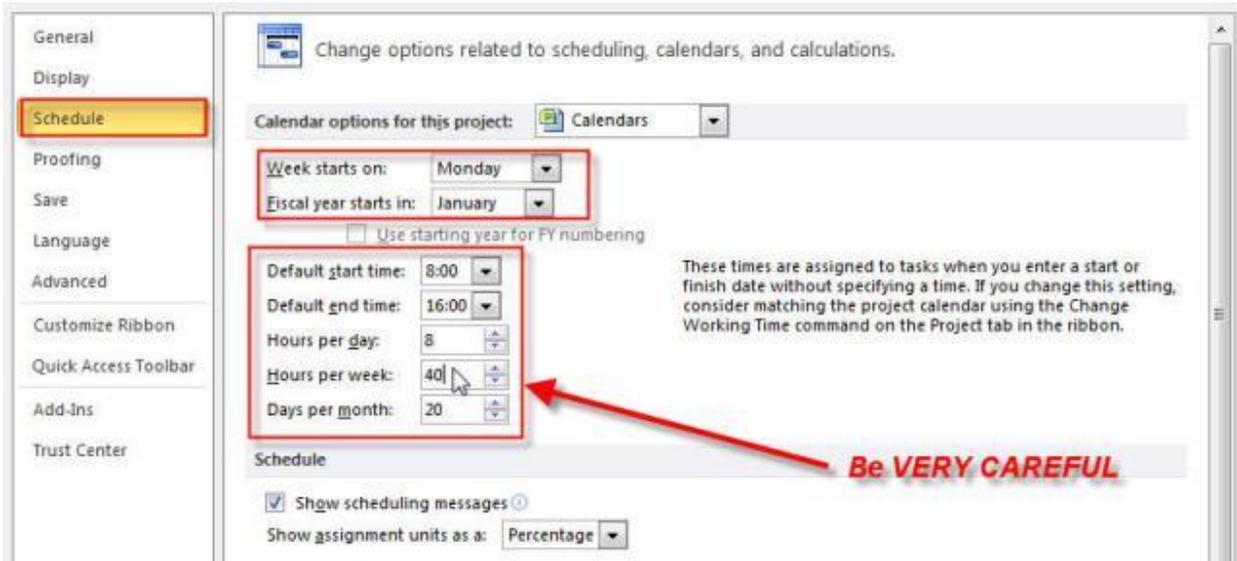


How to Setup Calendars in Microsoft Project

As you know, from previous articles, working time in **MICROSOFT PROJECT** is set up in a Backstage view:



and it says: *When you put task duration in the Duration field in DAYS it will multiply days with 8 hours per day. The task will start at 08:00 and will finish at 16:00. When you put task duration in the Duration field in WEEKS it will multiply weeks with 40 hours per week. Finally, when you put task duration in the Duration field in MONTHS it will multiply months with 20 days per month and with 8 hours per day.*

Defaults for MICROSOFT PROJECT are:

- Weeks starts on: **Monday**
- Fiscal year starts in: **January**
- Default start time: **08:00**
- Default end time: **17:00**
- Hours per day: **8**
- Hours per week: **40**
- Days per month: **20**

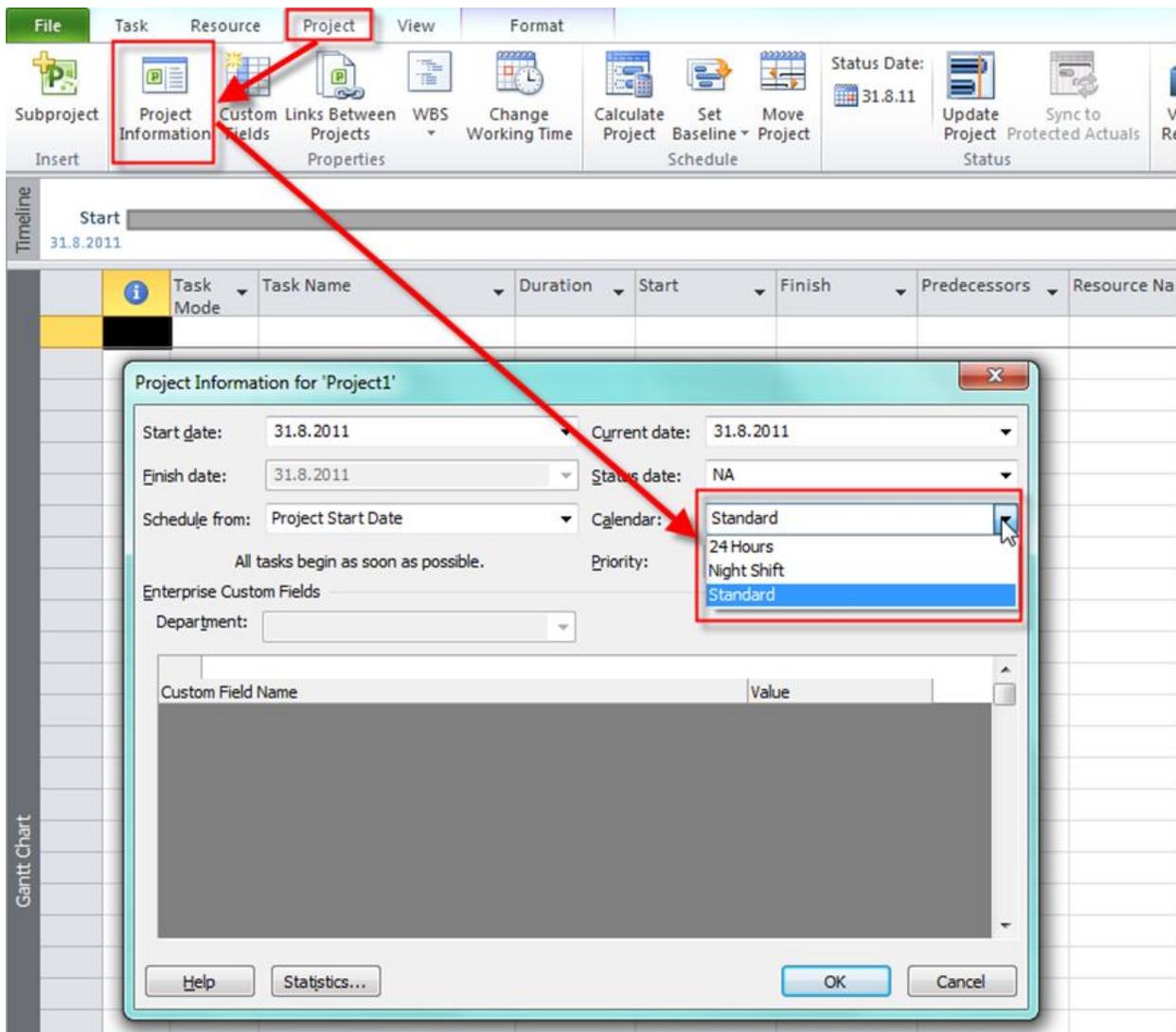
It means that 1 day of duration is work from 08:00 till 17:00 with 1 hour off for a lunch break.

You know that if you want MICROSOFT PROJECT to calculate start and end date you have to be in Auto Scheduled Mode.

In MICROSOFT PROJECT there are three types of Calendars: *Project Calendar*, *Resource Calendar*, and *Task Calendar*.

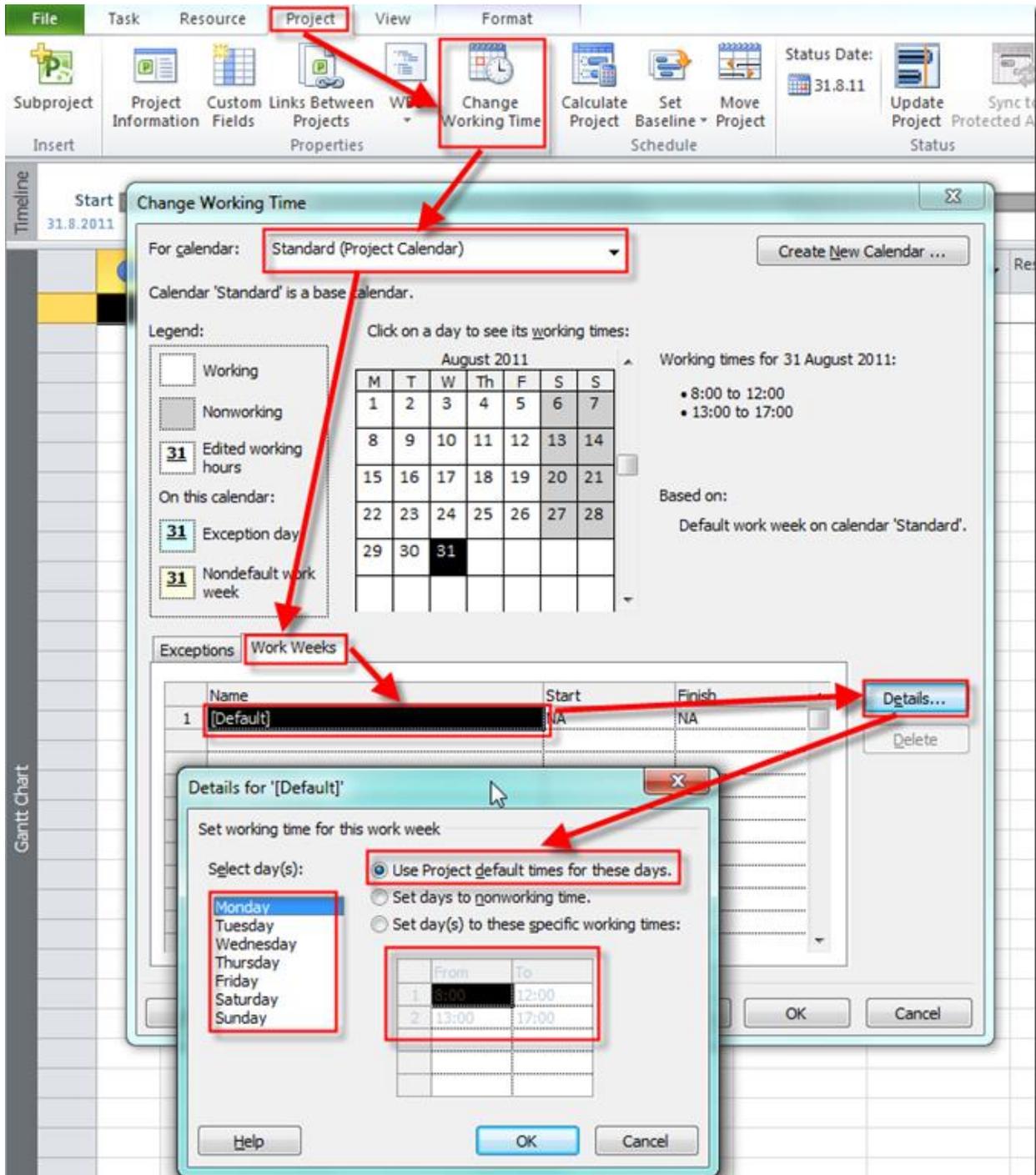
I will explain when, how, and why to use those types of calendars. I will be very detailed. I do not know if will take me 20, 30, or 50 pages to explain everything about Calendars in MICROSOFT PROJECT, but I do not care. I will write, and write, and write until I have covered EVERYTHING about the Calendars. WHY? Take me seriously in this: *“IF YOU DO NOT UNDERSTAND HOW TO WORK WITH CALENDARS IN MICROSOFT PROJECT, YOU WILL NOT BE ABLE TO GET THE EXPECTED RESULTS, AND YOU WILL HATE MICROSOFT PROJECT, BECAUSE YOU WILL THINK THAT IT DOES NOT WORK PROPERLY!”*

There are three “built in” Calendars in MICROSOFT PROJECT: *Standard*, *Night Shift* and *24 hours*. You can see them here:



For the Project, Resources and all Tasks, *Standard Calendar* is *Default*.

