

MS Project Professional 2021

Tutorial #3 – Utilization of Resources, a walk-through example

CS 587 – Software Project Management

Dr. Atef Bader

Illinois Institute of Technology



-Presentation by
Akshay Ganji
aganji@hawk.iit.edu

An example

Assumptions and Constraints

1. Every review or inspection “meeting” task shall be carried by 5 engineers including ONE of the author(s)
2. Every review or inspection “preparation” task shall be carried by 4 engineers excluding the author(s)
3. Any “Rework” task can be executed by one or all authors of the original task
4. Project Plan shall be reviewed by at least ONE engineer from every technical area.
5. Risk mitigation and contingency plan shall be reviewed by at least ONE engineer from every technical area.
6. System Engineers are responsible for creating Analysis and Design artifacts

Consider the following assumptions...

- Allocate resources with 100% utilization
- Allocate resources with 25% utilization

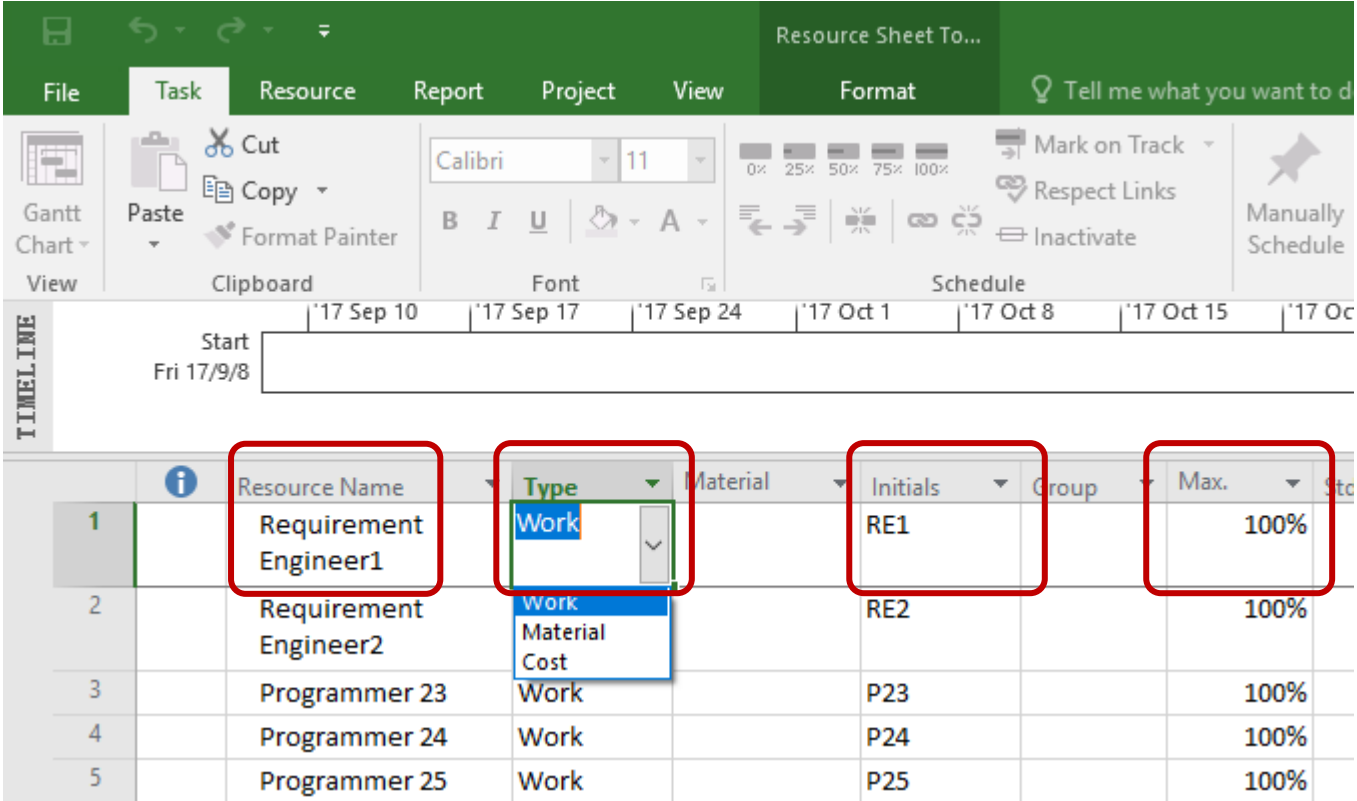


Steps for specifying the resource utilization

1. Create the resource
2. Assign the resource to the tasks
3. Specify the resource utilization (Max units)

Create the resource

- Go to the “resource sheet”
- Enter the resources
 - Resource Name
 - Type
 - Initials
 - Max units
 - the maximum percentage of units representing the maximum capacity for which a resource is available to accomplish any tasks during the current time period



The screenshot shows the 'Resource Sheet' tab in Microsoft Project. The ribbon includes 'File', 'Task', 'Resource', 'Report', 'Project', 'View', 'Format', and a search bar. The 'Task' ribbon is active, showing options like 'Gantt Chart View', 'Clipboard', 'Font', and 'Schedule'. The 'Resource Sheet' table is visible, with columns: Resource Name, Type, Material, Initials, Group, Max., and Std. The first row is highlighted, showing 'Requirement Engineer1' as the Resource Name, 'Work' as the Type (with a dropdown menu open showing 'Work', 'Material', and 'Cost'), 'RE1' as Initials, and '100%' as Max. units. The table is also filtered by 'Type' as 'Work'.

