

# UNIT 6: BUSINESS DECISION MAKING

1

WEEK ELEVEN  
LECTURER: N. QUARRIE

# Learning Outcome Two (2)

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- LO4 Be able to use software-generated information to make decisions in an organization.

# Objective

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- By the end of this lesson you should be able to:
  - 4.1 use appropriate information processing tools
  - 4.2 prepare a project plan for an activity and
  - determine the critical path



# Overview

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- Last week's session focused on how to prepare a business presentation and doing a formal business report.
- This week will be looking at two Acs. These are concerned with networking and critical path analysis, Gantt and Pert charts.

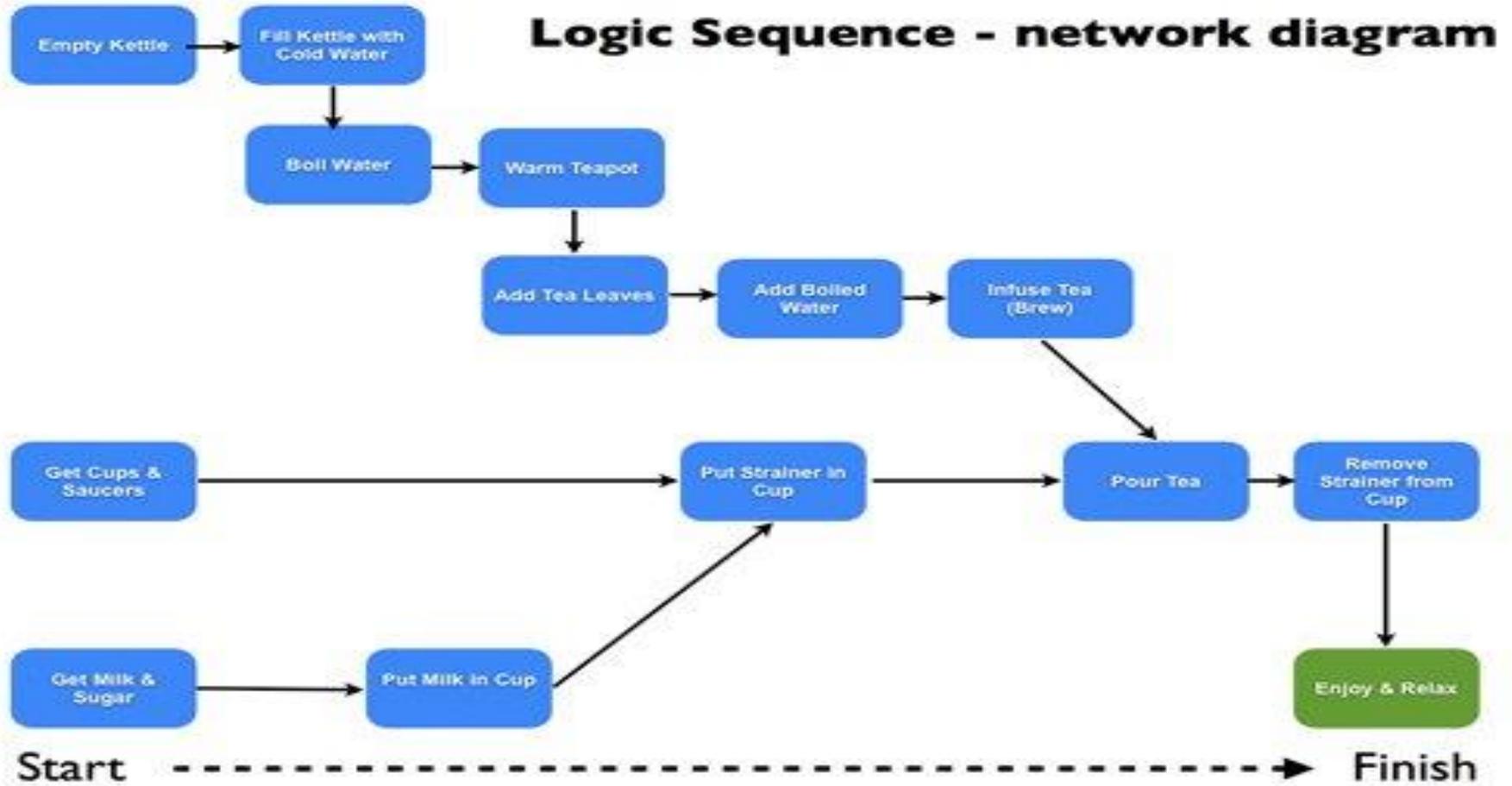
# Networking and critical path analysis

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- Network Diagram: According to (The Network Diagram - logical sequencing of tasks, 2016) “a network diagram is a sequence of steps (activities), commonly represented by blocks, that are linked together in the logical sequence they need to be carried out.