Default working time for the *Standard Calendar* is from *Monday to Friday*, and from 08:00 to 12:00, and From 13:00 to 17:00. You can see it here:

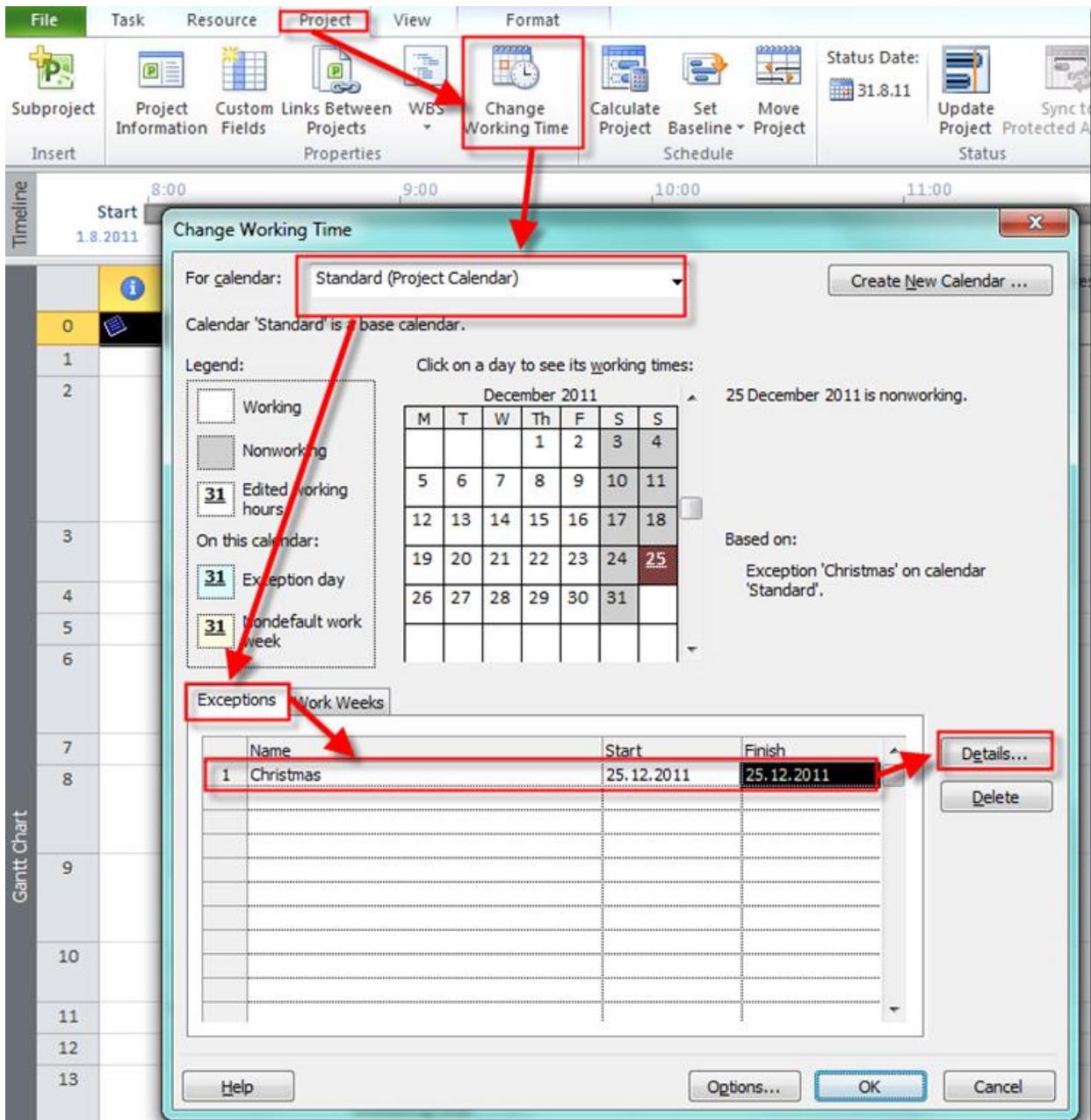


Default working time for the *Night Shift Calendar* is from *Monday to Friday*, and from 23:00 to 03:00, and From 04:00 to 08:00.

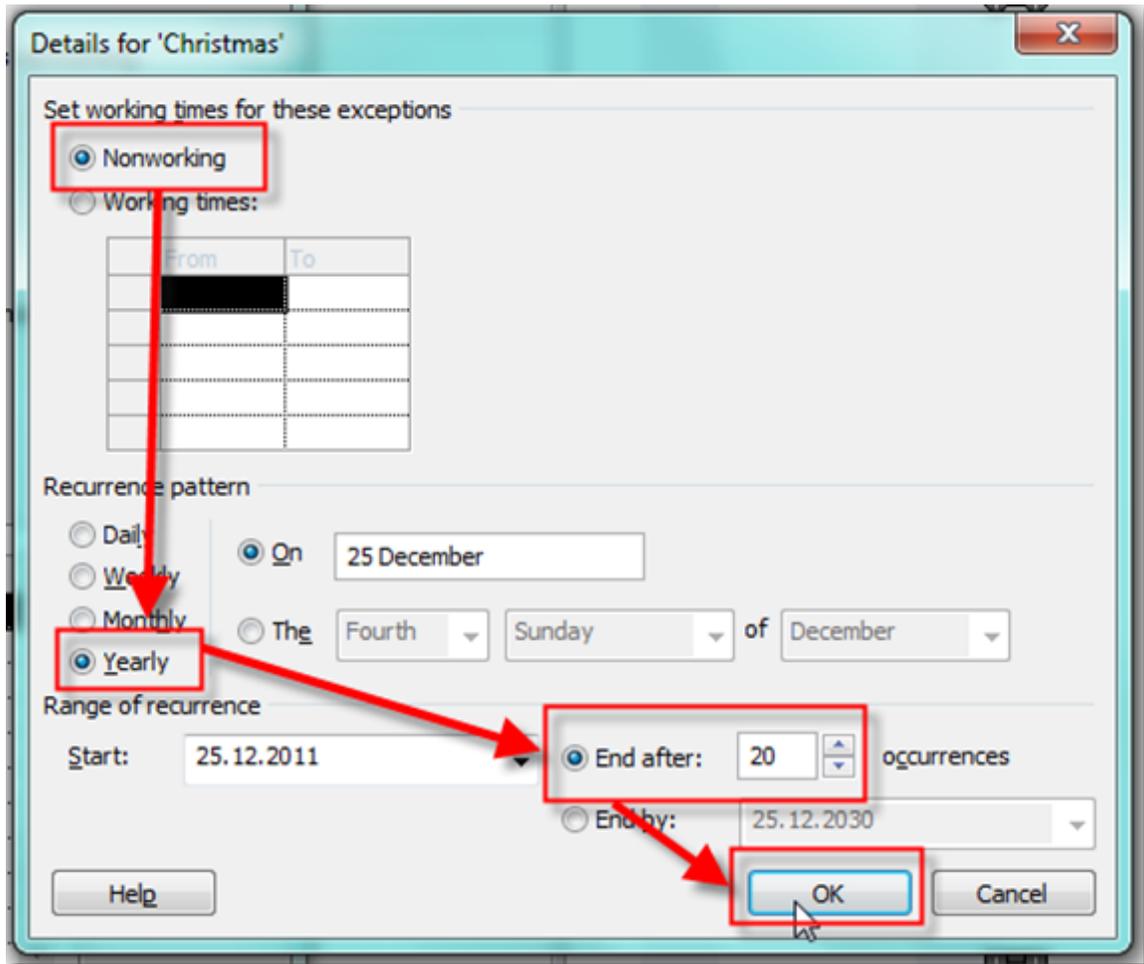
Default working time for the *24 Hours Calendar* is from *Monday to Sunday* (the whole week), and from 00:00 to 00:00.

You can create your own Calendar or change one of the Default Calendars.

OK. Now back to our “Wedding Project”. We do not want to work on Christmas, and New Year’s. So we have to change our Calendar:



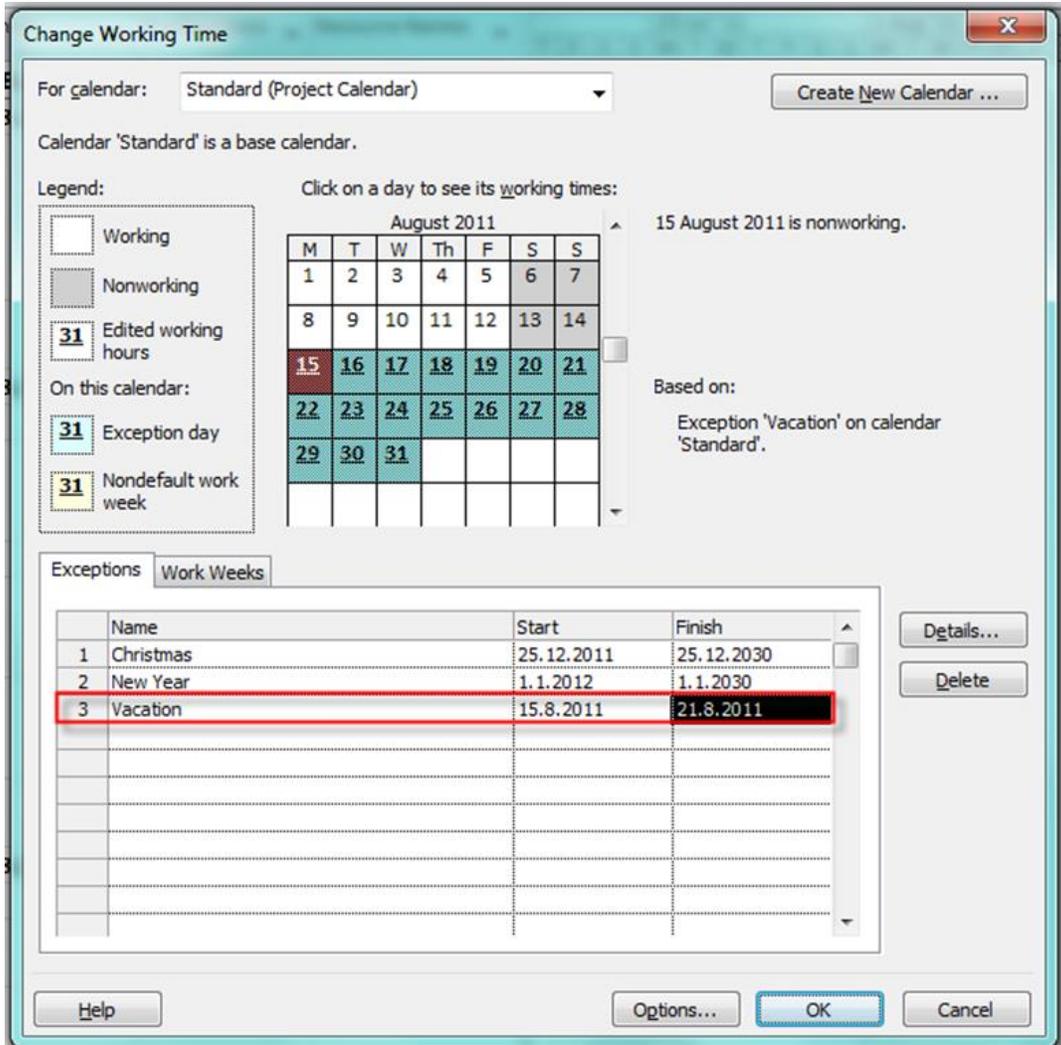
after entering this information you will click on the *Details* button and get:



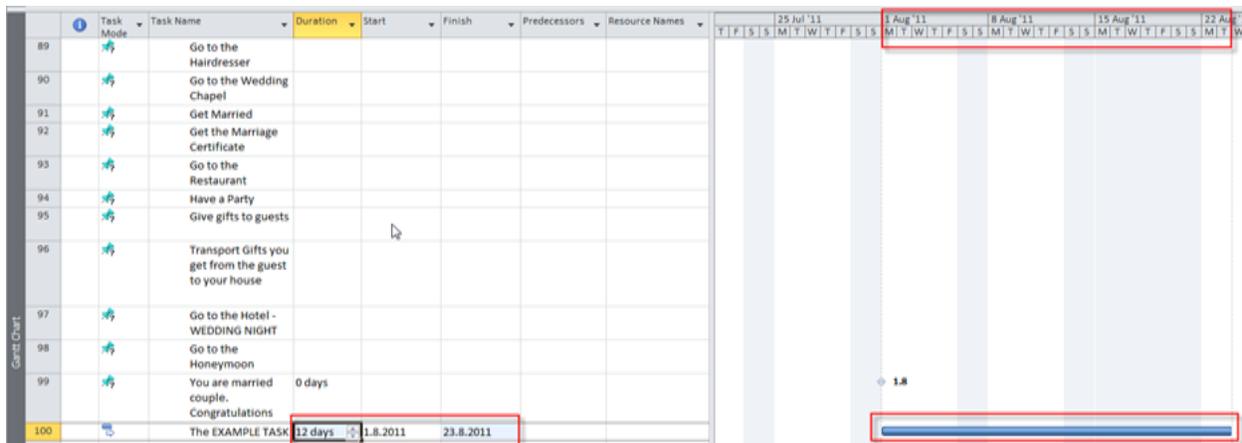
I know that Christmas is a “Recurring” exception, and that it is a Nonworking day and that it recurs every Year. I put 20 in the number of occurrences so I do not have to be worried for the next 20 years about Christmas, and my “Wedding” Project will be finished much, much earlier than 20 years from now (I hope).

I will do the same thing for the New Year!

If you remember, my Project is about to start at 08/01/2011. Since I want to take control over every task, I must be available for my Project all the time. Now, suppose that I am going on vacation from 09/15/2011 to 08/21/2011. I will enter this as a “one time” exception, because I do not want any activity while I’m on my vacation.



What do I get? Well, there will be no activity during this period! I will give you example. I will add a brand-new task in my "Wedding" Project in auto schedule mode, and I will define a 12 day duration and I will get:



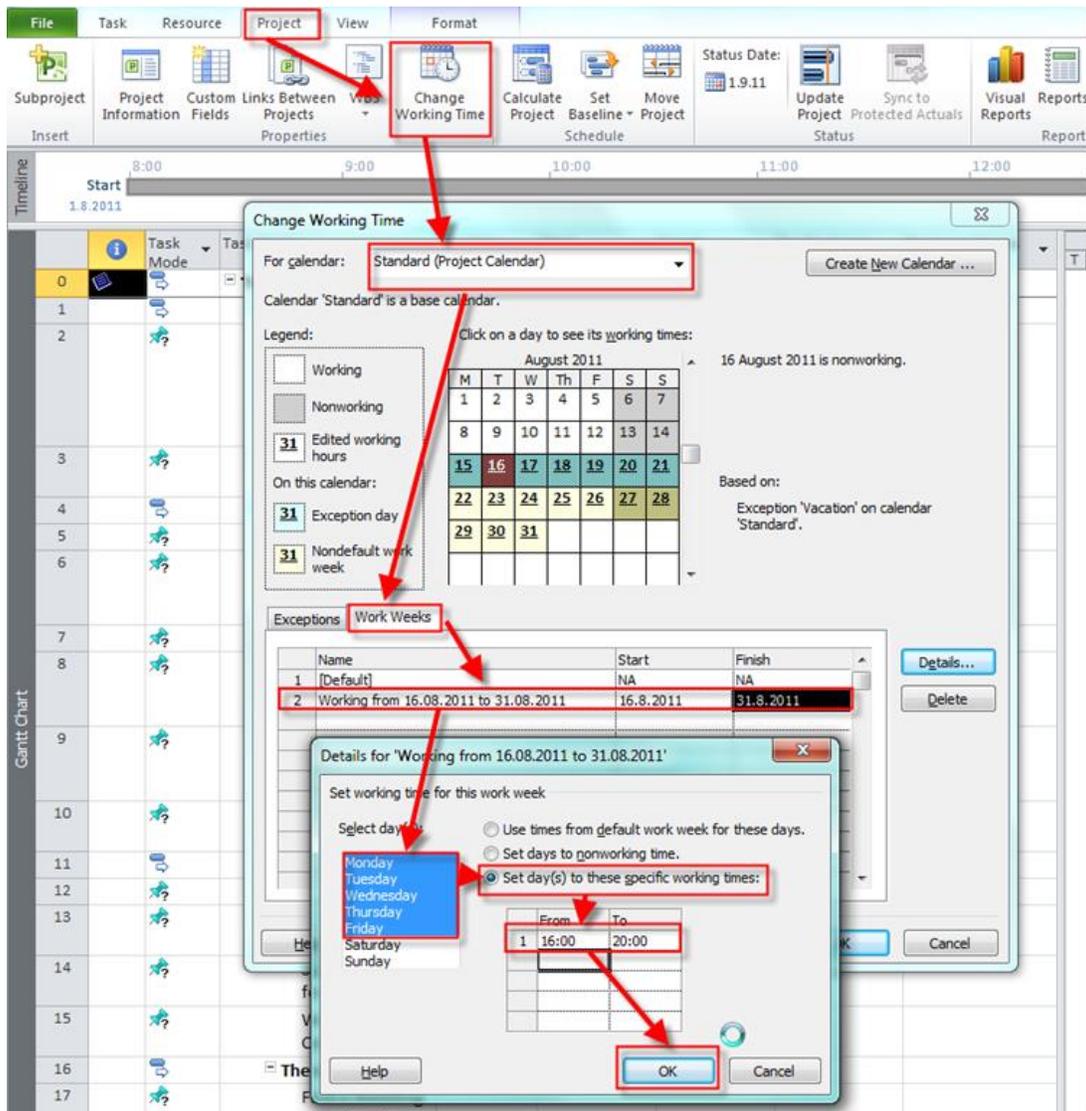
Now if you add the same EXAMPLE TASK with 12 days duration you will get the same Result!

Because this is an EXAMPLE TASK I will delete it!

But what if you have different working times over the period. For example, our “Wedding” Project has working time from Monday to Friday from 08:00 to 12:00 and from 13:00 to 17:00. And it will start at 08/01/2011. Suppose that we want to keep that working time from 08/01/2011 to 08/15/2011, and then from 08/16/2011 to 08/31/2011 we want to work from 16:00 to 20:00, and then from 09/01/2011 go back to the old working time.

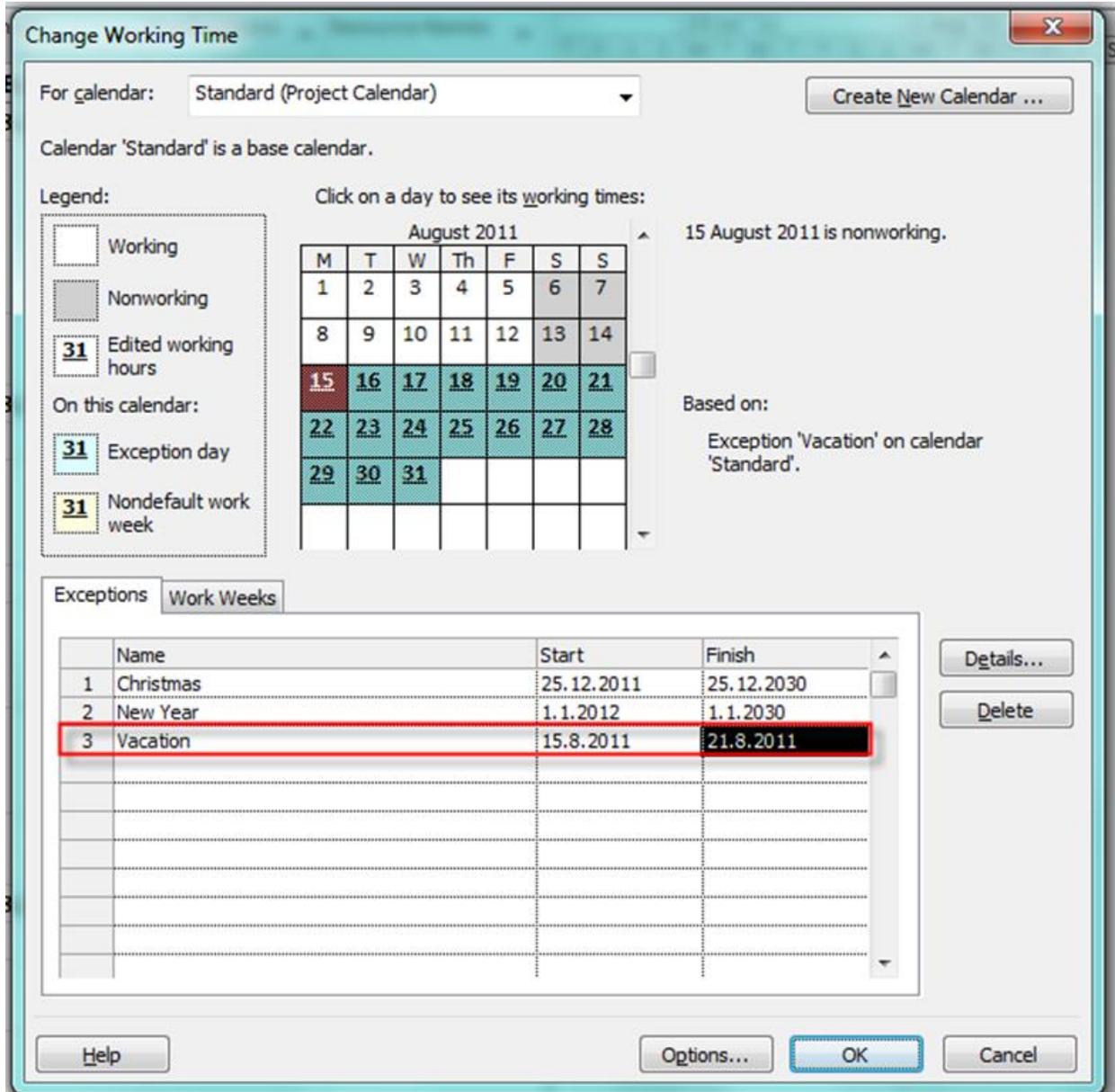
I’ll show you how to do it in my “Wedding” Project, but this is the Example, so I will delete those working times later, because I will not need them in the future

