

# MS Project Professional 2016

## Tutorial #4 – Resource Pool

CS 587 – Software Project Management

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Illinois Institute of Technology



-Presentation by  
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# **Resource pool project and Sharer project**

- **Resource pool project** - the project containing the resources that you want to share
- **Sharer project** - the project that will share resources from another project

# Tasks for both projects

## Resource pool project

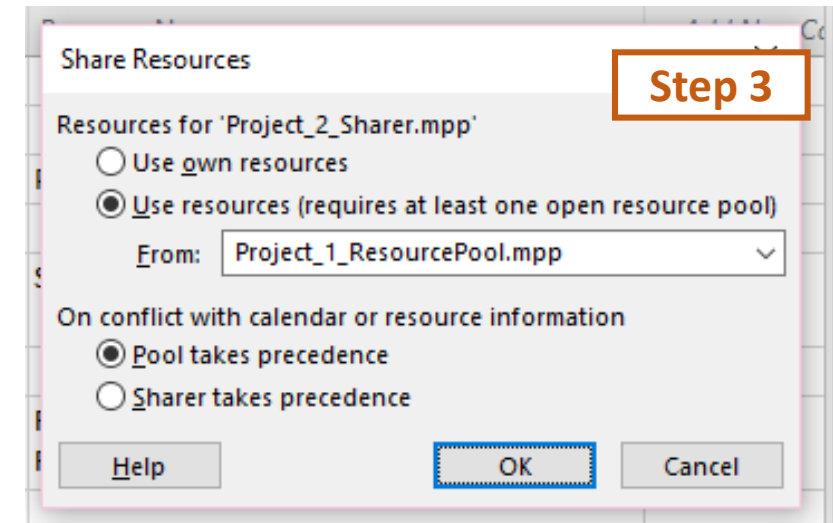
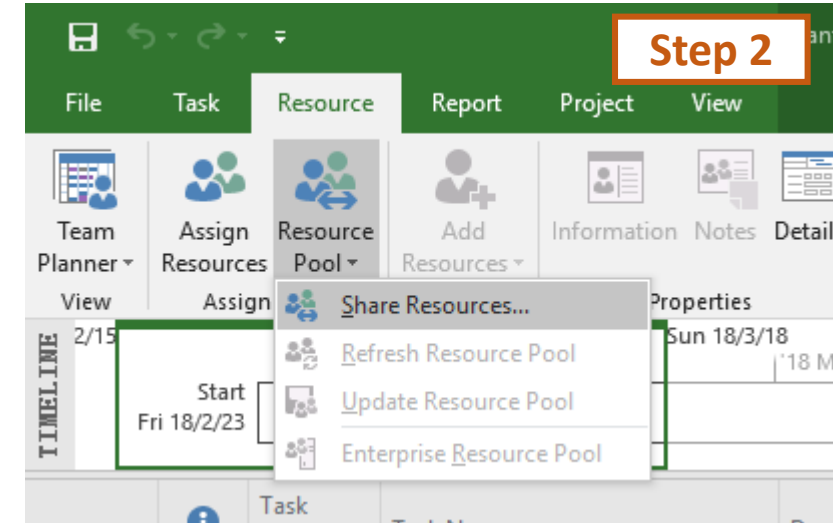
	i	Task Mode ▾	Task Name ▾	Duration ▾	Start ▾	Finish ▾	Predecessors ▾
1		📄	Project_1_ResourcePool	169.1 days	Fri 18/2/23	Thu 18/10/18	
2		📄	Project Plan	7 days	Fri 18/2/23	Mon 18/3/5	
3		📄	Write Plan	6 days	Fri 18/2/23	Fri 18/3/2	
4		📄	Review Plan	1 day	Mon 18/3/5	Mon 18/3/5	
5		📄	Preparation for Review	1 day	Mon 18/3/5	Mon 18/3/5	3
6		📄	Requirement	12 days	Tue 18/3/6	Wed 18/3/21	
7		📄	Write Requirements	12 days	Tue 18/3/6	Wed 18/3/21	5
8		📄	Analysis	8.33 days	Thu 18/3/22	Tue 18/4/3	
9		📄	Write Analysis Document	5 days	Thu 18/3/22	Wed 18/3/28	7
10		📄	Review DD	3.33 days	Thu 18/3/29	Tue 18/4/3	
11		📄	Preparation for Review	3.33 days	Thu 18/3/29	Tue 18/4/3	9
12		📄	Design	40.43 days	Tue 18/4/3	Tue 18/5/29	
13		📄	Write DD	38.77 days	Tue 18/4/3	Mon 18/5/28	11
14		📄	Review DD	1.67 days	Mon 18/5/28	Tue 18/5/29	
15		📄	Preparation for Review	1.67 days	Mon 18/5/28	Tue 18/5/29	13
16		📄	Coding and Unit Testing	96 days	Tue 18/5/29	Wed 18/10/10	
17		📄	Write Test Cases	90 days	Tue 18/5/29	Tue 18/10/2	15
18		📄	Code Review	6 days	Tue 18/10/2	Wed 18/10/10	17
19		📄	Testing	5.33 days	Wed 18/10/10	Thu 18/10/18	
20		📄	Write Test Plan	3 days	Wed 18/10/10	Mon 18/10/15	18
21		📄	Review Test Plan	2.33 days	Mon 18/10/15	Thu 18/10/18	
22		📄	Preparation for Review	2.33 days	Mon 18/10/15	Thu 18/10/18	20