# Simple example of a network diagram: making a cup of tea

Source: (The Network Diagram - logical sequencing of tasks, 2016)



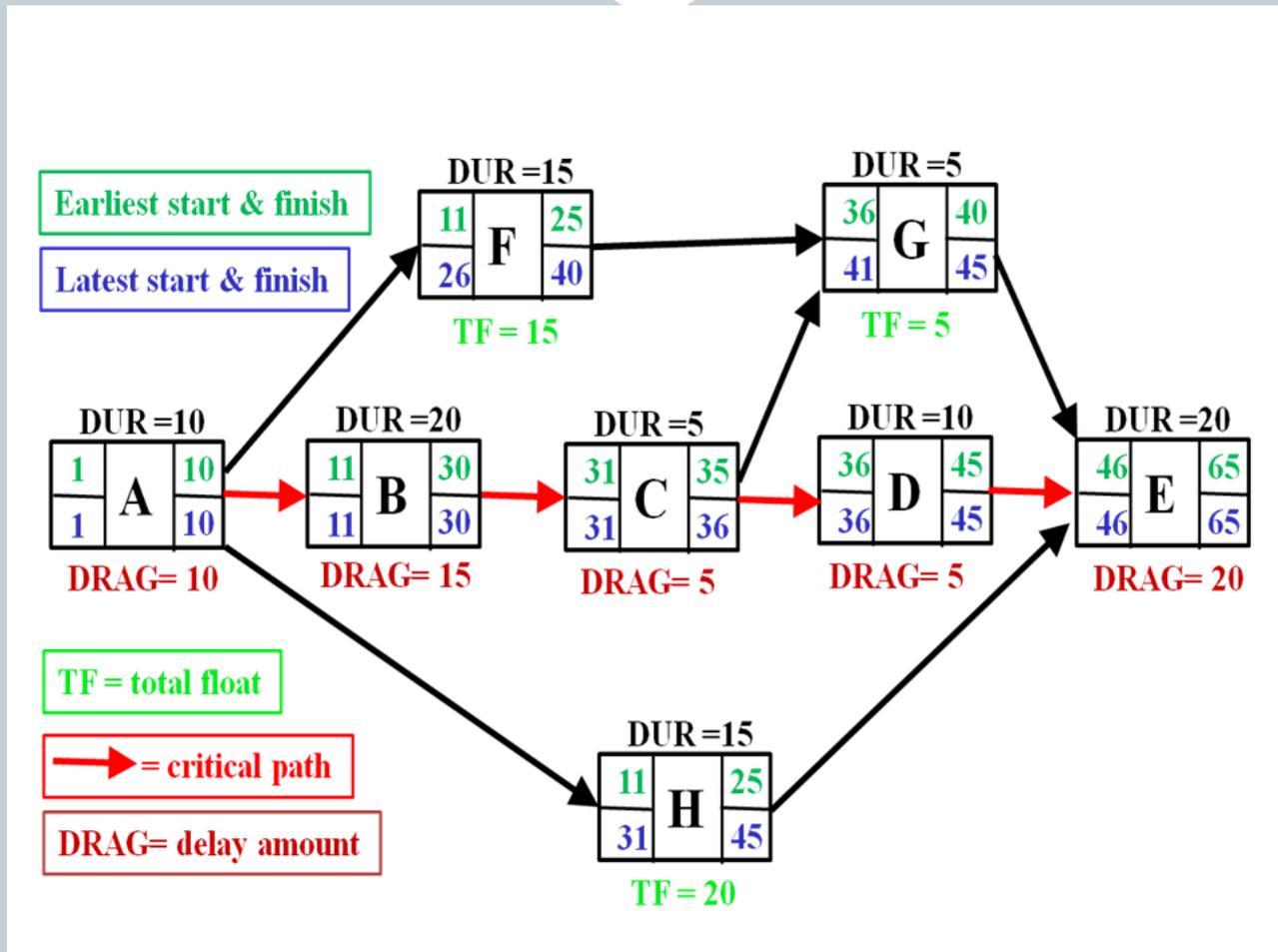
# Critical path analysis

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- According (Critical Path Analysis | Business | tutor2u, 2016) critical path analysis ("CPA") “is a widely-used project management tool that uses network analysis to help project managers to handle complex and time-sensitive operations.”
- The critical path is really the longest time it would take to complete a project. Using the diagram on the following page we would add the duration(DUR) for each step. The largest value corresponds to the critical path.