Here it is:



Notice that you CAN NOT change the Default row.

Now concentrate. If you remember from earlier in the article, I made an exception in the Project Calendar for my Vacation time:



I will now, just for example, put an Auto Scheduled Task which will start (by default) at 08/01/2011 (Project start date), and will have 20 days Duration. I will get:

101		Task 1	20 days	1.8.2011	8.9.2011
-----	--	--------	---------	----------	----------

WOW! I have task with 20 days Duration, it will start at 08/01/2011 and it will be finished at **09/08/2011**????

Well, now you understand why it is SO IMPOTRANT to understand MICROSOFT PROJECT calendars. Here is the explanation.

First, when I told that my task will have a 20 days duration, MICROSOFT PROJECT has converted 20 days into *20 days X 8 hours per day = 160 hours*.

We know that one day has 8 hours from here: *On the File Tab click Options, and then Schedule* and you will see:

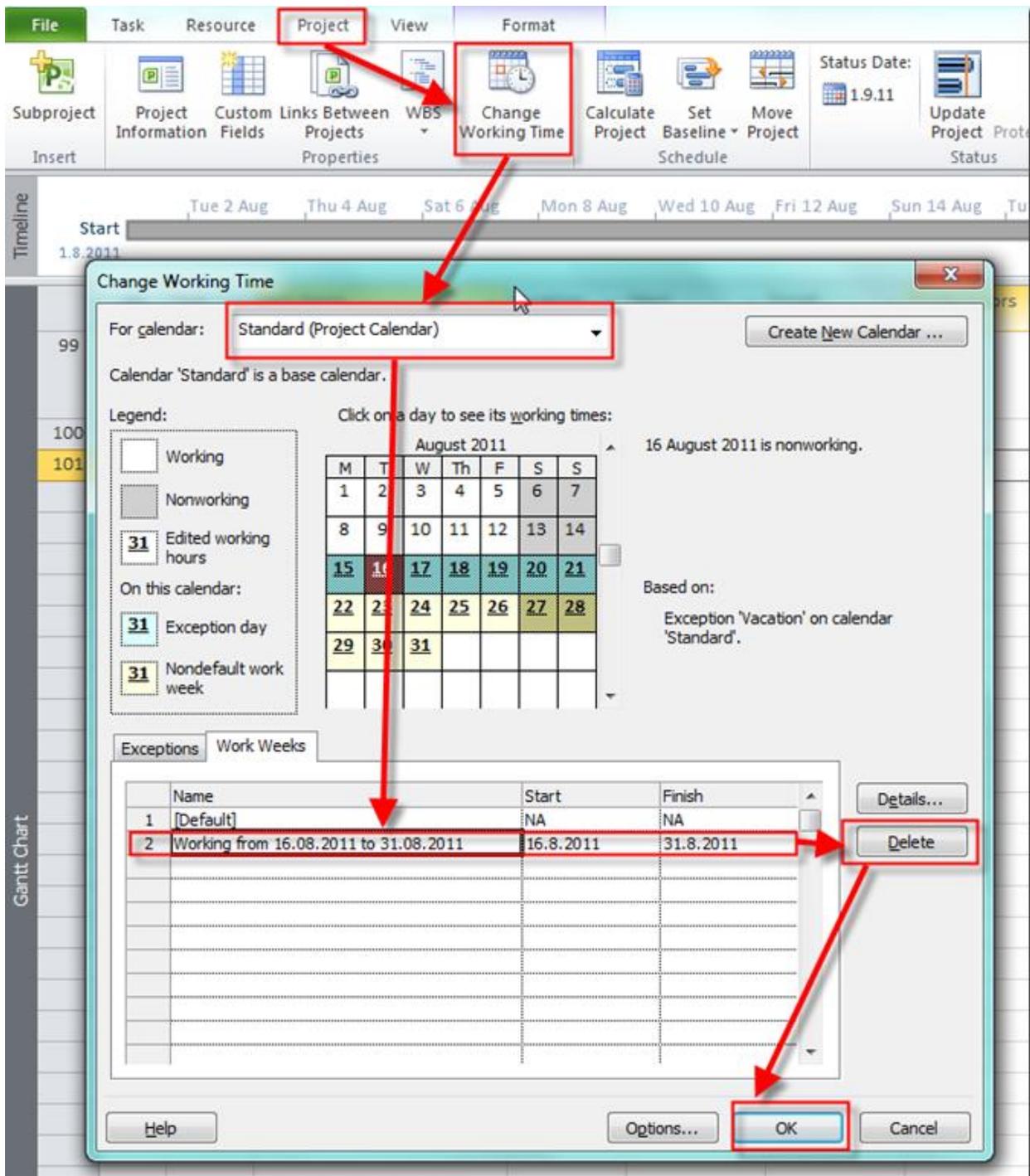


The Task will start at 08/01/2011 (The Project Start date). OK. We need 160 hours. And we will get them:

- From 08/01/2011 (Monday) to 08/05/2011 (Friday) = 5 days × 8 hours / day = **40 hours**
- From 08/08/2011 (Monday) to 08/12/2011 (Friday) = 5 days × 8 hours / day = **40 hours**
- From 08/15/2011 (Monday) to 08/21/2011 (Sunday), there are no activities on the Task because of Calendar Exception (Vacation, remember???)
- From 08/22/2011 (Monday) to 08/26/2011 (Friday) = 5 days × **4 hours** / day = **20 hours**. WHY? Because working time from 08/16/2011 to 08/31/2011 is from 16:00 to 20:00 and it means only 4 hours per day
- From 08/29/2011 (Monday) to 08/31/2011 (Wednesday) = 3 days × **4 hours** / day = **12 hours**. WHY? Read one sentence above
- From 09/01/2011 (Thursday) to 09/02/2011 (Friday) = 2 days × 8 hours / day = **16 hours**. WHY? We are on the old working time!
- From 09/05/2011 (Monday) to 09/08/2011 (Thursday) = 4 days × 8 hours / day = **32 hours**. WHY? You know very well why

And it makes 40+40+20+12+16+32 = 160 hours!

What will happens if I remove this working week from 08/16/2011 to 08/31/2011 from my Project Calendar?



I will get:

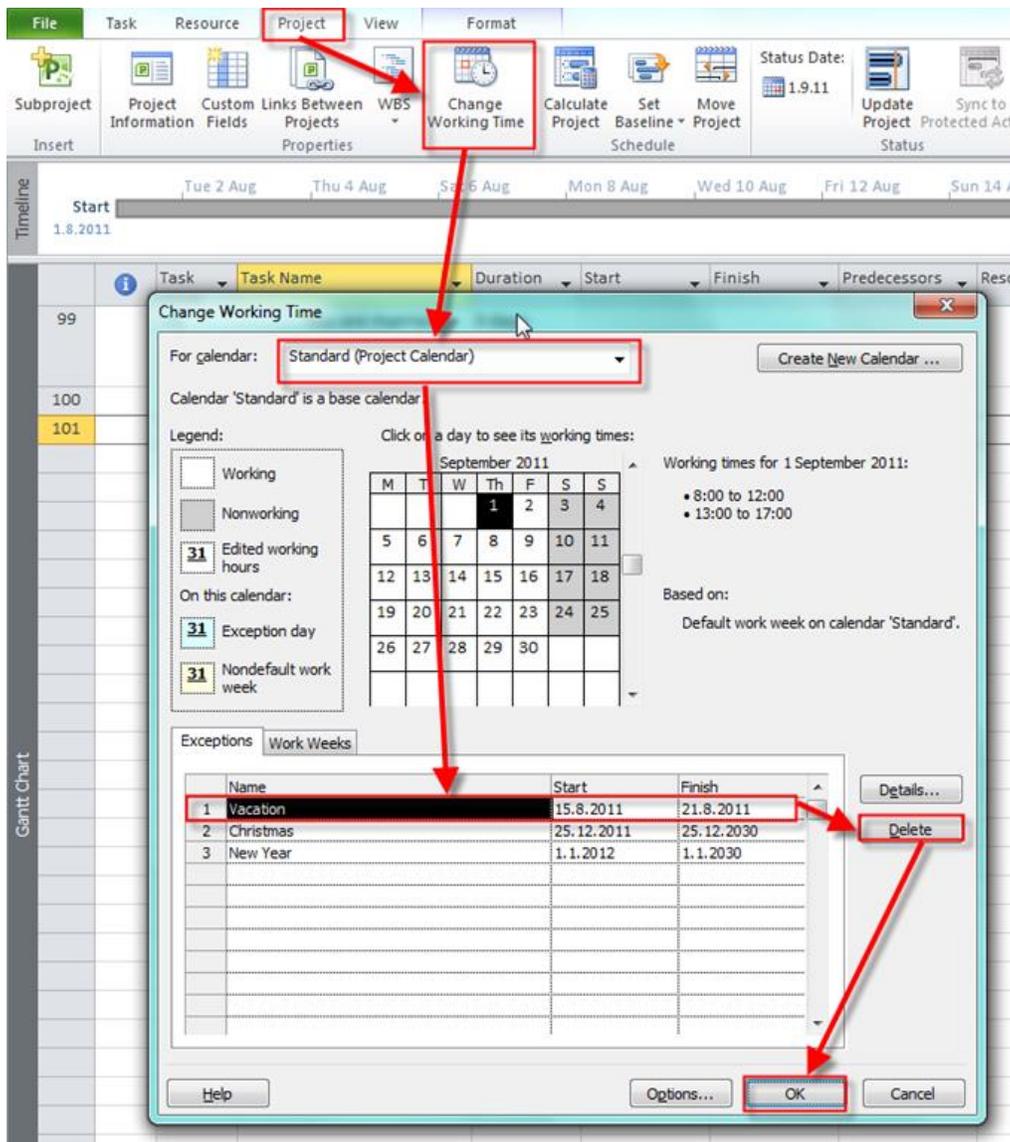
101		Task 1	20 days	1.8.2011	2.9.2011
-----	--	--------	---------	----------	----------

The Finish date is 09/02/2011.

