

Save the project under the name: **Surname_3**

1. Defining resources

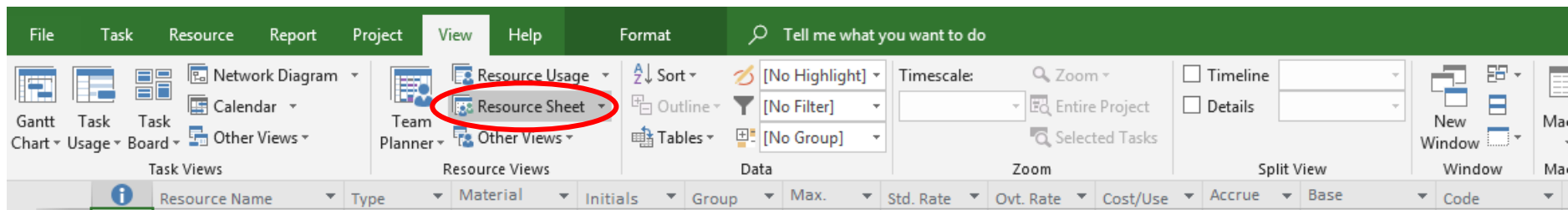
In MS Project, three types of resources can be distinguished:

- **Work** - people and equipment for executing tasks, effort is expressed by time
- **Material** – consumables, for example, paint used when painting a wall. The unit is quantity.
- **Cost** - Financial cost related to the task. Travel expenses, food expenses, etc.

Basic resource parameters:

- **Resource Name**
- **Type:** *Work, Material, Cost*
- **Material** - unit of material consumption
- **Initials** - abbreviation of resource names
- **Group** - name for grouping resources and their filtering (for example L-labor, M-materials, E-equipment)
- **Max. (Max units)** - The maximum units value specifies how much of this resource is available for this project — for example, part-time or multiples. For example, if you have a resource who is available for your project two days a week, you can enter a maximum units value of 40%. You can use maximum units to specify multiple availability of a resource designation. For example, suppose you have a resource named Engineers, a single resource that represents three individual engineers on your team. You can enter the maximum units for Engineers as 300%. You can schedule all three engineers for full-time work at one time without the Engineers resource being overallocated. You can enter maximum units as a percentage (50%, 100%, 300%).
- **Standard rate** – cost of 1 manhour (for *Work* resources), or cost of 1 resource unit (for *Material* resources)
- **Overtime rate**
- **Cost/Use** - one-time cost for each use of a resource
- **Accrue** - defines choices for how and when resource standard and overtime costs are to be charged, or accrued, to the cost of a task. The options are: *Start, End, Prorated (default)*
- **Base** - indicates which is the base calendar for a resource calendar, only for *Work* resources

Define resources and their parameters for your project - *View tab / Resource Views / Resource sheet*



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Double click on the resource name field to open the "**Resource Information**" window where you can fill in the data:

General tab: resource availability, type of resource, etc. For example, including the weekly leave of one of the "*Window Installers*" is shown below

Cost tab: Effective date, Standard Rate, Overtime rate, Per Use Cost, Cost accrual

The screenshot shows the 'Resource Information' window with the 'General' tab selected. The 'Resource name' is 'Window installers'. The 'Booking type' is 'Committed' and the 'Type' is 'Work'. A table under 'Resource Availability' shows a 100% leave period from 2019-04-19 to 2019-04-25.

Available From	Available To	Units
NA	2019-04-18	200%
2019-04-19	2019-04-25	100%
2019-04-26	NA	200%

The screenshot shows the 'Resource Information' window with the 'Costs' tab selected. The 'Resource Name' is 'Window installers'. A table under 'Cost rate tables' shows the current rates for 'A (Default)'. The 'Cost accrual' is set to 'Prorated'.