	Resource Name	Type	Material	Initials	Group	Max.	Std.
1	Requirement Engineer1	Work		RE1		100%	
2	Requirement Engineer2	Work		RE2		100%	
3	Programmer 23	Work		P23		100%	
4	Programmer 24	Work		P24		100%	
5	Programmer 25	Work		P25		100%	

Assign the resource

Using the pull-down list

	Task Mode	Task Name	Duration	Start	Finish	Predecessors	Resource Names	Add New Col
1		Project_100%_Resources	101.83 days	Mon 18/2/12	Tue 18/7/3			
2		Project Plan	5.5 days	Mon 18/2/12	Mon 18/2/19			
3		Write Plan	3 days	Mon 18/2/12	Wed 18/2/14		Project Manager 2	
4		Review Plan	2.5 days	Thu 18/2/15	Mon 18/2/19	3		
5		Preparation for Review	2.5 days	Thu 18/2/15	Mon 18/2/19	3		
6		Requirement	5.17 days	Mon 18/2/19	Mon 18/2/26	5		
7		Write Requirements	5.17 days	Mon 18/2/19	Mon 18/2/26	5		
8		Analysis	16.27 days	Mon 18/2/26	Tue 18/3/20	7		
9		Write Analysis Document	15.2 days	Mon 18/2/26	Mon 18/3/19	7		
10		Review Analysis Document	1.07 days	Mon 18/3/19	Tue 18/3/20	9		
11		Preparation for Review	1.07 days	Mon 18/3/19	Tue 18/3/20	9		
12		Design	20.17 days	Tue 18/3/20	Wed 18/4/18	11		
13		Write DD	18.57 days	Tue 18/3/20	Mon 18/4/16	11		
14		Review DD	1.6 days	Mon 18/4/16	Wed 18/4/18	13		
15		Preparation for Review	1.6 days	Mon 18/4/16	Wed 18/4/18	13		
16		Coding and Unit Testing	45 days	Wed 18/4/18	Wed 18/6/20	15		
17		Write Code	40 days	Wed 18/4/18	Wed 18/6/13	15		
18		Code Review	5 days	Wed 18/6/13	Wed 18/6/20	17		
19		Testing	9.73 days	Wed 18/6/20	Tue 18/7/3	18		
20		Write Test Plan	8.95 days	Wed 18/6/20	Tue 18/7/3	18		
21		Review Test Plan	0.78 days	Tue 18/7/3	Tue 18/7/3	20		
22		Preparation for Review	0.78 days	Tue 18/7/3	Tue 18/7/3	20		