## Sharer project

	i	Task Mode ▾	Task Name ▾	Duration ▾	Start ▾	Finish ▾	Predecessors ▾
1		📄	Project_2_Sharer	140.99 days	Fri 18/2/23	Fri 18/9/7	
2		📄	Project Plan	9.9 days	Fri 18/2/23	Thu 18/3/8	
3		📄	Write Plan	7.4 days	Fri 18/2/23	Tue 18/3/6	
4		📄	Review Plan	2.5 days	Tue 18/3/6	Thu 18/3/8	3
5		📄	Preparation for Review	2.5 days	Tue 18/3/6	Thu 18/3/8	3
6		📄	Requirement	6.5 days	Thu 18/3/8	Mon 18/3/19	5
7		📄	Write Requirements	6.5 days	Thu 18/3/8	Mon 18/3/19	5
8		📄	Analysis	31.47 days	Mon 18/3/19	Tue 18/5/1	7
9		📄	Write Analysis Document	30.4 days	Mon 18/3/19	Mon 18/4/30	7
10		📄	Review Analysis Document	1.07 days	Mon 18/4/30	Tue 18/5/1	9
11		📄	Preparation for Review	1.07 days	Mon 18/4/30	Tue 18/5/1	9
12		📄	Design	38.4 days	Tue 18/5/1	Mon 18/6/25	11
13		📄	Write DD	36.8 days	Tue 18/5/1	Thu 18/6/21	11
14		📄	Review DD	1.6 days	Thu 18/6/21	Mon 18/6/25	13
15		📄	Preparation for Review	1.6 days	Thu 18/6/21	Mon 18/6/25	13
16		📄	Coding and Unit Testing	45 days	Mon 18/6/25	Mon 18/8/27	15
17		📄	Write Code	40 days	Mon 18/6/25	Mon 18/8/20	15
18		📄	Code Review	5 days	Mon 18/8/20	Mon 18/8/27	17
19		📄	Testing	9.73 days	Mon 18/8/27	Fri 18/9/7	18
20		📄	Write Test Plan	8.95 days	Mon 18/8/27	Fri 18/9/7	18
21		📄	Review Test Plan	0.78 days	Fri 18/9/7	Fri 18/9/7	20
22		📄	Preparation for Review	0.78 days	Fri 18/9/7	Fri 18/9/7	20

# Step to create a resource pool

- **Step 1**: Click the sharer project, remember to have the resource pool project also open
- **Step 2**: On the Resource Tab, click **Resource Pool**, and then click **Share Resources**
- **Step 3**: Specify the **resources** and **precedence** in the pop-up window, and then click OK.
- If your project already had resources entered, the resources from both the projects are combined



# Handle conflicts

## **Pool takes precedence**

- Resource information in the resource pool project to override any conflicting information from the sharer project (default)
- For example, if the resource named Karen Berg has maximum units of 100% in the sharer project, and 75% in the resource pool project. If the pool takes precedence, then the value of 75% is retained as the maximum units for Karen Berg.