- From 08/01/2011 (Monday) to 08/05/2011 (Friday) = 5 days × 8 hours / day = **40 hours**
- From 08/08/2011 (Monday) to 08/12/2011 (Friday) = 5 days × 8 hours / day = **40 hours**
- From 08/15/2011 (Monday) to 08/21/2011 (Sunday), there are no activities on the Task because of Calendar Exception (Vacation, remember???)
- From 08/22/2011 (Monday) to 08/26/2011 (Friday) = 5 days × **8 hours** / day = **40 hours**. WHY? Because I remove working time from 08/16/2011 to 08/31/2011 which was from 16:00 to 20:00 and only 4 hours per day
- From 08/29/2011 (Monday) to 09/02/2011 (Friday) = 5 days × **8 hours** / day = **40 hours**. WHY? Read one sentence above

And it makes 40+40+40+40 = 160 hours!

Now, I will remove my Vacation from exception from MICROSOFT PROJECT Calendar:



and I will get:

101		Task 1	20 days	1.8.2011	26.8.2011
-----	--	--------	---------	----------	-----------

The Finish date is 08/26/2011.

- From 08/01/2011 (Monday) to 08/05/2011 (Friday) = 5 days × 8 hours / day = **40 hours**
- From 08/08/2011 (Monday) to 08/12/2011 (Friday) = 5 days × 8 hours / day = **40 hours**
- From 08/15/2011 (Monday) to 08/19/2011 (Friday) = 5 days × 8 hours / day = **40 hours**
- From 08/22/2011 (Monday) to 08/26/2011 (Friday) = 5 days × 8 hours / day = **40 hours**

And it makes 40+40+40+40 = 160 hours, again.

At the end of this article, do I have to emphasize that you should be EXTREMELY CAREFUL when you are changing calendars in MICROSOFT PROJECT, or working time???

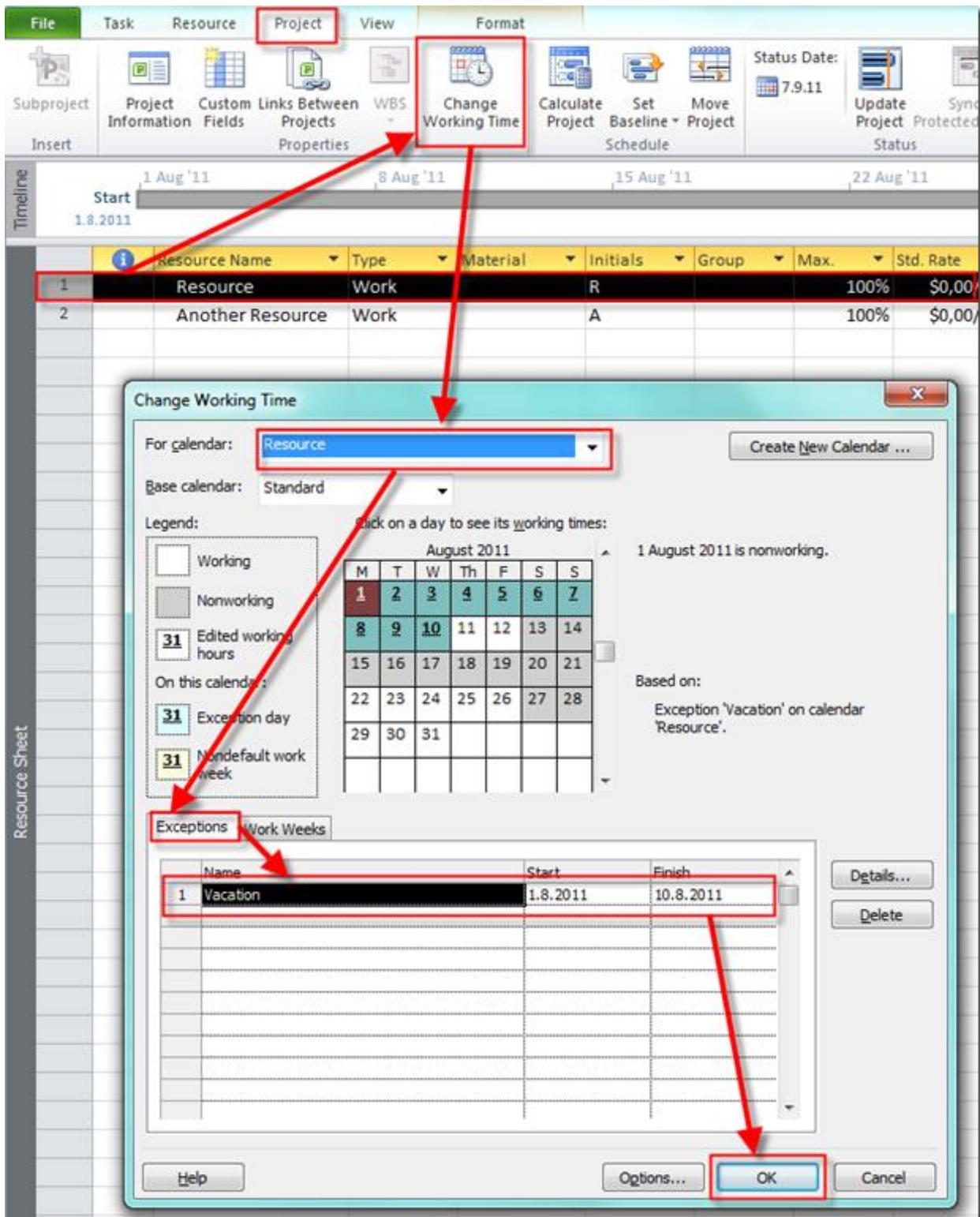
If you think that this is complicated you are hitting the target. BUT, the real pain begins with Resource calendars, and the Task Calendars.

Now I will show you how painful MICROSOFT PROJECT can be if you do not understand how it works! I will add two resources in the Resource sheet. Remember, this article is NOT about Resources and how to manage them. Please refer to other articles regarding Resources after we establish the Schedule for my “Wedding” party. This post is about Resource Calendars:

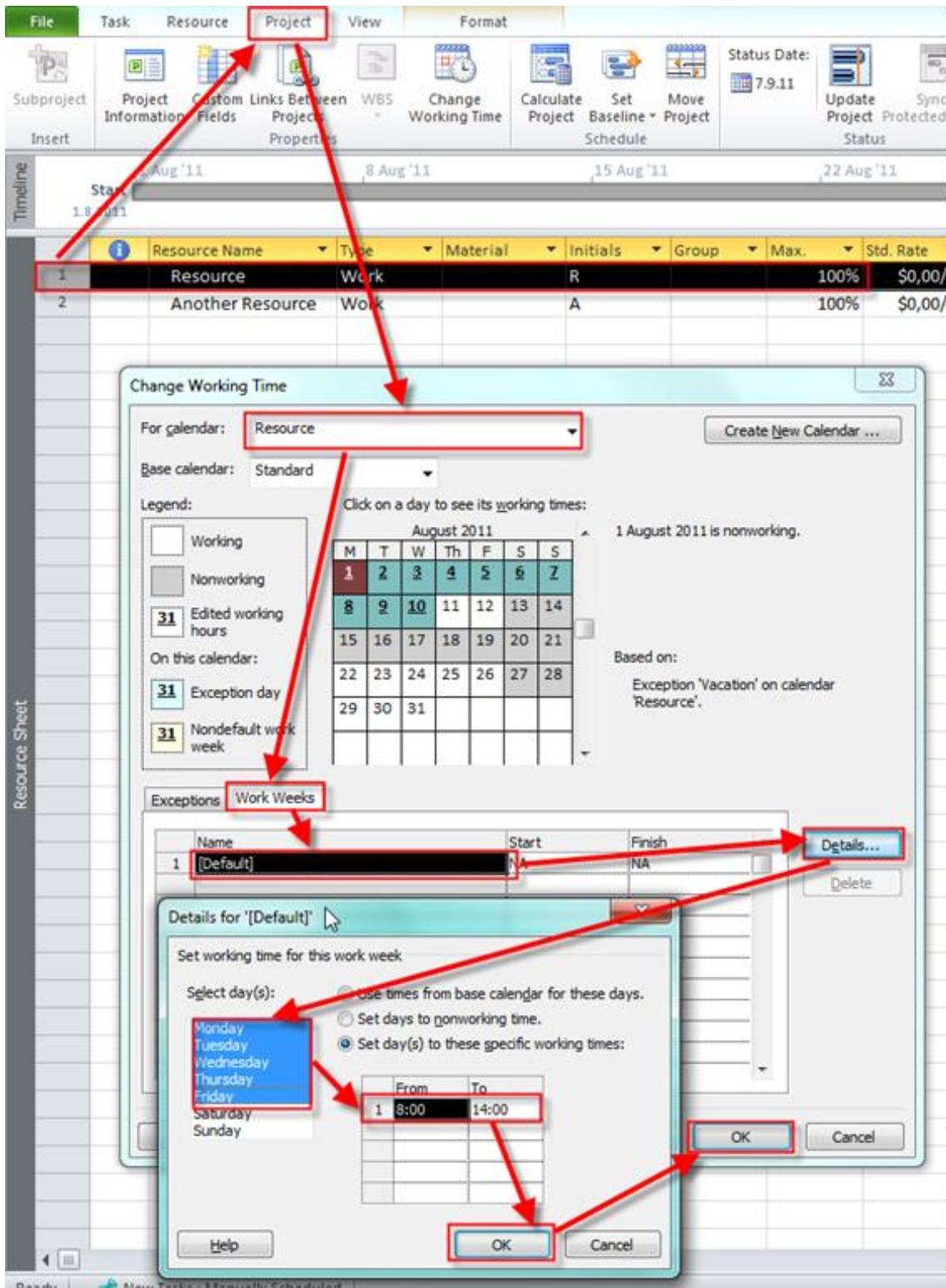
	Resource Name	Type	Material	Initials	Group	Max.
1	Resource	Work		R		100%
2	Another Resource	Work		A		100%

For the *Resource* I want to set up Calendar with:

- Vacation (nonworking time) from 08/01/2011 to 08/10/2011



- working time from 08:00 to 14:00 (working days) e.g. 6 hours per day



I will now, just for example, put an Auto Scheduled Task which will start (by default) at 08/01/2011 (Project start date), and will have 20 days Duration. I will get:

and I will get:

Task Mode	Task Name	Duration	Start	Finish	Predecessors	Resource Names
101	TASK	20 days	11.8.2011	23.9.2011		Resource

Duration is still 20 days, Start date is the Project start date, and the end date is 09/23/2009. How is it possible?