☐ Documentation Engineer 12
☐ Documentation Engineer 14
☐ Documentation Engineer13
☐ Programmer 23
☐ Programmer 24
☐ Programmer 25
☐ Programmer/Software Engineer 23
☐ Programmer/Software Engineer 24
☐ Programmer12
☐ Programmer45
☒ Project Manager 2
☐ Requirement Engineer 9
☐ Requirement Engineer 12
☐ Requirement Engineer 13
☐ Requirement Engineer1
☐ Requirement Engineer2
☐ System Engineer 1
☐ System Engineer 3
☐ System Engineer 4
☐ System Engineer 5
☐ System Engineer 11
☐ System Engineer2
☐ Test Engineer 53
☐ Test Engineer 54
☐ Test Engineer 55
☐ Test Engineer 56
☐ Tester2

Requirement Engineer 12,
Programmer/Software

Using assign resources window

Project_100%_Resources

File Task Resource Report Project View Format Tell me what you want to do...

Team Planner View Assign Resources (Alt+F10) Assign resources to the tasks in the project.

Assign Resources

Task: Write Plan
Resource list options

Resources from Project_100%_Resources.mpp

Resource Name	R/D	Units	Cost
Project Manager 2		100%	\$0.00
Documentation Engin			
Documentation Engin			
Documentation Engin			
Programmer 23			
Programmer 24			
Programmer 25			
Programmer/Software			
Programmer/Software			
Programmer12			

Hold down Ctrl and click to select multiple resources

Assign Remove Replace... Graph Close Help

Specify the utilization

- Specify the max units in task sheet

Double click

Task Mode	Task Name	Duration	Start	Finish	Predecessors	Resource Names
	Project_100%_Resources	101.83 days	Mon 18/2/12	Tue 18/7/3		
	Project Plan	5.5 days	Mon 18/2/12	Mon 18/2/19		
	Write Plan	3 days	Mon 18/2/12	Wed 18/2/14		Project Manager 2
	Review Plan	2.5 days	Thu 18/2/15	Mon 18/2/19	3	
	Preparation for Review	2.5 days	Thu 18/2/15	Mon 18/2/19	3	Requirement Engineer 9, System Engineer 3
	Requirement	5.17 days	Mon 18/2/12	Mon 18/2/19		
	Write Requirements	5.17 days	Mon 18/2/12	Mon 18/2/19		
	Analysis	16.27 days	Mon 18/2/12	Mon 18/2/19		
	Write Analysis Document	15.2 days	Mon 18/2/12	Mon 18/2/19		
	Review Analysis Document	1.07 days	Mon 18/2/12	Mon 18/2/19		
	Preparation for Review	1.07 days	Mon 18/2/12	Mon 18/2/19		
	Design	20.17 days	Mon 18/2/12	Mon 18/2/19		
	Write DD	18.57 days	Mon 18/2/12	Mon 18/2/19		
	Review DD	1.6 days	Mon 18/2/12	Mon 18/2/19		
	Preparation for Review	1.6 days	Mon 18/2/12	Mon 18/2/19		
	Coding and Unit Testing	45 days	Mon 18/2/12	Mon 18/2/19		
	Write Code	40 days	Mon 18/2/12	Mon 18/2/19		
	Code Review	5 days	Mon 18/2/12	Mon 18/2/19		
	Testing	9.73 days	Mon 18/2/12	Mon 18/2/19		
	Write Test Plan	8.95 days	Wed 18/6/20	Tue 18/7/3	18	Test Engineer 56, Test Engineer 57
	Review Test Plan	0.78 days	Tue 18/7/3	Tue 18/7/3	20	
	Preparation for Review	0.78 days	Tue 18/7/3	Tue 18/7/3	20	Requirement Engineer 12, Programmer/Software