# Example of critical path

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# Gantt Chart

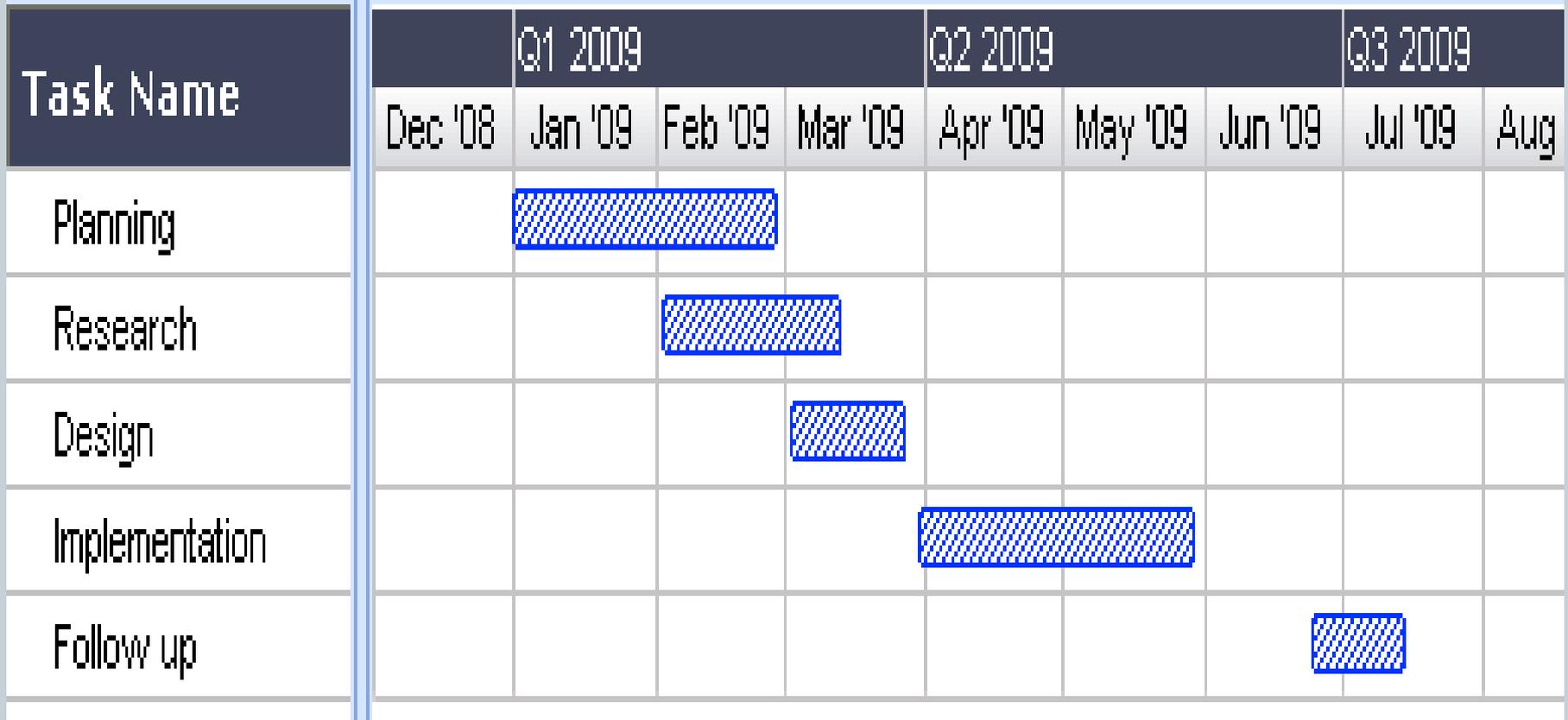
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- According to ([www.gantt.com](http://www.gantt.com), 2016) “A Gantt chart, commonly used in project management, is one of the most popular and useful ways of showing activities (tasks or events) displayed against time. On the left of the chart is a list of the activities and along the top is a suitable time scale. Each activity is represented by a bar; the position and length of the bar reflects the start date, duration and end date of the activity.”
- The website went on to further explain that the bar highlights:
  - What the various activities are
  - When each activity begins and ends
  - How long each activity is scheduled to last
  - Where activities overlap with other activities, and by how much
  - The start and end date of the whole project

# Example of a Gant chart

Source: (What is a Gantt Chart? Gantt Chart Information, history and Software, 2016)

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# How to create Gantt chart

Source: (How to Create a Gantt Chart in Excel, 2013)

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- The following steps will highlight how to create a Gantt using a Excel. These steps will be taken directly from:

How to Create a Gantt Chart in Excel. (2013). [online] Smartsheet. Available at:  
<https://www.smartsheet.com/blog/gantt-chart-excel001> [Accessed 8 Mar. 2016].

# How to create Gantt chart

Source: (How to Create a Gantt Chart in Excel, 2013)

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- **STEP ONE: (How to Create a Gantt Chart in Excel, 2013):**
- **1. Create a Task table: List each task in your project in start date order from beginning to end. Include**