## **Sharer takes precedence**

- Resource information in the sharer project to override any conflicting information from the resource pool project
- For example, if Karen Berg has a standard rate of \$50 in the sharer project, and a standard rate of \$45 in the resource pool project. If sharer takes precedence, the value of \$50 is retained as the standard rate for Karen Berg

# Tasks for both projects

## Resource pool project

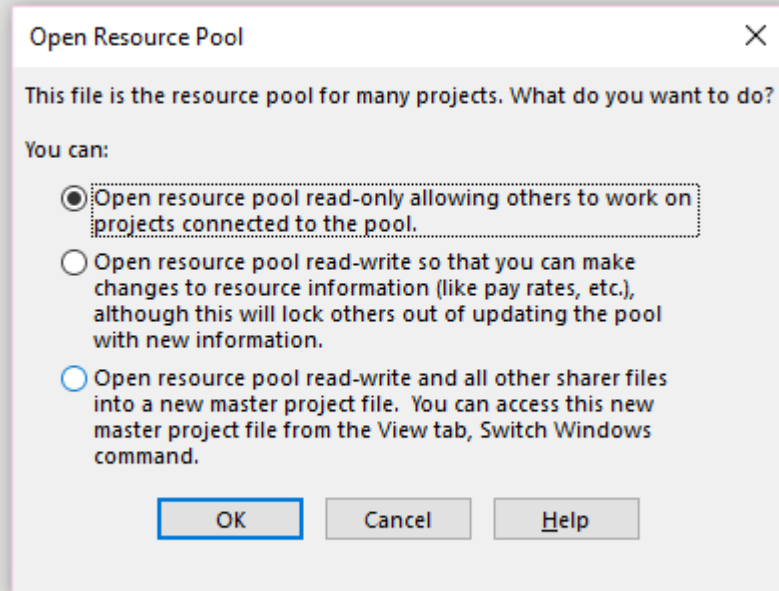
Project_1_ResourcePool.mpp - Project Professional												
Resource Sheet Tools												
File Task Resource Report Project View Format Tell me what you want to do												
Team Planner View Assign Resources Add Resources Information Notes Details Level Selection Level Resource Level All Clear Leveling Leveling Options Next Overallocation												
18 Feb 25 18 Mar 11 18 Mar 25 18 Apr 8 18 Apr 22 18 May 6 18 May 20 18 Jun 3 18 Jun 17 18 Jul 1												
Start Fri 18/2/23 Project_1_ResourcePool Fri 18/2/23 - Thu 18/10/18												
TIMELINE												
Add tasks with dates to the timeline												
1	2	3	4	5	6	7	8	9	10	11	12	13
Resource Name	Type	Material	Initials	Group	Max.	Std. Rate	Ovt. Rate	Cost/Use	Accrue	Base Calendar		
Requirement Engineer11	Work		RE11		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard		
Requirement Engineer21	Work		RE21		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard		
Programmer12	Work		P12		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard		
Tester2	Work		T2		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard		
Project Manager 2	Work		P2		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard		
Requirement Engineer 9	Work		RE9		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard		
Requirement Engineer 12	Work		RE12		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard		
Requirement Engineer 13	Work		RE13		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard		
System Engineer 8	Work		SE8		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard		
System Engineer 9	Work		SE9		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard		
System Engineer 11	Work		SE11		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard		
Programmer23	Work		P23		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard		
Programmer24	Work		P24		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard		
Test Engineer 54	Work		TE54		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard		
Test Engineer 55	Work		TE55		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard		
Test Engineer 56	Work		TE56		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard		
Test Engineer 53	Work		TE53		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard		
Documentation Engineer 12	Work		DE12		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard		
Requirement Engineer1	Work		RE1		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard		
Programmer 24	Work		P24		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard		
Programmer 25	Work		P25		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard		
System Engineer 1	Work		SE1		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard		
System Engineer 3	Work		SE3		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard		
System Engineer 4	Work		SE4		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard		
Programmer/Software Engineer	Work		P23		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard		
Programmer/Software Engineer	Work		P24		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard		
Project Manager 3	Work		P3		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard		