We need 20 days × 8 hours per day = 160 hours to complete the Task, because I told that one working day have 8 hours. Now I will switch to the *Resource Usage View*:

Resource Name	Work	Details
Resource	12 hrs	Work
TASK	160 hrs	Work
Another Resource	0 hrs	Work

As you can see: Our resource will work 6 hours per day, and will start at 08/11/2011. Why? Because he or she is on vacation from 08/01/2011 till 08/10/2011.

We have to work 160 hours to complete the Task. And our resource will work only 6 hours per day. It means:

- From 08/11/2011 (Thursday) to 08/12/2011 (Friday) = 2 days × 6 hours / day = **12 hours**
- From 08/15/2011 (Monday) to 08/21/2011 (Sunday), there are no activities on the Task because of **Project Calendar Exception** (Vacation, remember???)
- From 08/22/2011 (Thursday) to 09/16/2011 (Friday) = 4 weeks × 5 days × 6 hours / day = **120 hours**
- From 09/19/2011 (Monday) to 09/22/2011 (Thursday) = 4 days × 6 hours / day = **24 hours**
- 09/23/2011 (Friday) = **4 hours**

And it makes: 12+120+24+4 = 160 hours!

OK. Now I will REMOVE (REASSIGN) the Resource from my task and after that I will add the *Resource* and *Another Resource*. It is very IMPORTANT that you do not get the same result if you assign multiple resources to the task in one step, or if you assign the resource to the task, and few minutes later you assign another Resource to the same Task.

I will set up the Calendar for the *Another Resource*:

The screenshot shows the Microsoft Project interface with the 'Change Working Time' dialog box open for the resource 'Another Resource'. The dialog box is divided into several sections:

- For calendar:** Another Resource
- Base calendar:** Standard
- Legend:** Working (white), Nonworking (grey), Edited working hours (31), Exception day (31), Nondefault work week (31)
- Calendar Grid:** A calendar for September 2011 showing working times for 7 September 2011: 8:00 to 12:00.
- Exceptions:** A table with a 'Work Weeks' tab. The table has columns for Name, Start, and Finish. The first row is labeled '1 [Default]' with 'NA' in the Start and Finish columns.
- Details for '[Default]':** A sub-dialog box with the following options:
 - Select day(s): Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday
 - Use times from base calendar for these days.
 - Set days to nonworking time.
 - Set day(s) to these specific working times: (Selected)The table below shows the specific working times:

	From	To
1	8:00	12:00

Red arrows indicate the sequence of actions: clicking the 'Project' menu, the 'Change Working Time' button, selecting 'Another Resource' in the resource list, clicking the 'Work Weeks' tab in the exceptions table, and clicking the 'Details' button to open the sub-dialog. The sub-dialog shows the selection of days (Monday-Friday) and the setting of specific working times (8:00 to 12:00).

So the *Another Resource* will have time from 08:00 to 12:00 (working days) e.g. 4 hours per day. Notice, that this Resource has NO EXCEPTIONS (no Vacations).

I will now assign both, the *Resource*, and the *Another Resource* to the Task, and I will do it directly from the *Gantt chart*:



and I will get:



Now the Task has 26.5 days duration, and the End date is 09/30/2011. HOW?

Well, I assigned both resources to the task at the same time. **It means that both resources should work 160 hours!** I know that is complicated but that's how MICROSOFT PROJECT works. Of course, if you change the task type, you can get different result, but we are taking one step at the time.

Because both Resources must work 160 hours on the task, they will work according to the Project Calendars, and exceptions, and Resource Calendars and Exceptions.

Remember this: **If you have the Project Calendar and the Resource Calendar (or Calendars), RESOURCE CALENDAR HAS PRECEDANCE!!!!!!**

So how will the resources work? The *Resource* will work the same as it was explained:

- From 08/11/2011 (Thursday) to 08/12/2011 (Friday) = 2 days × 6 hours / day = **12 hours**
- From 08/15/2011 (Monday) to 08/21/2011 (Sunday), there are no activities on the Task because of **Project Calendar Exception** (Vacation, remember???)
- From 08/22/2011 (Thursday) to 09/16/2011 (Friday) = 4 weeks × 5 days × 6 hours / day = **120 hours**
- From 09/19/2011 (Monday) to 09/22/2011 (Thursday) = 4 days × 6 hours / day = **24 hours**
- 09/23/2011 (Friday) = **4 hours**

And it makes: 12+120+24+4 = 160 hours!

The *Another Resource* will work:

- From 08/01/2011 (Monday) to 08/12/2011 (Friday) = 2 weeks × 5 days × 4 hours / day = **40 hours**
- From 08/15/2011 (Monday) to 08/21/2011 (Sunday), there are no activities on the Task because of **Project Calendar Exception** (Vacation, remember???)
- From 08/22/2011 (Monday) to 08/30/2011 (Friday) = 6 weeks × 5 days × 4 hours / day = **120 hours**

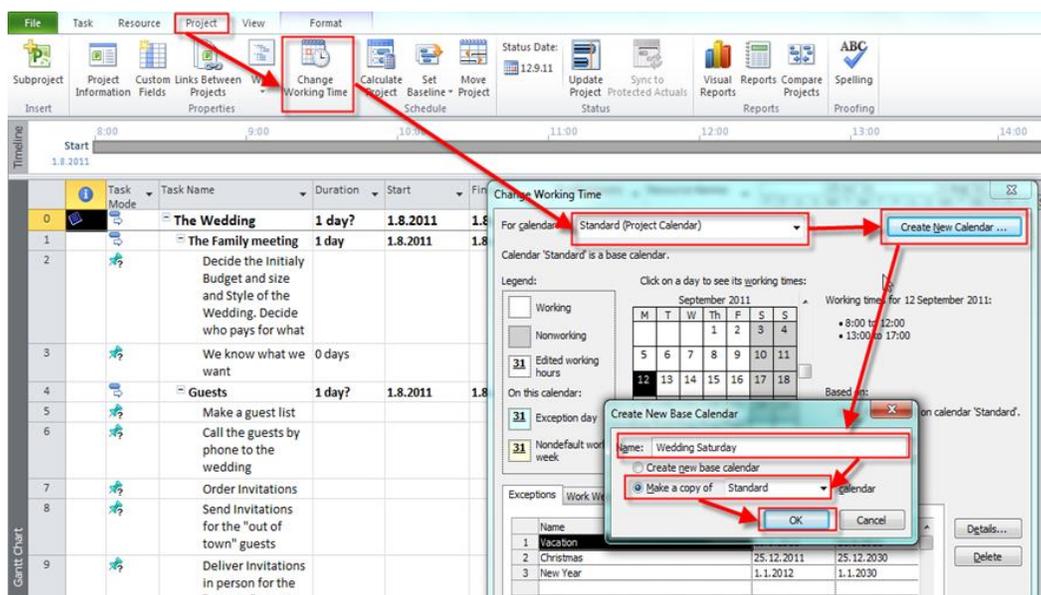
And it makes: 40+120 = 160 hours!

The last Calendar type in MICROSOFT PROJECT is the Task Calendar. Remember this: **If you have the Project Calendar, and the Resource Calendar (or Calendars), and the Task Calendar, TASK CALENDAR HAS PRECEDANCE!**

Why do you need a Task Calendar? I will give you an example on our “Wedding” Project. We do not know when we will have a wedding. We are still in a Planning phase. But what we DO KNOW that the wedding will start on Saturday, and it will finish on Sunday. We do not know WHICH Saturday and Sunday, but we know that the wedding will be on these two days.

When you need a specific Task Calendar, DO NOT use and modify standard Calendars. Create your own, instead. Why? Because if you modify working time on the Standard Calendar, and you use it with different tasks and different resources, you can get unpredictable results. Here is an example. If I modify the standard Calendar in MICROSOFT PROJECT and I put the work time only at Saturday and Sunday, all my tasks will be scheduled to be conducted at these days.

I will now create the two brand-new calendars, and I will name them “Wedding Saturday” and “Wedding Sunday”:



Now I will remove all exceptions from my Calendar:

I will select all Exceptions and I will click on the Delete Button:

Change Working Time

For calendar: **Wedding Saturday**

Create New Calendar ...

Calendar 'Wedding Saturday' is a base calendar.

Legend:

- Working
- Nonworking
- 31** Edited working hours

Click on a day to see its working times:

August 2011

M	T	W	Th	F	S	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

15 August 2011 is nonworking.

Based on:
Exception 'Vacation' on calendar 'Wedding Saturday'.