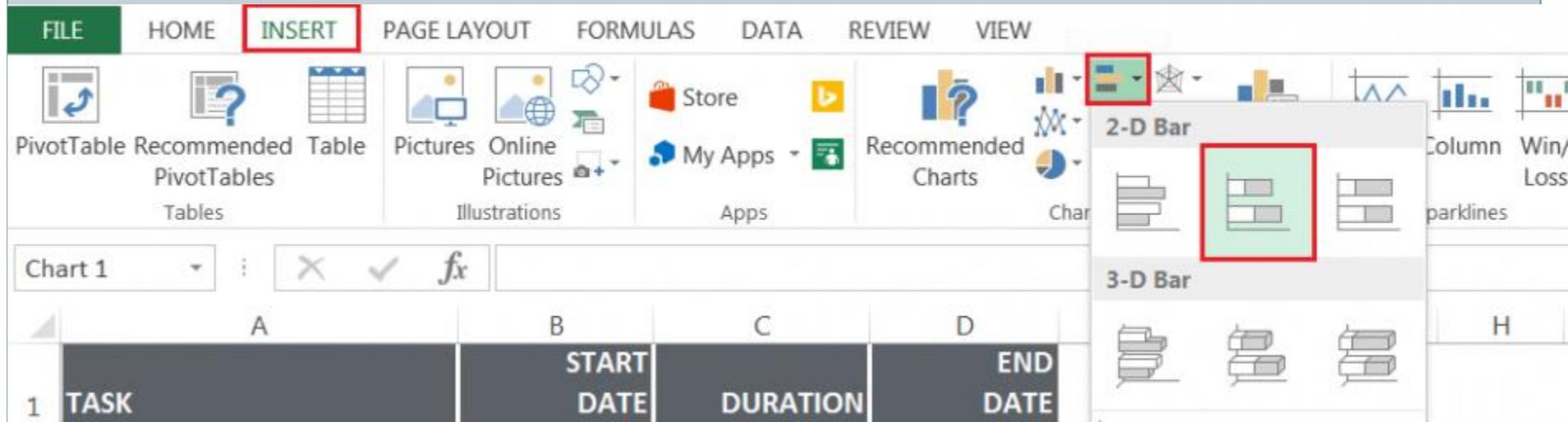
<b>TASK</b>	<b>START DATE</b>	<b>DURATION</b>	<b>END DATE</b>
<b>Conceptualize Event</b>	<b>3/1</b>	<b>5</b>	<b>6-Mar</b>
<b>Layout Logistics</b>	<b>3/6</b>	<b>3</b>	<b>9-Mar</b>
<b>Select Vendors</b>	<b>3/8</b>	<b>2</b>	<b>11-Mar</b>
<b>Hire Venue</b>	<b>3/10</b>	<b>1</b>	<b>12-Mar</b>
<b>Hire Caterer</b>	<b>3/11</b>	<b>1</b>	<b>13-Mar</b>
<b>Hire Event Decorations</b>	<b>3/11</b>	<b>3</b>	<b>14-Mar</b>
<b>Hire Publicist</b>	<b>3/13</b>	<b>2</b>	<b>12-Mar</b>
<b>Hire Designer</b>	<b>3/14</b>	<b>2</b>	<b>12-Mar</b>

# How to create Gantt chart

Source: (How to Create a Gantt Chart in Excel, 2013)

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- **STEP TWO: Build a Bar Chart:** On the top menu, select Insert, and then click on the Bar chart icon. When the drop-down menu appears, choose the flat Stacked Bar Chart, highlighted in green below. This will insert a blank chart onto your spreadsheet.



# How to create Gantt chart

Source: (How to Create a Gantt Chart in Excel, 2013)