## Sharer project

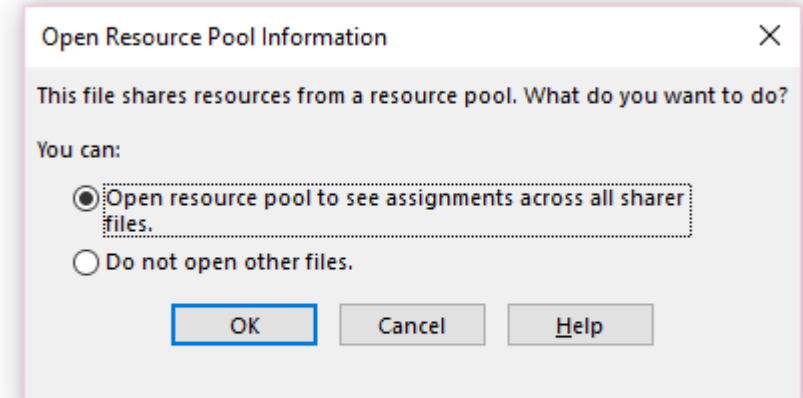
Project_2_Sharer.mpp - Project Professional												
Resource Sheet Tools												
File Task Resource Report Project View Format Tell me what you want to do												
Team Planner View Assign Resources Add Resources Information Notes Details Level Selection Level Resource Level All Clear Leveling Leveling Options Next Overallocation												
18 Feb 25 18 Mar 11 18 Mar 25 18 Apr 8 18 Apr 22 18 May 6 18 May 20 18 Jun 3 18 Jun 17 18 Jul 1												
Start Fri 18/2/23 Project_2_Sharer Fri 18/2/23 - Thu 18/10/18												
TIMELINE												
Add tasks with dates to the timeline												
1	2	3	4	5	6	7	8	9	10	11	12	13
Resource Name	Type	Material	Initials	Group	Max.	Std. Rate	Ovt. Rate	Cost/Use	Accrue	Base Calendar		
Requirement Engineer11	Work		RE11		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard		
Requirement Engineer21	Work		RE21		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard		
Programmer12	Work		P12		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard		
Tester2	Work		T2		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard		
Project Manager 2	Work		P2		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard		
Requirement Engineer 9	Work		RE9		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard		
Requirement Engineer 12	Work		RE12		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard		
Requirement Engineer 13	Work		RE13		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard		
System Engineer 8	Work		SE8		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard		
System Engineer 9	Work		SE9		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard		
System Engineer 11	Work		SE11		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard		
Programmer23	Work		P23		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard		
Programmer24	Work		P24		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard		
Test Engineer 54	Work		TE54		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard		
Test Engineer 55	Work		TE55		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard		
Test Engineer 56	Work		TE56		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard		
Test Engineer 53	Work		TE53		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard		
Documentation Engineer 12	Work		DE12		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard		
Requirement Engineer1	Work		RE1		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard		
Programmer 24	Work		P24		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard		
Programmer 25	Work		P25		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard		
System Engineer 1	Work		SE1		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard		
System Engineer 3	Work		SE3		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard		
System Engineer 4	Work		SE4		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard		
Programmer/Software Engineer	Work		P23		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard		
Programmer/Software Engineer	Work		P24		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard		
Project Manager 3	Work		P3		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard		