Exceptions Work Weeks

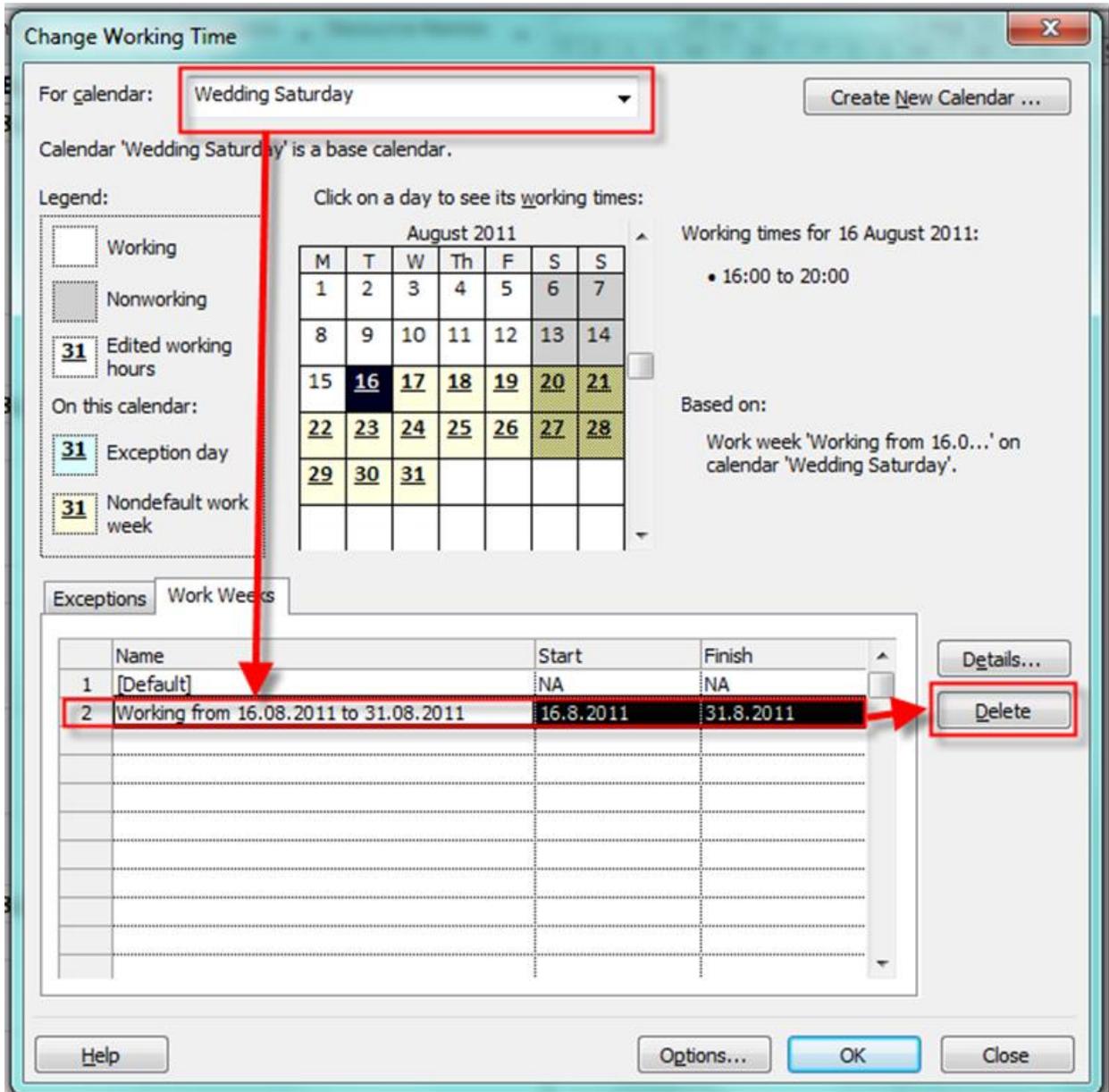
	Name	Start	Finish
1	Vacation	15.8.2011	21.8.2011
2	Christmas	25.12.2011	25.12.2030
3	New Year	1.1.2012	1.1.2030

Details...

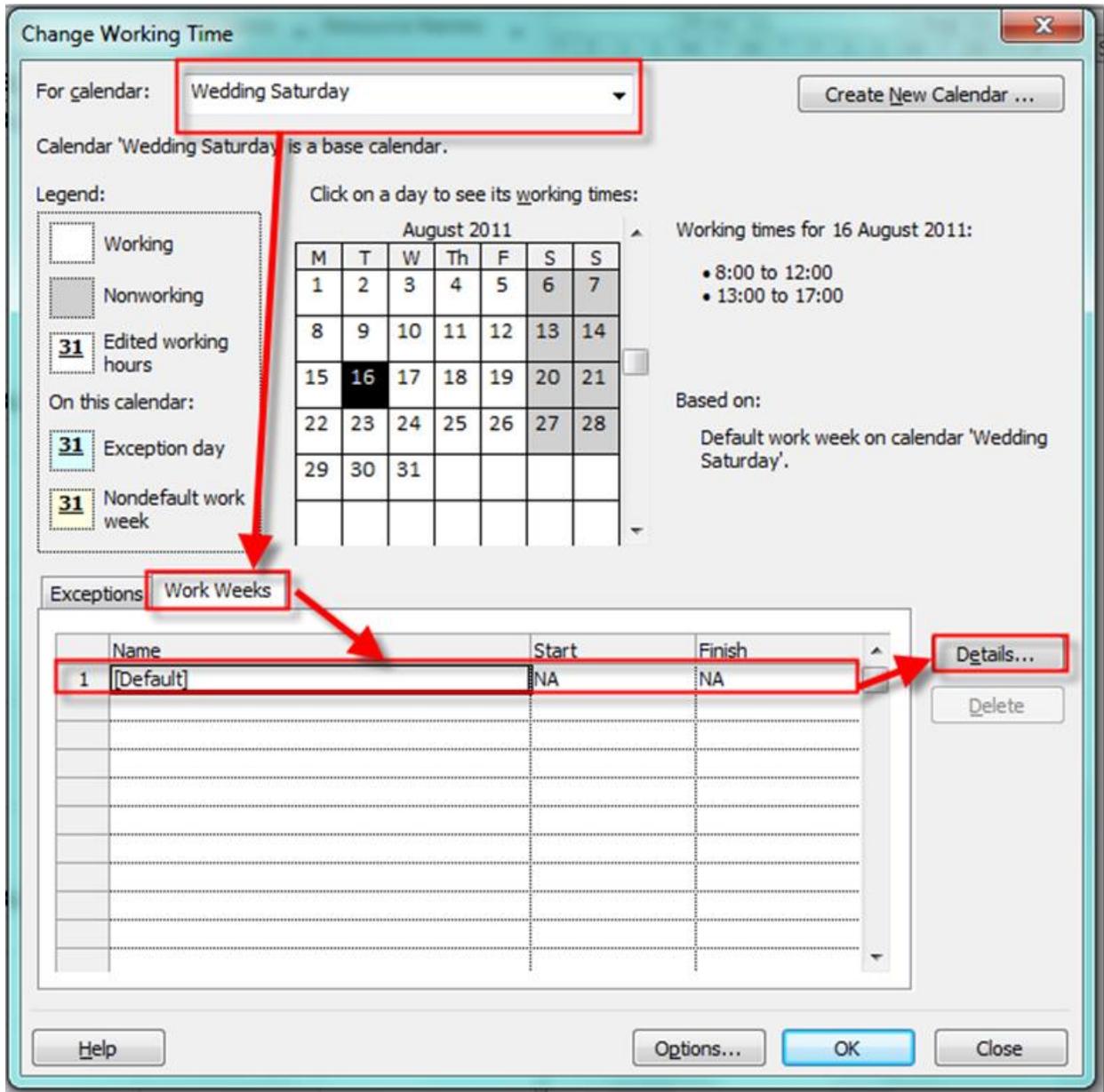
Delete

Help Options... OK Close

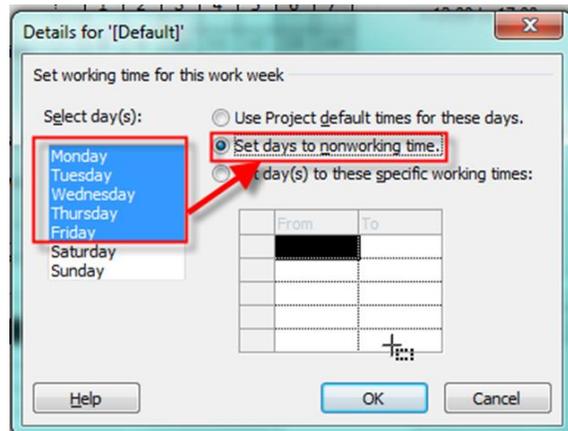
Now, I will set up Work Weeks. First I will delete the Specific work from 08/16/2011 to 08/31/2011. This specific work came from earlier in the article, about Calendars, remember?



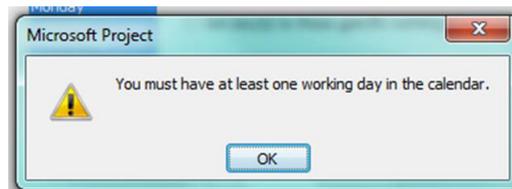
Finally I will set up working and nonworking days for my Calendar:



and then:

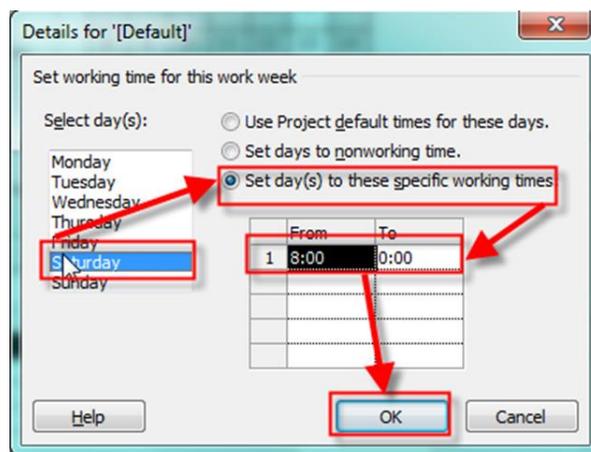


DO NOT CLICK ON THE OK BUTTON! If you try you will get:



Why? Because I set up nonworking days from Monday to Friday, and Saturday and Sunday are nonworking days by default, it means that you have a Calendar without a single working day, and that is highly unlikely to work in the real world.

You can see that there will be no activity from Monday to Friday. But, on Saturday I will set up working time for 08:00 to 24:00 (e.g. 00:00, you cannot put 24:00):



O.K. When will the wedding finish? On Sunday. But if it will start on Saturday it will keep going on Sunday. So I will make Wedding Sunday Calendar, as a copy of Wedding Saturday Calendar:

The image shows the Microsoft Project interface with the 'Change Working Time' dialog box open. The 'Project' tab is selected in the ribbon, and the 'Change Working Time' button is highlighted. The dialog box shows the 'For calendar:' dropdown set to 'Wedding Saturday'. A 'Create New Calendar ...' button is visible. A sub-dialog box, 'Create New Base Calendar', is also open, showing the 'Name:' field set to 'Wedding Sunday' and the 'Make a copy of' radio button selected, with 'Wedding Saturday' in the dropdown menu. The 'OK' button is highlighted in the sub-dialog. The background shows a Gantt Chart with tasks 0 through 14 and a timeline from 8:00 to 12:00.

Timeline: Start 1.8.2011

8:00 9:00 10:00 11:00 12:00

Task Mode

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14

for the Dinner

I will set up working time as a whole day:

The screenshot shows the Microsoft Project interface with the 'Project' menu open and 'Change Working Time' selected. The 'Change Working Time' dialog box is open, showing the 'Wedding Sunday' calendar. The 'Work Weeks' tab is active, displaying a table of work weeks. The 'Details...' button for the '[Default]' work week is highlighted. The 'Details for '[Default]'' dialog box is open, showing the 'Set days to nonworking time' option selected. The 'Select day(s)' list includes Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, and Sunday.

