Redmine - Defect #26691

N + 1 queries when rendering the Gantt

2017-08-15 03:27 - jwjw yy

Status:	Closed		**Start date:**	
Priority:	Normal		**Due date:**	
Assignee:			**% Done:**	0%
Category:	Performance		**Estimated time:**	0.00 hour
Target version:				
Resolution:	Wont fix		**Affected version:**	

Description

Rails 4.2.7.1
20000 issues in the database
When rendering the GanttsController.show action, it will issue a lot of queries to get the the start_date and due_date of an project like:

```
SELECT MIN(`issues`.`start_date`) FROM `issues` WHERE `issues`.`project_id` = ?  [["project_id", 1436]]
SELECT MAX(`issues`.`due_date`) FROM `issues` WHERE `issues`.`project_id` = ?  [["project_id", 1436]]
SELECT MIN(`issues`.`start_date`) FROM `issues` WHERE `issues`.`project_id` = ?  [["project_id", 1317]]
SELECT MAX(`issues`.`due_date`) FROM `issues` WHERE `issues`.`project_id` = ?  [["project_id", 1317]]
```

Which will make the performance very bad.

My solution is that add cached_due_date and cached_start_date for projects.rb, and while constructing the project_tree, I will use a group query to retrieve the corresponding start_date and due_date for a group of projects, so that they don't need to issue N queries later on.

History

#1 - 2017-08-15 03:42 - Toshi MARUYAMA

- Description updated

#2 - 2017-08-15 04:05 - Go MAEDA

- Status changed from New to Needs feedback

Thank you for pointing out the problem and sharing your work.
Could you provide a patch file instead of project.rb?

See also:

- Patch
- Contribute

#3 - 2017-08-15 06:12 - jwjw yy

- File cache_start_due_date.rb added

here is the patch, what I have done is to calculate the start date and due date in a group queries.

```
start_dates = Issue.where(project_id: projects).group(:project_id).minimum(:start_date)
due_dates = Issue.where(project_id: projects).group(:project_id).maximum(:due_date)
```

#4 - 2017-08-15 07:20 - Go MAEDA

- Status changed from Needs feedback to New

Thank you for providing the patch.

It is interesting but IMHO, the cache should be invalidated when an issue or a version in the project is updated. With the patch applied, Project#start_date and Project#due_date returns a wrong value under some conditions. Please see the following example.

```
project = Project.first
Project.project_tree([project]) {}

p project.due_date
# => Mon, 04 Sep 2017

issue = project.issues.last
issue.update(due_date: Date.new(2017, 9, 30))
p issue.due_date
# => Sat, 30 Sep 2017
p project.due_date
# => Mon, 04 Sep 2017   !!! The value should be "Sat, 30 Sep 2017"
```

#5 - 2017-08-15 08:59 - Go MAEDA

- Category set to Performance

#6 - 2017-08-15 10:34 - Toshi MARUYAMA

- File cache_start_due_date.rb.diff added

#7 - 2017-08-15 10:35 - Toshi MARUYAMA

- File deleted (cache_start_due_date.rb)

#8 - 2017-08-15 17:56 - jwjw yy

If there is only problem, then some updated issue can be applied to project with the update of issue, such as:

```
if issue.project.cached_due_date > issue.due_date
  issue.project.cached_due_date = issue.due_date
end
```

#9 - 2017-08-15 18:18 - jwjw yy

Another thing is that, if the issue is updated, then the GanttsController.index action page needs to be refresh, which will reconstruct the project_tree, so there will no problem for the rendering.

#10 - 2017-08-15 18:59 - Toshi MARUYAMA

- Target version set to 4.1.0

#11 - 2019-03-15 10:16 - Jean-Philippe Lang

- Target version deleted (4.1.0)

jwjw yy wrote:

> Rails 4.2.7.1
> 20000 issues in the database
> When rendering the GanttsController.show action, it will issue a lot of queries to get the the start_date and due_date of an project like:

These queries are executed once per project, not for each one of your 20k issues. I think that having hundreds of projects on the gantt chart is pretty uncommon, I'd prefer to keep it simple and not add this kind of cache at the projet level.

#12 - 2019-03-16 09:16 - Go MAEDA

- Status changed from New to Closed

- Resolution set to Wont fix

Files

project.rb	38.8 KB	2017-08-15	jwjw yy
cache_start_due_date.rb.diff	1.97 KB	2017-08-15	Toshi MARUYAMA