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- **STEP TWO continued:**

## Add Start Date data.

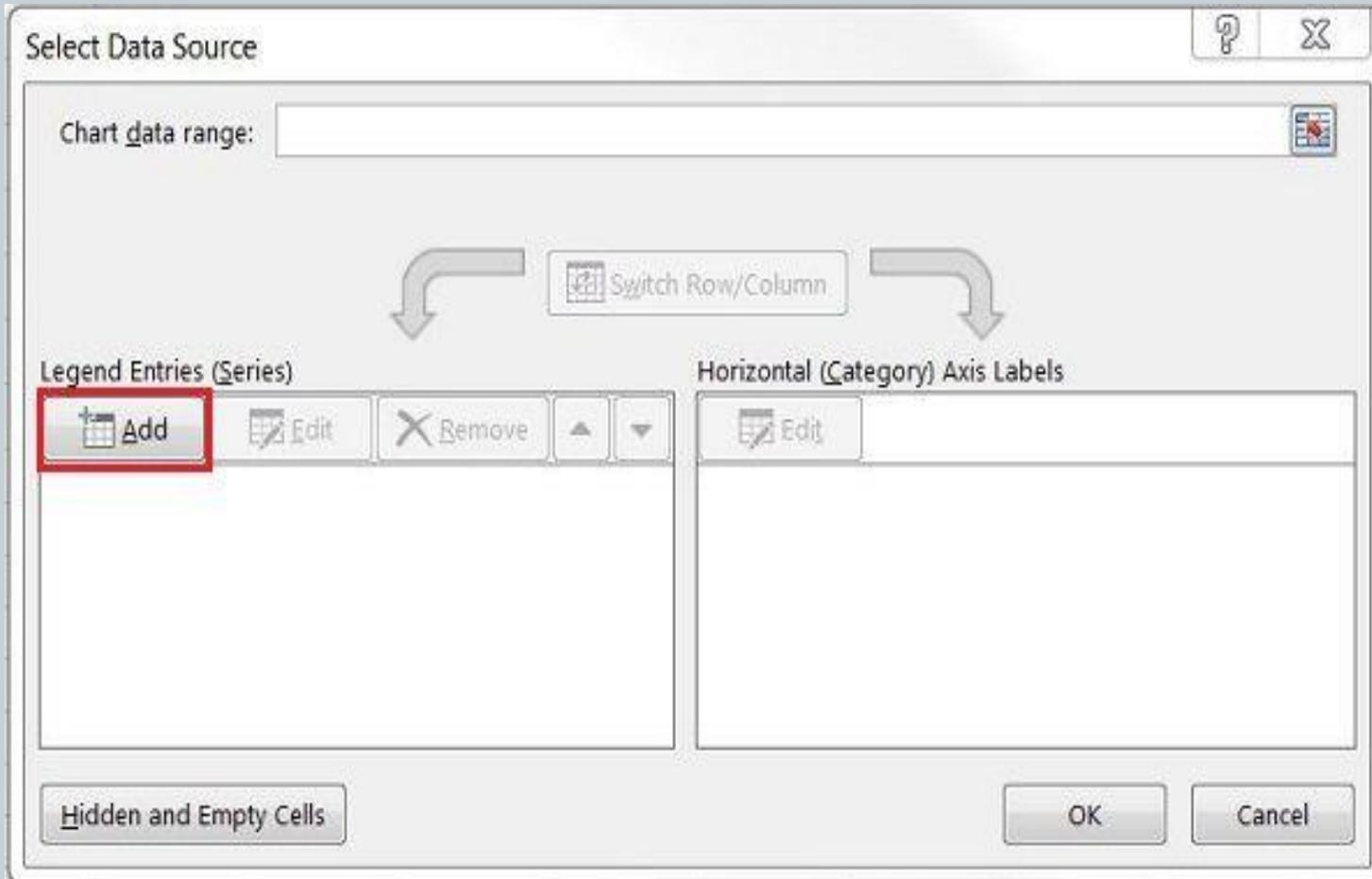
Position your mouse over the empty Excel chart and right click. Then, left click on Select Data. The Select Data Source window will appear.

Under Legend Entries (Series), click Add. This will take you to the Edit Series window.

# How to create Gantt chart

Source: (How to Create a Gantt Chart in Excel, 2013)

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# How to create Gantt chart

Source: (How to Create a Gantt Chart in Excel, 2013)

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- Click in the empty Series name: form field first, then click on the table cell that reads Start Date.

TASK	START DATE	DURATION	END DATE
Conceptualize Event	3/2	4	5-Mar
Layout Logistics	3/6	4	9-Mar
Select Vendors	3/9	3	11-Mar
Hire Venue	3/11	2	12-Mar
Hire Caterer	3/11	2	12-Mar
Hire Event Decorations	3/12	2	13-Mar
Hire Publicist	3/13	2	14-Mar
Hire Designer	3/13	2	14-Mar

Edit Series

Series name:  
=Sheet1!\$B\$1

Series values:  
={1}

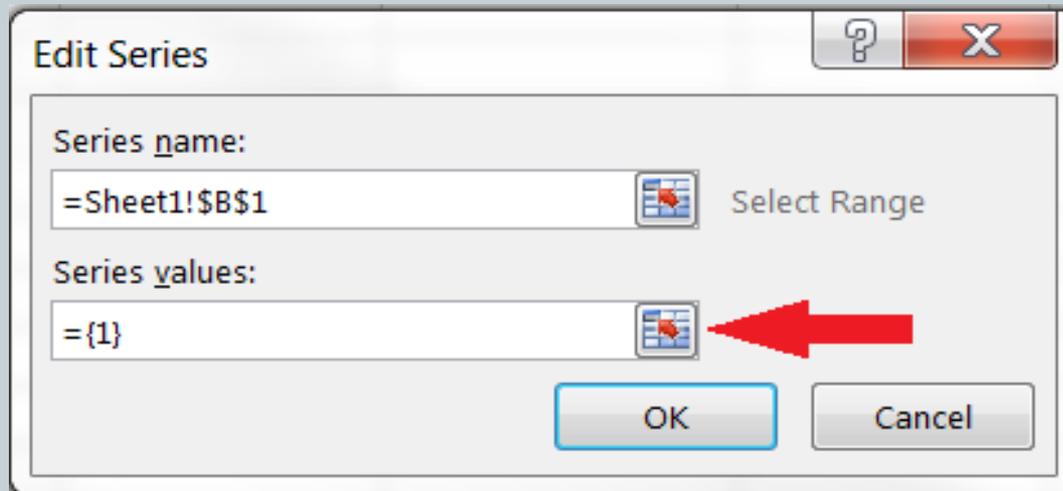
OK Cancel

# How to create Gantt chart

Source: (How to Create a Gantt Chart in Excel, 2013)

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- Click on the icon at the end of the Series values field. The icon is a small spreadsheet with a red arrow (the lower icon). This will open the Edit Series window.