Effective Date	Standard Rate	Overtime Rate	Per Use Cost
--	\$180,00/d	\$220,00/h	\$0,00

Example of filled *Resource Sheet*:

	Resource Name	Type	Material	Initials	Group	Max.	Std. Rate	Ovt. Rate	Cost/Use	Accrue	Base
1	John Benoy	Work		JB	Writing	100%	85 000,00/yr	\$0,00/hr	\$0,00	Prorated	Standard
2	JoAnn Feith	Work		JF	Purchasing	100%	75 000,00/yr	\$0,00/hr	\$0,00	Prorated	Standard
3	Ron Berglund	Work		RB	Purchasing	100%	80 000,00/yr	\$0,00/hr	\$0,00	Prorated	Standard
4	Thomas Petersen	Work		TP	Purchasing	100%	75 000,00/yr	\$0,00/hr	\$0,00	Prorated	Standard
5	Jennifer McGill	Work		JM	Purchasing	100%	83 000,00/yr	\$0,00/hr	\$0,00	Prorated	Standard
6	John Smith	Work		JS	Corporate	100%	20 000,00/yr	\$0,00/hr	\$0,00	Prorated	Standard
7	Brian Sampson	Work		BS	Corporate	100%	10 000,00/yr	\$0,00/hr	\$0,00	Prorated	Standard
8	Sandra Westring	Work		SW	Writing	100%	73 000,00/yr	\$0,00/hr	\$0,00	Prorated	Standard
9	Demolition Contractor	Work		DC	Contractor	100%	\$125,00/hr	\$150,00/hr	\$0,00	Prorated	Standard
10	Carpenters	Work		C	Contractor	100%	\$100,00/hr	\$110,00/hr	\$0,00	Prorated	Standard
11	Electricians	Work		E	Contractor	100%	\$105,00/hr	\$115,00/hr	\$0,00	Prorated	Standard
12	Low Voltage Contractors	Work		LVC	Contractor	100%	\$110,00/hr	\$125,00/hr	\$0,00	Prorated	Standard
13	Painters	Work		P	Contractor	100%	\$100,00/hr	\$125,00/hr	\$0,00	Prorated	Standard
14	Data	Work		D	Contractor	100%	\$150,00/hr	\$175,00/hr	\$0,00	Prorated	Standard
15	Movers	Work		M	Contractor	100%	\$130,00/hr	\$145,00/hr	\$0,00	Prorated	Standard
16	Paint	Material	Gallons	Paint	Supply		\$17,56		\$0,00	Start	
17	Sheetrock	Material	Panels	SHRK	Supply		\$5,50		\$0,00	Start	
18	Budget-Work	Work		B	Budget					Prorated	Standard
19	Budget-Moving	Cost		B	Budget					Prorated	
20	Budget-Paint	Material	Gallons	B	Budget					Prorated	

2. Assigning resources to tasks

2.1. Change the task type

Defined resources can be assigned to tasks which should be assigned one of the types: *fixed units (default)*, *fixed work*, and *fixed duration*. Task types change the project schedule.

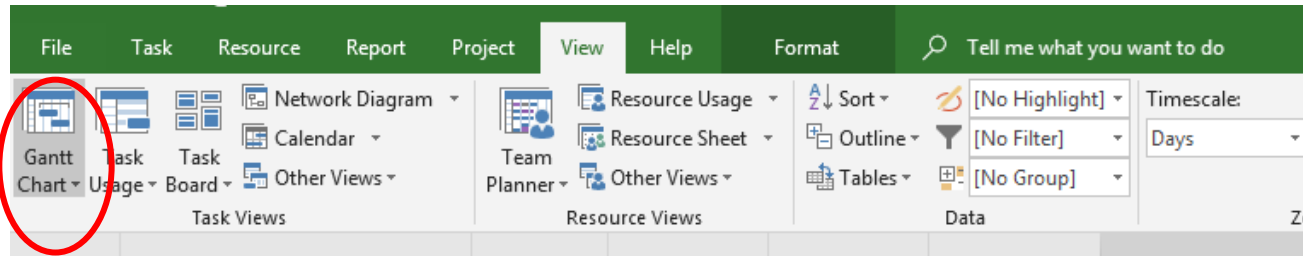
Each of the task types affects scheduling when you edit one of the three elements as follows.