# Open the projects

## Open the resource pool



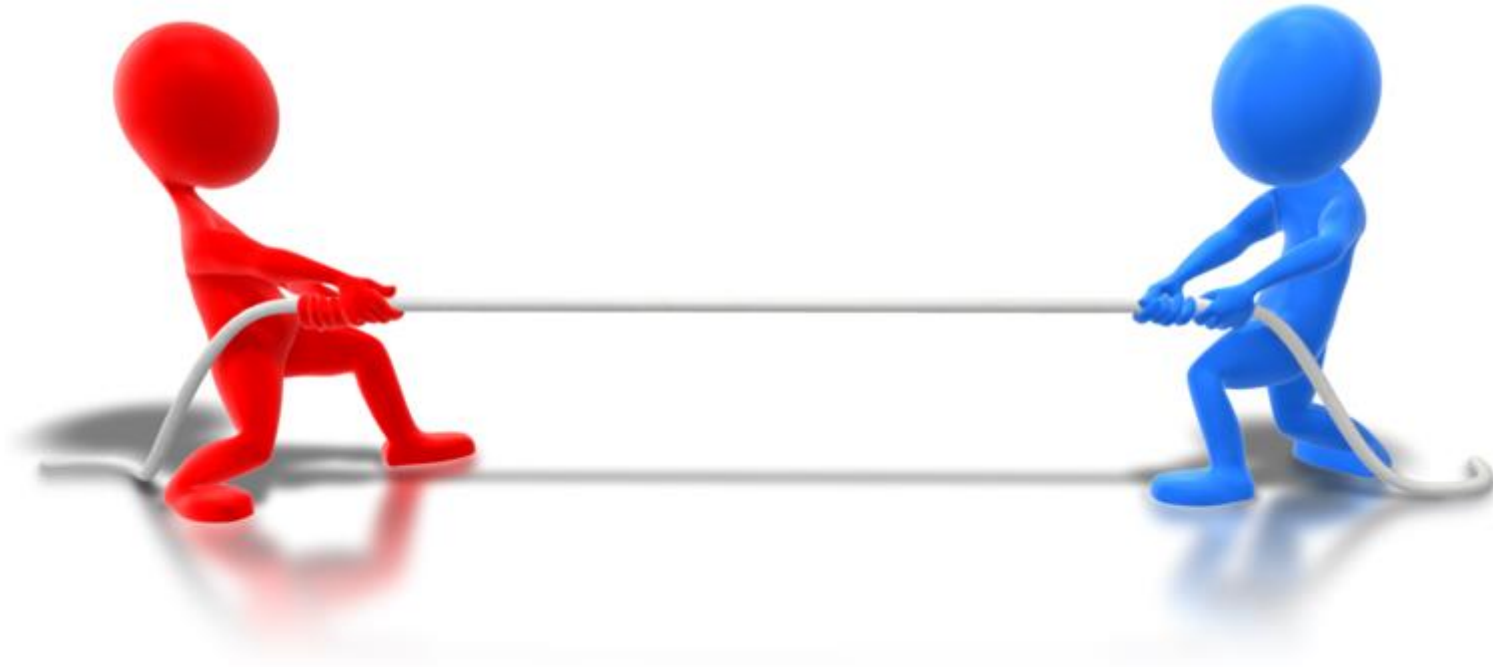
## Open the sharer





# Handle the conflicts

Conflicts can happen when two or more tasks are done in parallel, and the same resource is assigned to work on all the tasks simultaneously





# Handle the conflicts

- View conflicts

		Task Mode ▾	Task Name ▾	Duration ▾	Start ▾	Finish ▾	Predecessors ▾	R	<a href="#">View in Gantt Chart</a>	EW
1			Project_1_ResourcePool	166.1 days	Fri 18/2/23	Mon 18/10/15				
2			Project Plan	4 days	Fri 18/2/23	Wed 18/2/28				
3			Write Plan	3 days	Fri 18/2/23	Tue 18/2/27			Project Manager 2	
4			Review Plan	1 day	Wed 18/2/28	Wed 18/2/28				
5			Preparation for Review	1 day	Wed 18/2/28	Wed 18/2/28	3		Requirement Engineer 9, Syste	
6			Requirement	12 days	Thu 18/3/1	Fri 18/3/16				
7			Write Requirements	12 days	Thu 18/3/1	Fri 18/3/16	5		Requirement Engineer21	

		Resource Name ▾	Type ▾	Material ▾	Initials ▾	Group ▾	Max. ▾	Std. Rate	View in Resource Sheet				ase
1		Requirement Engineer11	Work		RE11		100%	\$0.0					ar
2		Requirement Engineer21	Work		RE21		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Star	
3		Programmer12	Work		P12		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Star	
4		Tester2	Work		T2		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Star	
5		Project Manager 2	Work		P2		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Star	
6		Requirement Engineer 9	Work		RE9		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Star	
7		Requirement Engineer 12	Work		RE12		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Star	
8		Requirement Engineer 13	Work		RE13		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Star	

# How to resolve conflicts ?

There are two ways to solve conflicts:

- **Strategy 1**

Allocate 50% (or any %) units of resource to one project and the remaining units to the other project

- **Strategy 2**

Assign 100% units of resource to both projects, but at different time slots



**Note:** The above strategies can be used for solving conflicts within the same project

# Strategy 1

- **Step 1**: Select the task that has conflicts
- **Step 2**: Double click the resources
- **Step 3**: Change the percentage

The screenshot shows a Gantt chart on the left and a 'Task Information' dialog box on the right. The Gantt chart lists tasks with their durations and dates. Task 3, 'Write Plan', is highlighted with a red icon. The 'Task Information' dialog box is open for Task 3, showing the 'Resources' tab. The 'Resources' table shows 'Project Manager 2' assigned to the task with a unit value of 50%.