# How to create Gantt chart

Source: (How to Create a Gantt Chart in Excel, 2013)

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- Click on the first Start Date, 3/2 in my example, and drag your mouse down to the last Start Date. After the right dates are highlighted, click on the icon at the end of the Edit Series form. The window will close and the previous window will reopen. Select OK. Your start dates are now in the Gantt chart.

TASK	START DATE	DURATION	END DATE
Conceptualize Event	3/2	4	5-Mar
Layout Logistics	3/6	4	9-Mar
Select Vendors	3/9	3	11-Mar
Hire Venue	3/11	2	12-Mar
Hire Caterer	3/11	2	12-Mar
Hire Event Decorations	3/12	2	13-Mar
Hire Publicist	3/13	2	14-Mar
Hire Designer	3/13	2	14-Mar



# How to create Gantt chart

Source: (How to Create a Gantt Chart in Excel, 2013)

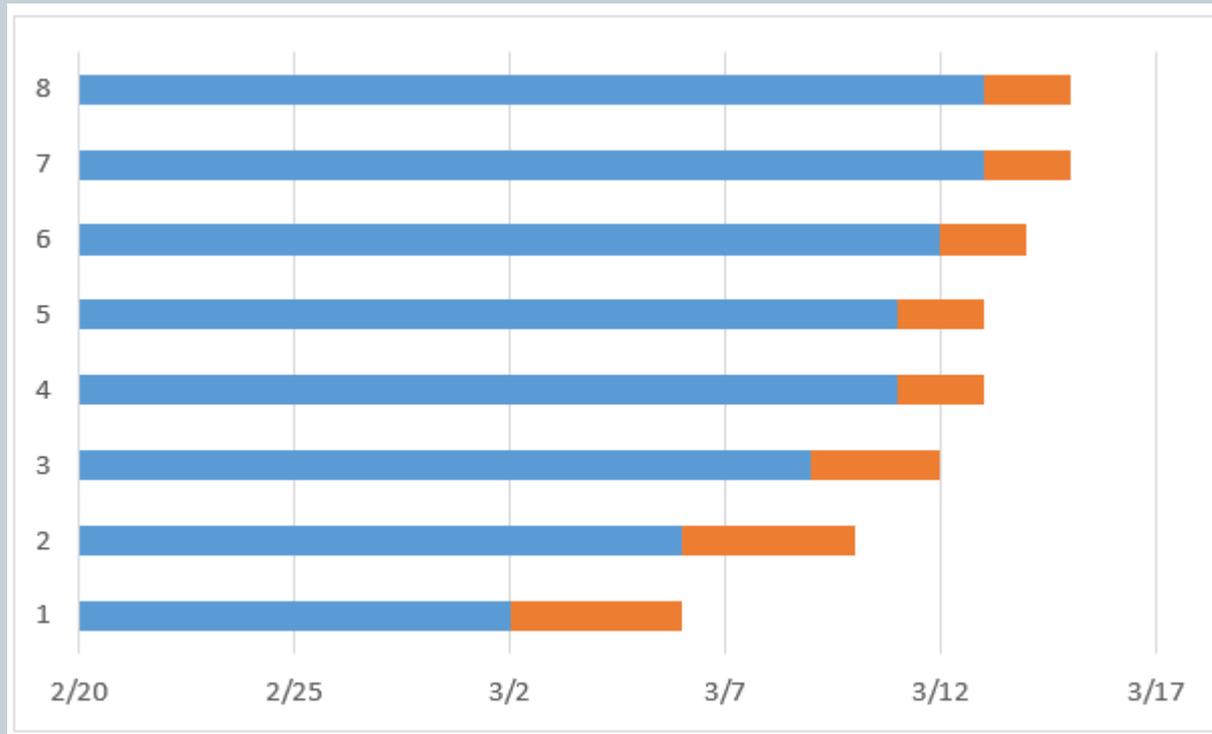
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- Next, add the Durations column using the same procedure you used to add the start dates.
- Under Legend Entries (Series), click on Add.
- Click in the empty Series name: form field first, then click on the table cell that reads Duration.
- Click on the icon at the end of the Series values field. The icon is a small spreadsheet with a red arrow (the lower icon). This will open the Edit Series window. Click on the first Duration, it is 5 in my example, and drag your mouse down to the last Duration. After the durations are highlighted, click on the icon at the end of the Edit Series form. The window will close and the previous window will reopen. Select OK. Your durations are now in your Gantt chart.

