TSSM™
Creating VCE Success

Software Development Teach Yourself Series

Topic 2: Project Management Units 1-4

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CASE STUDY

All Teach Yourself Series in this package will refer to the following case study.

Tariq Mulner is the manager of a school canteen. He manages how many lunches are going to be prepared each day. It is difficult to tell how many lunches will be sold, so he would like a software solution that students can use to order lunches. This application would provide him with a complete list of orders.
Most of the students have smart phones, so Tariq is suggesting the solution is a phone app that can read in the lunch order, and send it to his device so he can print out the order list.

Photo by Tirachard Kumtanom from Pexels used with permission

Project Table

As it appears in Units 1-4

A project table allows a project manager to brainstorm the tasks that will be involved throughout the project. This can be used to help plan, create, implement and evaluate the solution. The project table usually outlines the following information:

- Task name
- Task description
- Length of each task
- Resources required to complete the task
- Dependent tasks

A project table allows a project manager to brainstorm the tasks that will be involved throughout the project. This can be used to help plan, create, implement and evaluate the solution. The project table usually outlines the following information:

- Task ID
- Task name
- Task description
- Length of each task
- Resources required to complete the task
- Dependent tasks

Task ID	**Task Name**	**Description**	**Duration**	**Resources Required**	**Dependent Tasks**

Benefits of using a project table:

- Allows all tasks to be identified without being concerned about the sequence.
- Easily identifies dependent tasks.
- Provides details about what each task involves.
- Identifies the resources that are needed for each task.

Limitations of using a project table:

- Does not indicate length of project.
- Difficult to identify the critical path.

GANTT CHART

There are a number of key terms you should understand in relation to Project Management and are used in the design of a Gantt Chart.

Project

- A set of interrelated tasks carried out over a fixed period and within a budget and other constraints.
- A project is temporary, that is, it has a defined start and end date.
- Usually, projects involve a team, many people with different skills who are allocated tasks which they need to complete at a specified point in time.

Project Manager

- The person responsible for planning the project and coordinating all the resources (ie. people, money and equipment) to ensure that it is completed successfully by the due date.

Milestone

- A point in the project that marks a significant stage in the project, such as the completion of a key task.
- It has zero duration

Task

- A part of the project that needs to be completed as part of the whole project.

Gantt Chart

- A tool used to visually represent the tasks that need to be completed, the length of each task and when the tasks will be completed.

Resources

- May include money, equipment (hardware or software) or people that a task needs in order for it to be completed.

Critical Path

- The consecutive tasks from the beginning to end of the project that take the longest time.
- It would delay the end date of the project if any of the tasks were to take longer than expected.

Predecessor

- A task that must be completed before the current task can begin.

Successor

- A task that starts after the current task has been completed.
- This is also known as a dependent task.

Slack Time

- Extra time between tasks in case of delays in completing previous tasks.

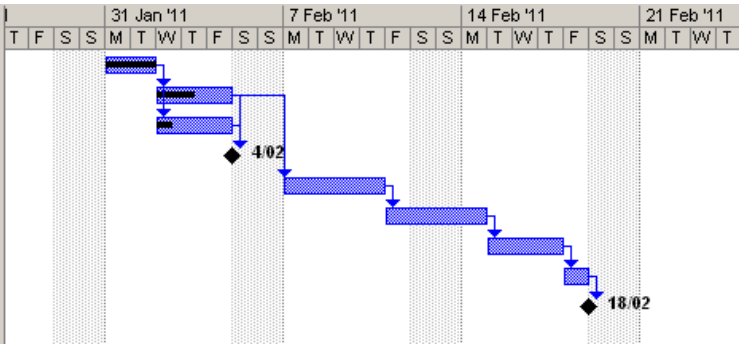
A Gantt chart is a tool used to visually represent the project tasks on a timeline. A Gantt chart usually shows the following:

- List of tasks
- Dependencies between tasks (represented by arrows)
- Length of each task
- Start and finish dates of each task (represented by a block of colour across a timeline)
- Resources required for each task.
- Progress of completed tasks (represented by a coloured bar across the task in the timeline)
- Milestones (represented by a diamond).

Project Table

	Task Name	Duration	Predecessors	Start
1	Task A	2 days		31 Jan
2	Task B	3 days	1	2 Feb
3	Task C	3 days	1	2 Feb
4	Task D	0 days	2,3	4 Feb
5	Task E	4 days	2	7 Feb
6	Task F	2 days	5	11 Feb
7	Task G	3 days	6	15 Feb
8	Task H	1 day	7	18 Feb
9	Task I	0 days	8	18 Feb

Gantt Chart



Benefits of using a Gantt Chart:

- Clearly illustrates the timeline of the project.
- Easily represents project progress.
- Can link resource information to each task.
- Can handle large projects.
- Identifies project milestones.

Limitations of using a Gantt Chart:

- Difficult to see dependencies.
- Difficult to see the entire project at once for large projects.