In a	If you revise units	If you revise duration	If you revise work
Fixed units task	Duration is recalculated.	Work is recalculated.	Duration is recalculated.
Fixed work task	Duration is recalculated.	Units are recalculated.	Duration is recalculated.
Fixed duration task	Work is recalculated.	Work is recalculated.	Units are recalculated.

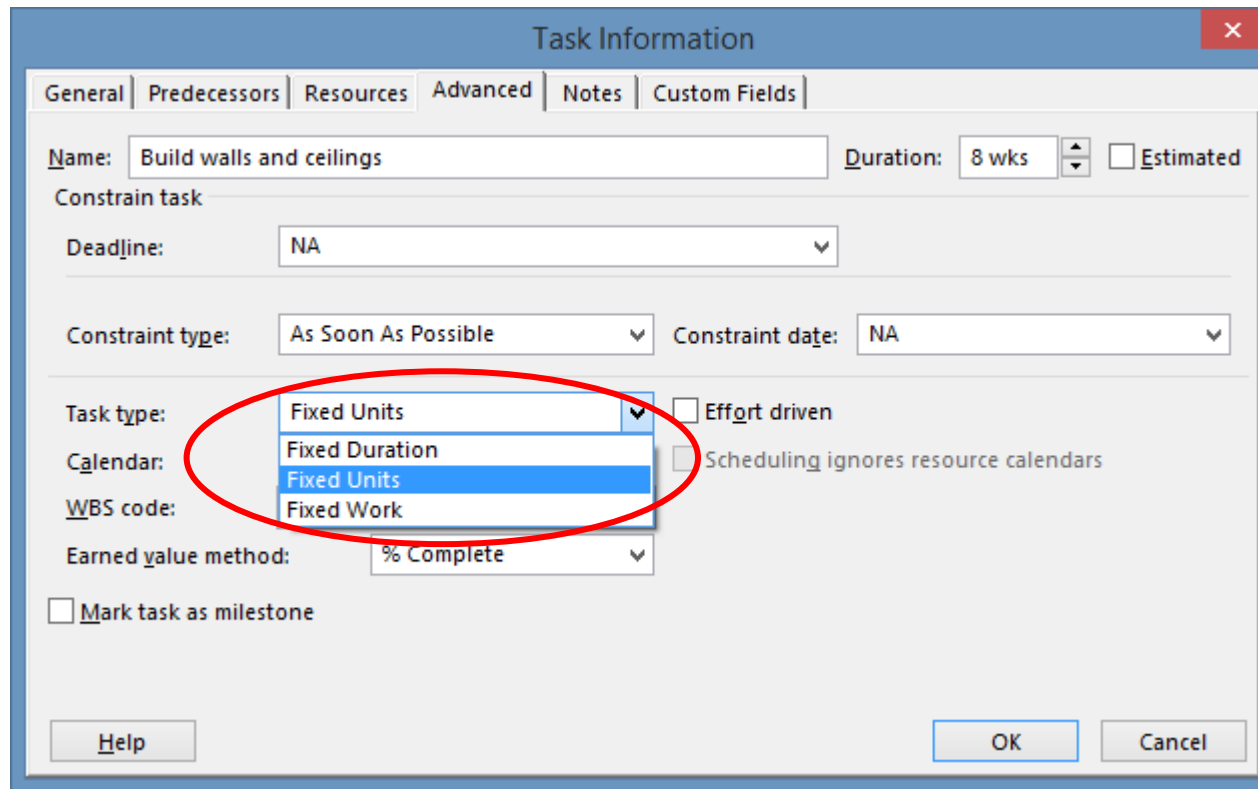
Read more at: <https://support.office.com/en-us/article/Change-the-task-type-Project-uses-to-calculate-task-duration-A9803711-A7F2-4BC5-AFA1-E294FF913616>