# How to create Gantt chart

Source: (How to Create a Gantt Chart in Excel, 2013)

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# How to create Gantt chart

Source: (How to Create a Gantt Chart in Excel, 2013)

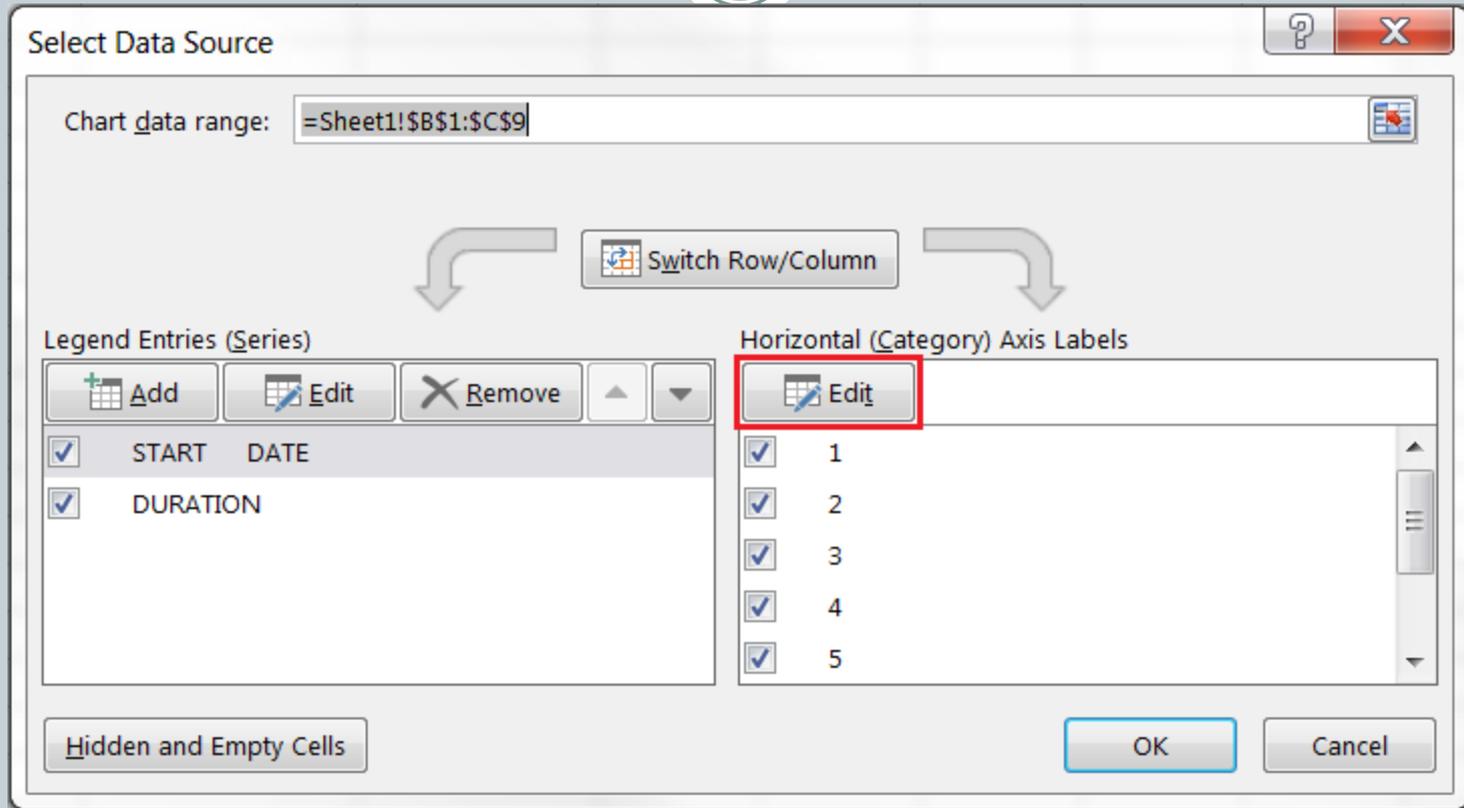
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- Change the dates on the left side of the chart into a list of tasks.
- Click on any bar in the chart, then right click, then open Select Data.
- 
- Under Horizontal (Category) Axis Labels, click on edit

# How to create Gantt chart

Source: (How to Create a Gantt Chart in Excel, 2013)

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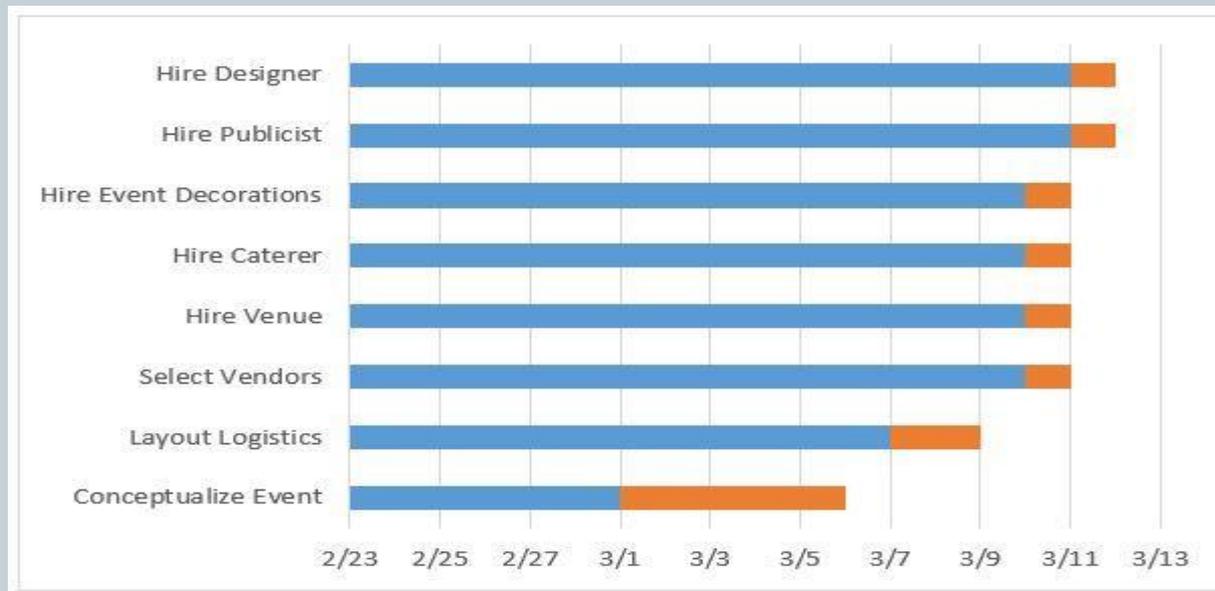
- Using your mouse, highlight the names of your tasks. Be careful not to include the name of the column itself, Task.

