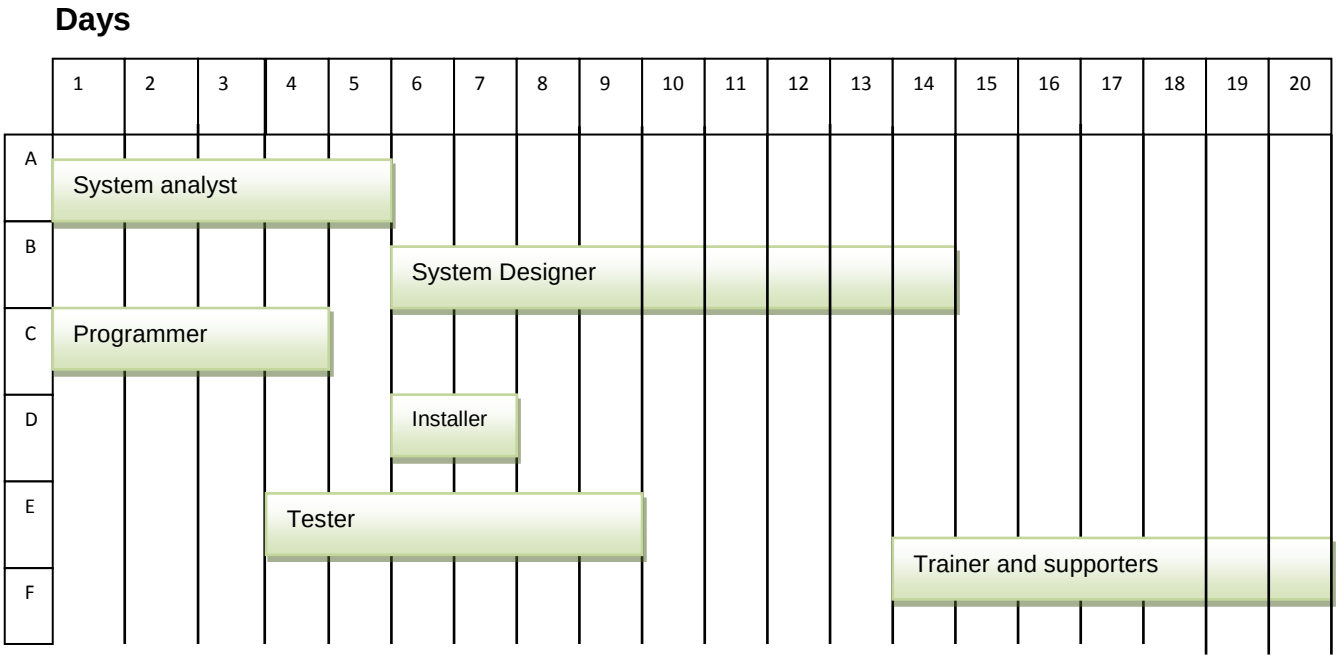
Table 2 for question 3

3.1 One of the final results of resource allocation is “Resource Schedule” which shows the dates each resource will be required and the level of the requirement. The table 2 has activity description and resources that are needed per activity. Use the information on table 2 to draw activity-on-node network, include all the node calculates **(4 Marks).** Using a bar chart schedule the resources of this project to the activities plan drawn (i.e map out the resources indicated in column 3 of table 2 to the activity plan you draw). Other thing being equal, assume all resources are required only once and each activity has been scheduled to start at its earliest start date **(6 Marks).**

Answer:



Based on the ES and LS in the above figure, resources are scheduled using a bar chart below.



3.2 Why is it important to prioritize activities in projects? (2)

Answer

Allocating a resource to particular activity limits the flexibility for resource allocation and scheduling of other activities. Therefore it is important to prioritize activities so that resources can be allocated to competing activities in some rational order. The priority should always be to allocate resource to critical path activities and then to activities that would most likely affect others.

3.3 Discuss at least two ways of prioritizing activities (4)

Answer

Total float priority: With this method, activities are ordered according to their total float. Activities with smallest total float have the highest priority. This means that activities are allocated resource in ascending order of total float.

Ordered list priority: this method allows activities that can proceed at the same time to be ordered according to a set of simple criteria.

QUESTION 4 [9]

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.

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.