By default, the tasks are planned as *fixed units*. This setting assumes the number of people assigned to the task (units) is known and you don't want it to change, even if duration changes. When the work changes on a task, the duration changes, but not the number of people. This *task types* reflect most task realities in any project. For example: You have a *fixed-units* task, with 1 full-time resource unit available for 8 hours each day. You set the task up with a 20-day duration and 160 hours of work. If you find out that another full-time resource can be assigned to the task, *Project* recalculates the task duration. The task now has two units assigned, with a 10-day duration and 160 hours of work.

In the **View** tab, click **Gantt Chart**.



Double-click the task that you are changing, and then click the **Advanced** tab. In the Task type list, click the task type that you want to change.



2.2. Assign resources to tasks

Assign resources to all tasks

In the Gantt Chart, go to the **Resource Names** column. Click the arrow and pick the people to work on the task.

	Task Name	Duration	Start	Finish	Predecessors	Resource Names
1	Build house	117,5 days	Mon 13-03-04	Wed 13-08-14		
2	Stage 1	95 days	Mon 13-03-04	Fri 13-07-12		
3	Build foundation	5 wks	Mon 13-03-04	Fri 13-04-05		
4	Build walls and ceilings	8 wks	Mon 13-04-08	Fri 13-05-31	3	<input checked="" type="checkbox"/> Builders <input type="checkbox"/> Drywallers <input type="checkbox"/> Electricians <input type="checkbox"/> Excavators <input type="checkbox"/> Painters <input type="checkbox"/> Plumbers <input type="checkbox"/> Roofers <input type="checkbox"/> Siding installers <input type="checkbox"/> Window installers
5	Build roof	6 wks	Mon 13-06-03	Fri 13-07-12	4	
6	Do electrical wiring	5 wks	Mon 13-06-03	Fri 13-07-05	4	
7	Do plumbing	4 wks	Mon 13-06-03	Fri 13-06-28	4	
8	Stage 2	52,5 days	Mon 13-06-03	Wed 13-08-14		
9	Install windows	1,5 wks	Mon 13-06-03	Wed 13-06-12	4	
10	Install drywall	3 wks	Wed 13-06-12	Wed 13-07-03	9	
11	Put on siding	4 wks	Wed 13-06-12	Wed 13-07-10	9	
12	Paint house	5 wks	Wed 13-07-10	Wed 13-08-14	11	

If you want to assign a part-time person to a task: select the task, Click the **Resource tab/ Assign Resources**. In the **Assign Resources** box, pick the resources to assign, and click **Assign**. In the example below, *Construction manager* is the resource. By entering 50% in the **Units** box, he's now assigned to work 50 percent on the "Build walls and ceilings" task. By entering 200% in the **Units** box for *Builders* resource, two people are assigned to work on this task (example below).

Task Information ✕

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

Name: Duration: Estimated

Resources:

Resource Name	Assignment Owner	Units	Cost
Builders		200%	\$8 000,00
Construction manager		50%	\$10 000,00