	Task Name	Duration	Start	Finish	Predi	Resource Names	Add Ne
0	Data Analysis	124 days?	Tue 10/12/19	Fri 29/05/20			
1	Phase 1 - Analysis	23 days?	Tue 10/12/19	Thu 9/01/20			
2	Data Collection	8.5 days?	Tue 10/12/19	Fri 20/12/19			
3	Create Data Collection Tools	2 days	Tue 10/12/19	Wed 11/12/19		Client	
4	Test DC Tools	2 days	Thu 12/12/19	Fri 13/12/19	3	Prospective Interviewees	
5	Decide whether to proceed	0.5 days	Mon 16/12/19	Mon 16/12/19	4	Manager	
6	Identify Primary Sources	1 day?	Mon 16/12/19	Tue 17/12/19	5	Client	
7	Data Collection	3 days	Tue 17/12/19	Fri 20/12/19	6		
8	Conduct Data Collection	0 days	Fri 20/12/19	Fri 20/12/19	7	Interviewers	
9	Data Codification	5 days	Wed 25/12/19	Tue 31/12/19			
10	Select Key graphic elements, colours etc.	0.5 days	Wed 25/12/19	Wed 25/12/19		Client	
11	Codify Data	1 day	Wed 25/12/19	Wed 25/12/19		Manager	
12	Spreadsheets	2 days	Thu 26/12/19	Fri 27/12/19	11	Manager	
13	Cleanse Data	1 day	Mon 30/12/19	Mon 30/1 /19	12	Manager	
14	Analyse Data	2 days	Tue 31/12/19	Wed 1/01 0	13	Manager	

Review Questions

The following questions refer to the Gantt Chart on page 6.

1. Which of the following is used to visually represent the tasks of the project?

A. Work breakdown structure
B. Resources
C. Gantt chart
D. Milestone

2. Which of the following does not describe a project?

A. It has a defined start and end
B. Aims to achieve a certain goal
C. It is ongoing
D. It involves many people with various skills

3. A project table should be created:

A. Before a Gantt chart
B. After a Gantt chart
C. In place of a Gantt chart
D. None of the above

4. How many days will be required to complete all the data collection ready for codification?

A. 3
B. 23
C. 8.5
D. 5

5. Why does Task D have an arrow from Task B and Task C, but Task E only has an arrow from Task B?

6. Which of the following is not a reason to use a Gantt Chart?

A. It is easy to see how much of the project has been completed
B. It is easy to outline the resources required to complete a task
C. It is easy to calculate the critical path
D. It is easy to identify project milestones

7. Which tasks are on the critical path in the Gantt Chart on page 6?

A. 3,4,5,6,7,8,10,11,12,13,14
B. 3,4,5,6,7,8, 11,12,13,14
C. 2, 9
D. 1,2,3,4,5,6,7,8,9,10,11,12,13,14

8. How many days' slack-time does the Gantt Chart on page 6 have?

A. 1
B. 2
C. 3
D. 5

Applied Questions

Tariq has asked you to produce an app. The Analysis is available in TOPIC 1. You have 3 weeks to develop the app to hand over. Ideally Tariq should have the solution for 2 weeks before evaluation begins.

1. Create a Project Table for Tariq's Project

Task Name	**Description**	**Duration**	**Resources Required**	**Dependent Tasks**

2. Use software to create a Gantt Chart for Marie's Database Project.

(Work through with teacher in class)

Solutions to Review Questions

1. The correct answer is: C

A Gantt chart is one of the tools that are used to represent the timeline of a project. Work breakdown structure (A) is the list of tasks that will appear in a Gantt chart. Resources (B) will be needed to complete each task. A milestone (D) is a significant point of a project that will be identified in a Gantt chart.

2. The correct answer is: C

A, B and D are all true descriptions of a project. C is not true as a project is temporary.

3. The correct answer is: A

A project table is usually produced in the initial planning stage of a project (A). There is little benefit in creating a project table after a Gantt chart (B) as the Gantt chart helps sequence to tasks. A Gantt chart provides added benefits over a project table, so the project table should not replace the Gantt chart (C).

4. The correct answer is: C

The Data Collection process takes 8.5 days in total.

5. The arrows represent the predecessor tasks. In this case, Task D is dependent on both Task B and Task C, however, Task E is only dependent on Task B.

6. The correct answer is: C

It is difficult to calculate the critical path of a project in a Gantt Chart. The other options are all good reasons to use a Gantt chart.

7. The correct answer is: B

The tasks to be done are 3,4,5,6,7,8 – then task 10 is not a predecessor for any other task so it is NOT on the critical path, then 11,12,13,14.

8. The correct answer is: C

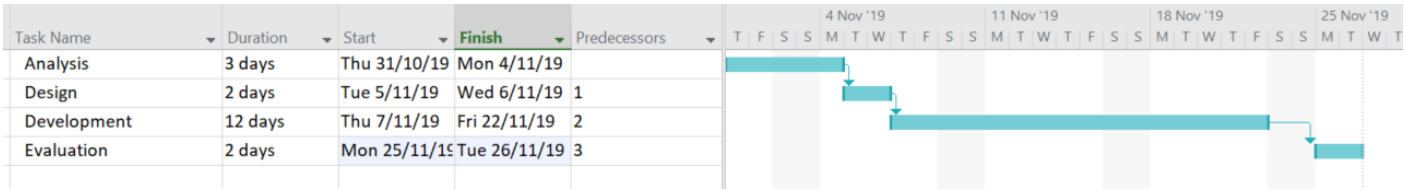
The Milestone is set to Friday 20th then Codification begins on the 25th.Taking away the two days for the weekend, this gives 3 days' slack time.

Applied Question 1 and 2

Project Table

Task Name	Description	Duration	Resources Required	Dependent Tasks
1. Interview Marie	*Data Collection*	*1 day*	*Interview Questions*	
2. Define Functional and Non- Functional Requirements	What the database has to do	2 days	Data collected from interview	1.
3. Design interface	What the database will look like	2 days	Functional and Non-Functional requirements	2.

Gant Chart



Task Name	Duration	Start	Finish	Predecessors
Analysis	3 days	Thu 31/10/19	Mon 4/11/19	
Design	2 days	Tue 5/11/19	Wed 6/11/19	1
Development	12 days	Thu 7/11/19	Fri 22/11/19	2
Evaluation	2 days	Mon 25/11/19	Tue 26/11/19	3