# How to create Gantt chart

Source: (How to Create a Gantt Chart in Excel, 2013)

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- Click on OK.
- Click OK again.
- Your Gantt chart ought to look like this:



# How to create Gantt chart

Source: (How to Create a Gantt Chart in Excel, 2013)

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- Still not finish! The final thing is to Format Your Gantt Chart. Please click on the following link to see how do the formatting: Its close to the end of the page- How to Create a Gantt Chart in Excel. (2013). [online] Smartsheet. Available at: <https://www.smartsheet.com/blog/gantt-chart-excel001> [Accessed 8 Mar. 2016].
- NB: The steps outline previously were taken directly from the source highlighted about so you can opt to use the source to follow the steps.

# PERT

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## The Program Evaluation and Review Technique (PERT):

According to (PERT Chart Definition | Investopedia, 2010):

“A PERT chart is a project management tool that provides a graphical representation of a project's timeline. A PERT chart is a graph that represents all of the tasks necessary to a project's completion, and the order in which they must be completed along with the corresponding time requirements. Certain tasks are dependent on serial tasks, which must be completed in a certain sequence. Tasks that are not dependent on the completion of other tasks are called parallel or concurrent tasks and can generally be worked on simultaneously. PERT charts are preferable to Gantt Chart because they more clearly identify task dependencies; however, the PERT chart is often more challenging to interpret. As such, project managers frequently employ both methodologies.”

# How to create PERT chart using Excel

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- Follow the steps available via the following link to produce a PERT chart:
- How to Create a PERT Chart in Microsoft Excel 2007. (2016). [online] Brighthub Project Management. Available at: <http://www.brightbupm.com/templates-forms/36049-creating-pert-charts-in-excel-2007/> [Accessed 8 Mar. 2016].

# Videos

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- Finding critical path using Excel:  
<https://www.youtube.com/watch?v=a01E3jzDNfg>
- Creating Gantt chart using Excel:  
<https://www.youtube.com/watch?v=-oD5oHSBBBI>

# Review Questions

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1. Explain how to determine the critical path for a network of activity
2. What is one of the main advantage of using a Gantt chart versus PERT.
3. Use Gant chart to represent the activities etc involves in completing any one of your term papers

# References/Additional Reading List

- Critical Path Analysis | Business | tutor2u. (2016). [online] Tutor2u.net. Available at: <http://www.tutor2u.net/business/reference/critical-path-analysis> [Accessed 8 Mar. 2016].
- How to Create a Gantt Chart in Excel. (2013). [online] Smartsheet. Available at: <https://www.smartsheet.com/blog/gantt-chart-excel001> [Accessed 8 Mar. 2016].
- How to Create a PERT Chart in Microsoft Excel 2007. (2016). [online] Brighthub Project Management. Available at: <http://www.brightbubpm.com/templates-forms/36049-creating-pert-charts-in-excel-2007/> [Accessed 8 Mar. 2016].

# References/Additional Reading List

- Office Timeline: Gantt Chart Excel: Step-by-step, visual tutorial. (2016). [online] Office Timeline. Available at: <https://www.officetimeline.com/gantt-chart-excel> [Accessed 8 Mar. 2016].
- PERT Chart Definition | Investopedia. (2010). [online] Investopedia. Available at: <http://www.investopedia.com/terms/p/pert-chart.asp> [Accessed 8 Mar. 2016].
- The Network Diagram - logical sequencing of tasks. (2016). [online] Successful-project-management.com. Available at: <http://www.successful-project-management.com/network-diagram.html> [Accessed 8 Mar. 2016].
- What is a Gantt Chart? Gantt Chart Information, history and Software. (2016). [online] Gantt.com. Available at: <http://www.gantt.com/> [Accessed 8 Mar. 2016].