Task Information

General | Predecessors | Resources | Advanced | Notes | Custom Fields

Name: Preparation for Review Duration: 2.5 days ☐ Estimated



Resources:

Resource Name	Assignment Owner	Units	Cost
Requirement Engineer 9		100%	\$0.00
System Engineer 3		100%	\$0.00

Help OK Cancel

Specify the utilization

- Specify the max units in resource sheet

		Resource Name ▾	Type ▾	Material ▾	Initials ▾	Group ▾	Max. ▾	Std. Rate ▾	Ovt. Rate ▾	Cost/Use ▾	Accrue ▾	Base Calendar ▾
1		Requirement Engineer1	Work		RE1		100% 	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard
2		Requirement Engineer2	Work		RE2		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard
3		Programmer 23	Work		P23		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard
4		Programmer 24	Work		P24		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard
5		Programmer 25	Work		P25		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard

Example

- Max units = 100%



		Task Mode ▾	Task Name ▾	Duration ▾	Start ▾	Finish ▾	Predecessors ▾	Resource Names ▾	Add Ne
1			Project_100%_Resources	101.83 days	Mon 18/2/12	Tue 18/7/3		Resource Names	
2			Project Plan	5.5 days	Mon 18/2/12	Mon 18/2/19		Lists the names of all resources assigned to a task.	
3			Write Plan	3 days	Mon 18/2/12	Wed 18/2/14			
4			Review Plan	2.5 days	Thu 18/2/15	Mon 18/2/19	3		
5			Preparation for Review	2.5 days	Thu 18/2/15	Mon 18/2/19	3	Requirement Engineer 9, System Engineer 3	
6			Requirement	5.17 days	Mon 18/2/19	Mon 18/2/26	5		

- Max units = 25%



		Task Mode ▾	Task Name ▾	Duration ▾	Start ▾	Finish ▾	Predecessors ▾	Resource Names ▾	Add Ne
1			Project_100%_Resources	137.88 days	Mon 18/2/12	Wed 18/8/22			
2			Project Plan	5.5 days	Mon 18/2/12	Mon 18/2/19			
3			Write Plan	3 days	Mon 18/2/12	Wed 18/2/14		Project Manager 2[25%]	
4			Review Plan	2.5 days	Thu 18/2/15	Mon 18/2/19	3		
5			Preparation for Review	2.5 days	Thu 18/2/15	Mon 18/2/19	3	Requirement Engineer 9[25%], System Engineer 3[25%]	
6			Requirement	10.33 days	Mon 18/2/19	Mon 18/3/5	5		

Example

- Max units = 100%

		Resource Name ▾	Type ▾	Material ▾	Initials ▾	Group ▾	Max. ▾	Std. Rate ▾	Ovt. Rate ▾	Cost/Use ▾	Accrue ▾	Base Calendar ▾	Coc
1		Requirement Engineer1	Work		RE1		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard	
2		Requirement Engineer2	Work		RE2		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard	
3		Programmer 23	Work		P23		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard	
4		Programmer 24	Work		P24		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard	
5		Programmer 25	Work		P25		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard	
6		Programmer45	Work		P45		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard	

- Max units = 25%

		Resource Name ▾	Type ▾	Material ▾	Initials ▾	Group ▾	Max. ▾	Std. Rate ▾	Ovt. Rate ▾	Cost/Use ▾	Accrue ▾	Base Calendar ▾	Coc
1		Requirement Engineer1	Work		RE1		25%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard	
2		Requirement Engineer2	Work		RE2		25%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard	
3		Programmer 23	Work		P23		25%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard	
4		Programmer 24	Work		P24		25%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard	
5		Programmer 25	Work		P25		25%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard	
6		Programmer45	Work		P45		25%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard	

Questions ?