Task ID	Task Name	Duration	Start	Finish
1	Project_1_ResourcePool	166.1 days	Fri 18/2/23	Mon 18/10/15
2	Project Plan	4 days	Fri 18/2/23	Wed 18/2/28
3	Write Plan	3 days	Fri 18/2/23	Tue 18/2/28
4	Review Plan	1 day	Wed 18/2/28	Wed 18/2/28
5	Preparation for Review	1 day	Wed 18/2/28	Wed 18/2/28
6	Requirement	12 days	Thu 18/3/1	Fri 18/3/1
7	Write Requirements	12 days	Thu 18/3/1	Fri 18/3/1
8	Analysis	8.33 days	Mon 18/3/19	Thu 18/3/1
9	Write Analysis Document	5 days	Mon 18/3/19	Fri 18/3/2
10	Review DD	3.33 days	Mon 18/3/26	Thu 18/3/1
11	Preparation for Review	3.33 days	Mon 18/3/26	Thu 18/3/1
12	Design	40.43 days	Thu 18/3/29	Thu 18/5/1
13	Write DD	38.77 days	Thu 18/3/29	Wed 18/5/1
14	Review DD	1.67 days	Wed 18/5/23	Thu 18/5/1
15	Preparation for Review	1.67 days	Wed 18/5/23	Thu 18/5/1
16	Coding and Unit Testing	96 days	Thu 18/5/24	Fri 18/10/1
17	Write Test Cases	90 days	Thu 18/5/24	Thu 18/9/1
18	Code Review	6 days	Thu 18/9/27	Fri 18/10/5

**Task Information**

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

Name: Write Plan Duration: 3 days ☐ Estimated



















Resources:

Resource Name	Assignment Owner	Units	Cost
Project Manager 2		50%	\$0.00

Help OK Cancel

# Strategy 2

- **Step 1:** Select the task that has a conflict
- **Step 2:** On the Resource Tab, click on “Level Resource”
- **Step 3:** Select the responsible resources
- **Step 4:** Click on “Level now”

	 Task Mode ▾	Task Name ▾	Duration ▾	Start ▾	Finish ▾	Predecessors ▾	Resource Names ▾	Add New Column
1		Project_1_ResourcePool	166.1 days	Fri 18/2/23	Mon 18/10/15			
2		Project Plan	4 days	Fri 18/2/23	Wed 18/2/28			
3	 	Write Plan	3 days	Fri 18/2/23	Tue 18/2/27			
4		Review Plan	1 day	Wed 18/2/28	Wed 18/2/28			
5	 	Preparation for Review	1 day	Wed 18/2/28	Wed 18/2/28	3		
6		Requirement	12 days	Thu 18/3/1	Fri 18/3/16			
7		Write Requirements	12 days	Thu 18/3/1	Fri 18/3/16	5		
8		Analysis	8.33 days	Mon 18/3/19	Thu 18/3/29			
9		Write Analysis Document	5 days	Mon 18/3/19	Fri 18/3/23	7		
10		Review DD	3.33 days	Mon 18/3/26	Thu 18/3/29			
11		Preparation for Review	3.33 days	Mon 18/3/26	Thu 18/3/29	9		
12		Design	40.43 days	Thu 18/3/29	Thu 18/5/24			
13	 	Write DD	38.77 days	Thu 18/3/29	Wed 18/5/23	11		
14		Review DD	1.67 days	Wed 18/5/23	Thu 18/5/24			

Tell me what you want to do

Level Resource

Leveling Options

Clear Leveling

Next Overalllocation

Level tasks for the selected resources.

Leveling resolves resource conflicts or overallocations by delaying or splitting tasks, based on the settings in the Leveling Options dialog box.

Fri 18/2/23	Wed 18/2/28		Project
Wed 18/2/28	Mon 18/3/5	3	

**Note:** The tasks in the project having precedence will start at the scheduled time. The tasks in the project **NOT** having precedence will be delayed until the resource is available to work on that task

**Questions ?**