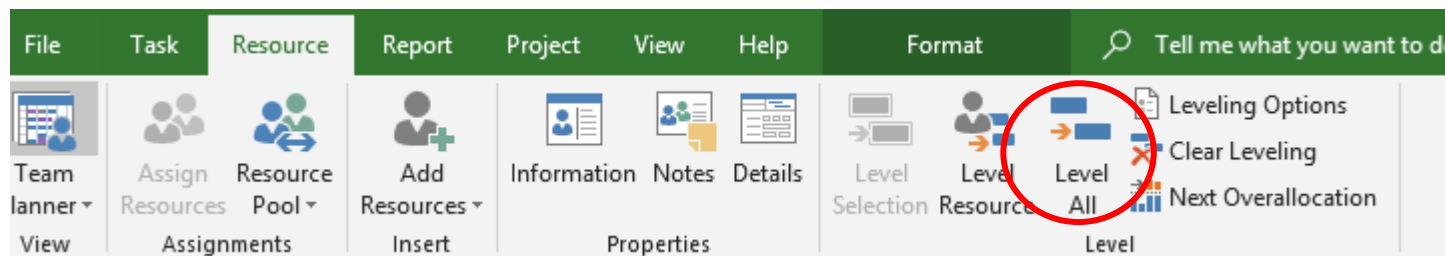
To assign *Material* resources add *Resource Name* and enter the required quantity in the **Units** box. For *Cost* resources, enter the cost in **Cost** box.

3. Leveling resource assignments

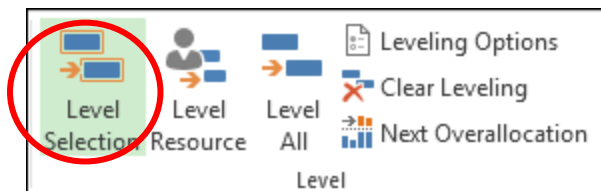
When people in your project are working on too many assignments at the same time (red color in *resource sheet*), you can level the assignments automatically. Project will adjust assignments to a more realistic timeline. Go to **Resource Tab/ Level All**.

	Indicator	Resource Name	Type	Material Label	Work	Initials	Group	Max. Units	Std. Rate	Ovt. Rate	Cost/Use	Accrue At	Available From	Base Calendar	Cod
1	🔴	John	Work		857,89 hrs	Jo	Marketing	100%	\$100,00/hr	\$0,00/hr	\$0,00	Prorated	NA	Standard	
2	🔴	Jane	Work		550,21 hrs	Ja	Marketing	60%	\$100,00/hr	\$0,00/hr	\$0,00	Prorated	#####	Standard	
3	🔴	Wendy	Work		1 061,8 hrs	W	Marketing	75%	\$100,00/hr	\$0,00/hr	\$0,00	Prorated	NA	Standard	
4	🔴	Karen	Work		749,66 hrs	K	Marketing	75%	\$100,00/hr	\$0,00/hr	\$0,00	Prorated	NA	Standard	
5	🔴	Joseph	Work		852,48 hrs	Jos	IT	80%	\$80,00/hr	\$0,00/hr	\$0,00	Prorated	#####	Standard	
6	🔴	Raj	Work		1 214,19 hrs	R	IT	90%	\$80,00/hr	\$0,00/hr	\$0,00	Prorated	NA	Standard	
7		Christopher	Work		3 33 hrs	C	IT	100%	\$80,00/hr	\$0,00/hr	\$0,00	Prorated	NA	Standard	

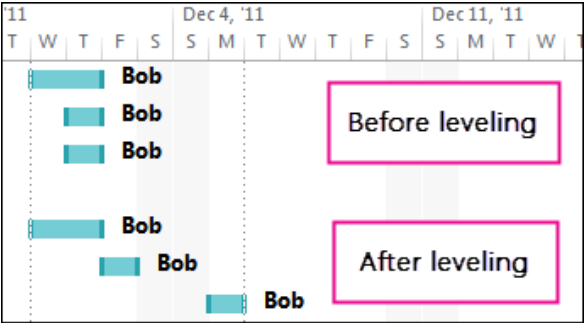
Go to **Resource Tab/ Level All**.



For more control over leveling, you can level selected assignments or specific individuals. Select the tasks with overallocated resources, and click **Resource / Level Selection**. Check the **Indicator** column to see which tasks have overallocated resources.



To level the workload for a specific individual and not everyone, click **Level Resource**. This image shows before and after effects of leveling.



Level all resources in Project.