Change Working Time Dialog:

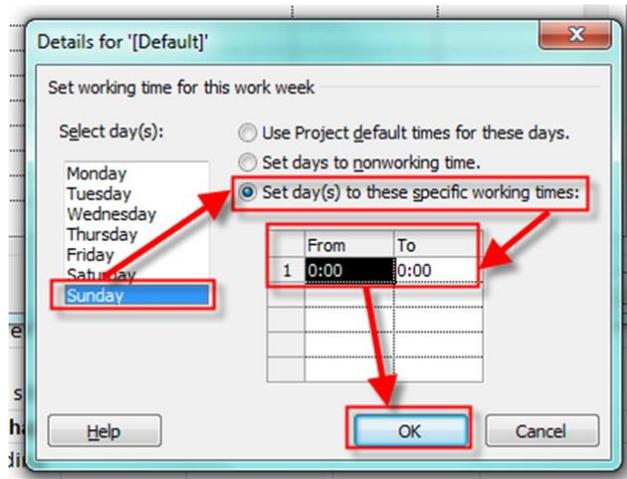
- For calendar: Wedding Sunday
- Calendar 'Wedding Sunday' is a base calendar.
- Legend: Working (white), Nonworking (grey), Edited working hours (31), Exception day (31), Nondefault work week (31)
- Click on a day to see its working times: August 2011 calendar grid with August 16th selected.
- Working times for 16 August 2011: 8:00 to 12:00, 13:00 to 17:00
- Based on: Default work week on calendar 'Wedding Sunday'.
- Exceptions tab: Table with columns Name, Start, Finish, Details...

Name	Start	Finish	Details...
1 [Default]	NA	NA	Details...

Details for '[Default]' Dialog:

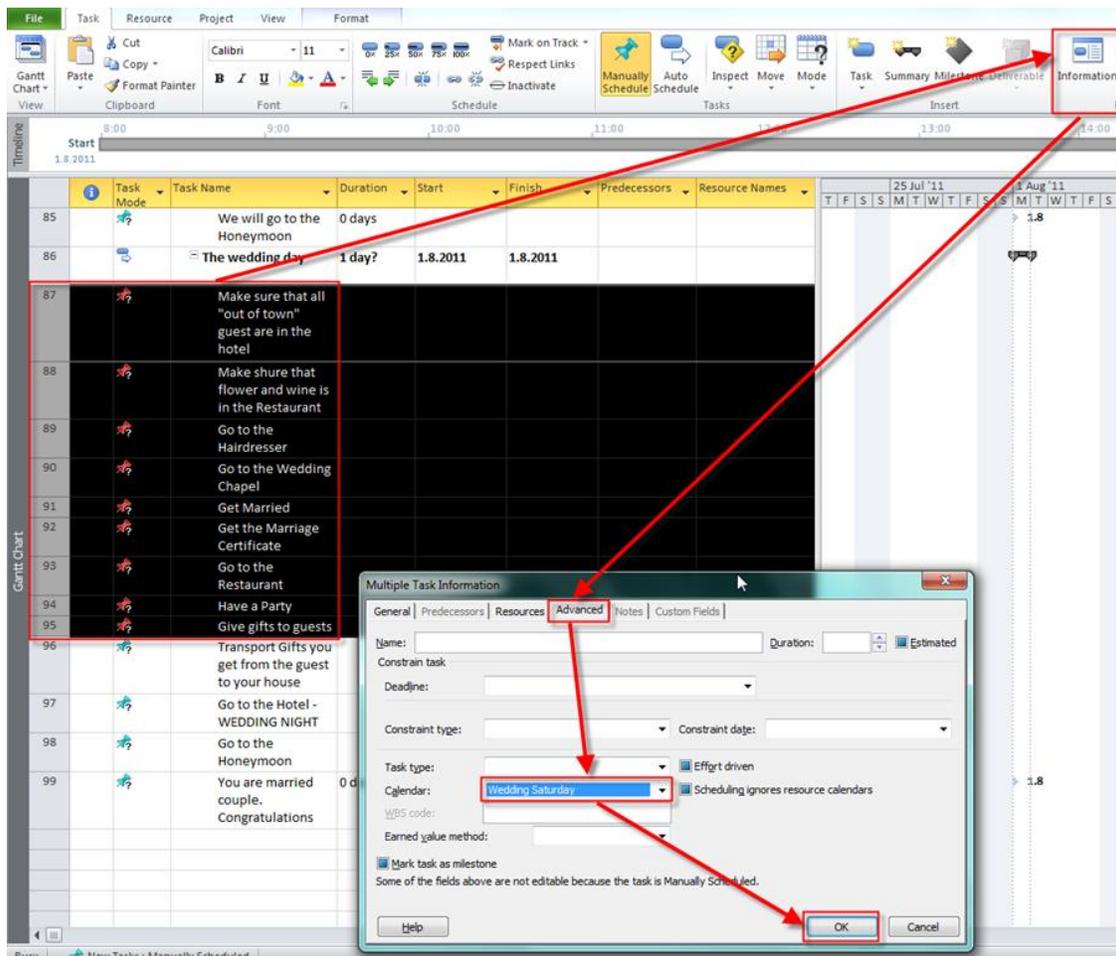
- Set working time for this work week:
- Select day(s): Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday
- Use Project default times for these days. (radio button)
- Set days to nonworking time. (radio button, selected)
- Set day(s) to these specific working times: (radio button)
- From/To table:

and then:



That is it!

Now I will assign specific Calendar to the Specific Task(s).



and I will get:

87			Make sure that all the
88			Make shure that flower and wine is in the Restaurant
89			Go to the Hairdresser
90			Go to the Wedding Chapel
91			Get Married
92			Get the Marriage Certificate
93			Go to the Restaurant
94			Have a Party
95			Give gifts to guests
96			Transport Gifts you

You will notice that I made a mistake, but I did it purposely, and I will correct it when I will establish a schedule, later in my project (not in this article, of course). What is the Mistake? Well, look at a “Have a party” Task. The wedding ceremony will finish, for example, at 18:00 at Saturday, and then the party will start. But it will certainly not finish at Saturday. So this is the mistake. But, as I said, I will correct the mistake later.

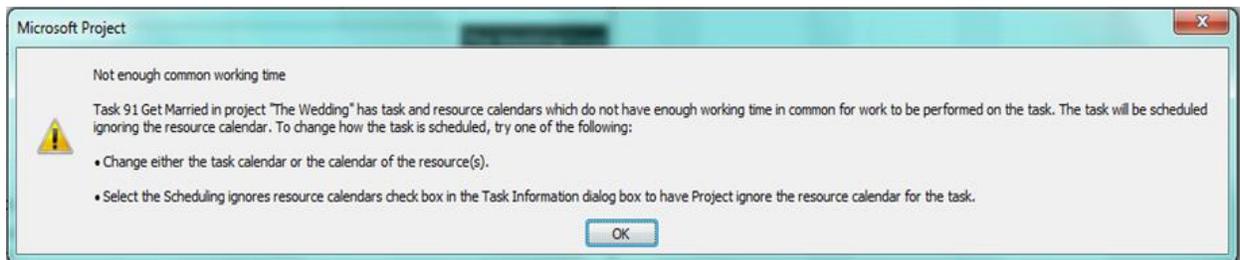
Now, suppose that I have a “Wedding couple” as a Resource with Standard Calendar:

Resource Name	Type	Material	Initials	Group	Max.	Std. Rate	Ovt. Rate	Cost/Use	Accrue At	Base Calendar
The Wedding Couple	Work		T		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard

I will assign that resource to the “Get Married” Task:

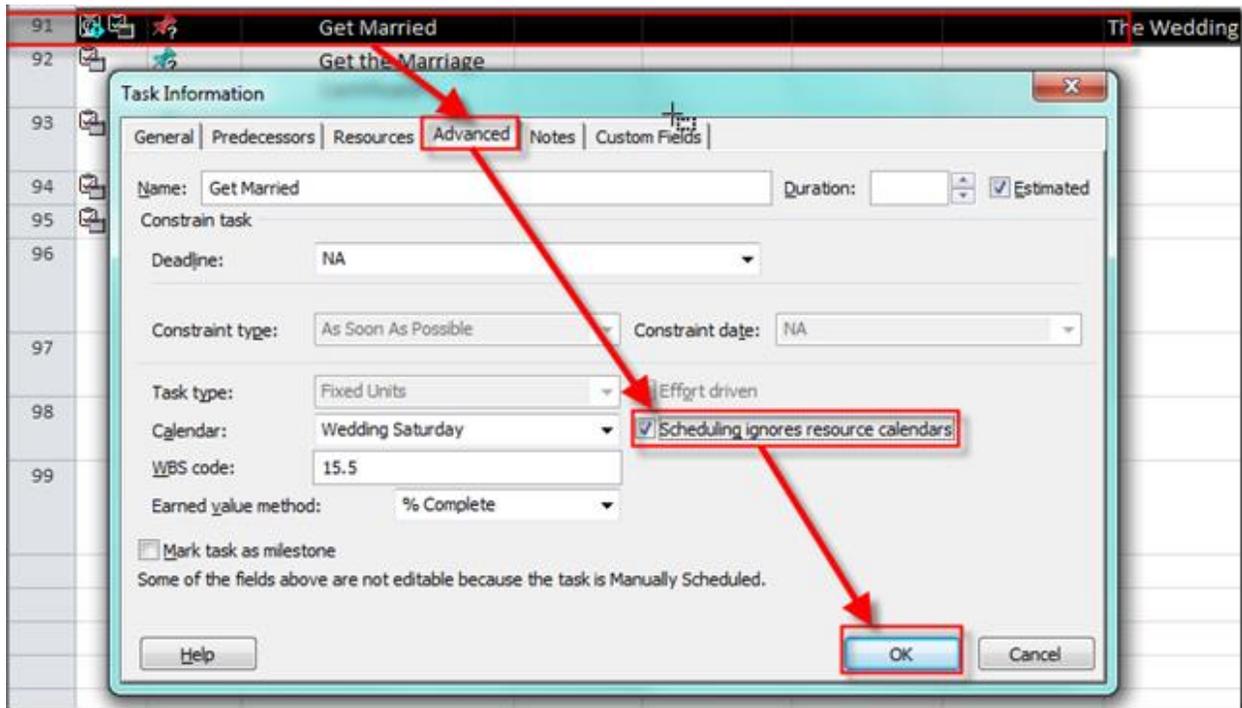
	Task Mode	Task Name	Duration	Start	Finish	Predecessors	Resource Names	T	F	S
87		Make sure that all "out of town" guest are in the hotel								
88		Make shure that flower and wine is in the Restaurant								
89		Go to the Hairdresser								
90		Go to the Wedding Chapel								
91		Get Married								
92		Get the Marriage Certificate					The Wedding Couple			

If I want to move out of this field I will get a warning message:



WHY? Well our "Wedding Couple" Resource has a Standard Calendar assign to them, and it means they are available only at working days (Monday to Friday). One the other hand, the "Get Married" task has a "Wedding Saturday" Calendar and it will be conducted at Saturday. So we have a conflict, because our "Wedding Couple" are not available at their own wedding!!! How to solve this conflict? Easy!

Double click on the Task and then choose:



With “Scheduling ignores Resource calendars” you are avoiding those types of conflicts in MICROSOFT PROJECT, because Microsoft Project assume, that any resource will be available to my task if it has its own Calendar!