Manual for org-gantt
v0.1

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Contents

1 Introduction

org-gantt defines a custom dynamic block for org mode that can create gantt charts from org files, using headlines and their schedules, deadlines, effort and clock values. The latex package pgfgantt is used to create the gantt charts, thus they are only visible on export into a pdf file.

2 Installation and usage

Open org-gantt.el and run eval-buffer. Put the following line near the top of your org mode file:

```
#+LATEX_HEADER: \usepackage{pgfgantt}
```

3 User Guide

The org-gantt block is delimited by the following lines:

```
#+BEGIN: org-gantt-chart
#+END:
```

Using these delimiters without any parameters will create a custom dynamic block spanning the entire current file. As this document is written in org mode, all examples will use an :id parameter to limit the gantt chart to a specific subtree.

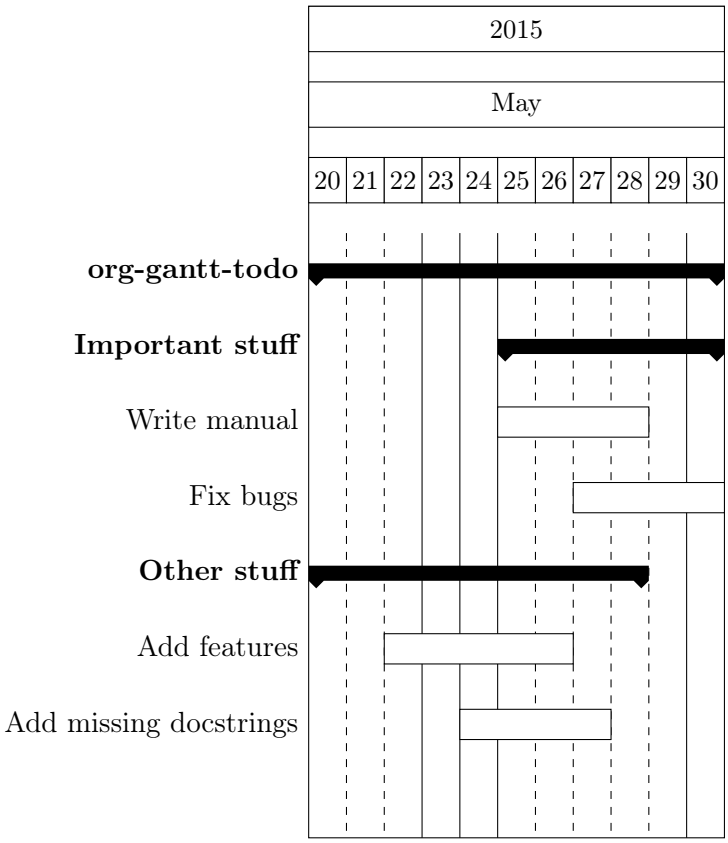
3.1 Deadlines and Schedules

The simplest way of creating a gantt chart is to use hardcoded deadlines and schedules, which are created via *org-deadline* (C-c C-d) and *org-schedule* (C-c C-s)

```
* org-gantt-todo
 :PROPERTIES:
 :ID:       todo-deadlines-schedules
 :END:
** Important stuff
*** Write manual
    SCHEDULED: <2015-05-25 Mo> DEADLINE: <2015-05-28 Do>
*** Fix bugs
   SCHEDULED: <2015-05-27 Mi> DEADLINE: <2015-05-30 Sa>
** Other stuff
   SCHEDULED: <2015-05-20 Mi> DEADLINE: <2015-05-28 Do>
*** Add features
    SCHEDULED: <2015-05-22 Fr> DEADLINE: <2015-05-26 Di>
*** Add missing docstrings
    DEADLINE: <2015-05-27 Mi> SCHEDULED: <2015-05-24 So>

#+BEGIN: org-gantt-chart :id "todo-deadlines-schedules"
#+END
```

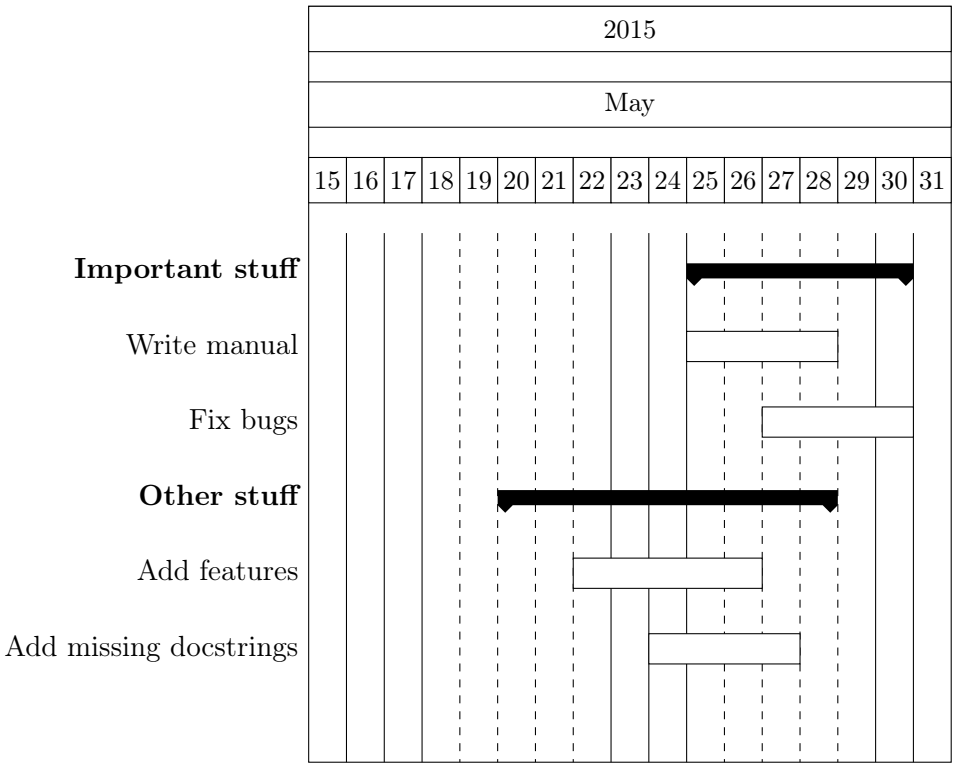
Updating the dynamic block will result in the following gantt chart:



As you can see, org-gantt automatically calculates the deadlines and schedules for superheadlines that do not already have them. Existing dates are not overwritten. Additionally, org-gantt automatically calculates the start and end date for the chart. This can easily be overwritten by using the parameters `:start-date` and `:end-date`. In the previous example, the gantt chart included the top headline, for which the id was given. This is not always desirable, as it results in a single gantt group spanning the entire chart. Set the parameter `:use-id-subheadlines` to `t` in order to use only the subheadlines of the given id. Thus, the dynamic block

```
#+BEGIN: org-gantt-chart :id "todo-deadlines-schedules" \
 :use-id-subheadlines t \
 :start-date "2015-05-15" :end-date "2015-05-31"
#+END
```

creates the following gantt chart:



3.2 Effort

Instead of directly writing down schedules and deadlines, you can use effort estimates. Whenever an effort estimate is present, either the schedule or the deadline can be omitted, and will be automatically calculated from the given effort.

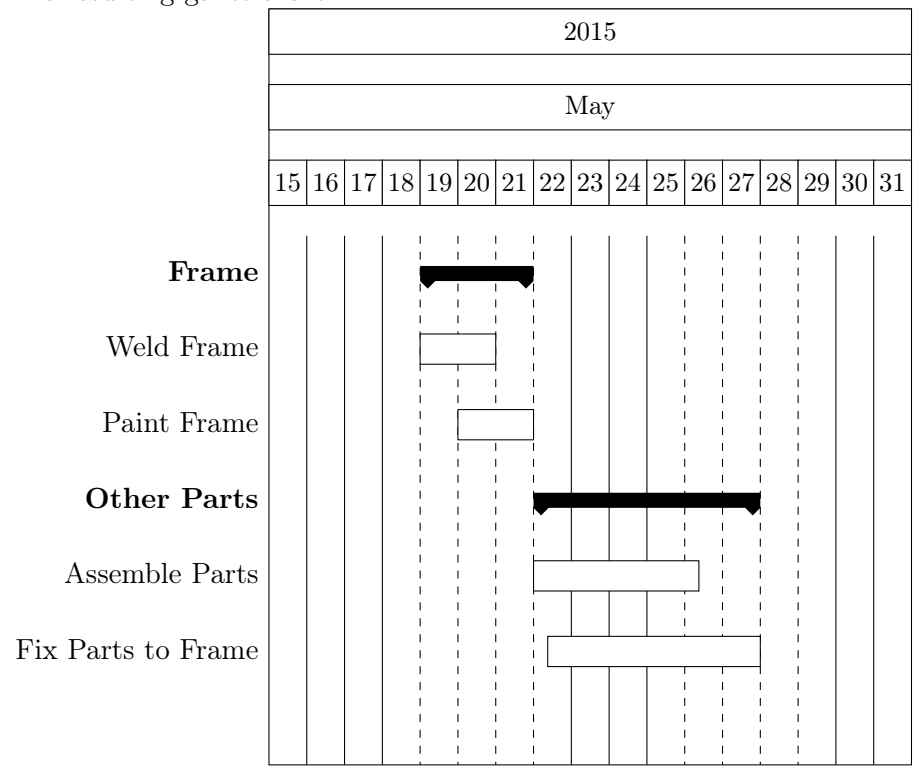
3.2.1 Simple Effort Estimates

Deadline and schedule calculation via effort estimates is done in a sophisticated manner: It takes into account the hours of work per day, and work-free weekends. This works in both directions, meaning that if `:hours-per-day` is `8` (the default value), an effort estimate of `2d` is equivalent to `16:00` and both will result in a full two days on the gantt chart:

```
* COMMENT Build Bike
   :PROPERTIES:
   :ID:       effort-src
   :END:
** Frame
*** Weld Frame
   SCHEDULED: <2015-05-19 Di>
    :PROPERTIES:
    :Effort:   16:00
    :END:
*** Paint Frame
    DEADLINE: <2015-05-21 Do>
```

```
      :PROPERTIES:
      :Effort:   2d
      :END:
  ** Other Parts
  *** Assemble Parts
      SCHEDULED: <2015-05-22 Fr>
      :PROPERTIES:
      :Effort:   19:00
      :END:
  *** Fix Parts to Frame
      DEADLINE: <2015-05-27 Mi>
      :PROPERTIES:
      :Effort:   3d 5:00
      :END:
#+BEGIN: org-gantt-chart :id "effort-src" :use-id-subheadlines t \
:start-date "2015-05-15" :end-date "2015-05-31"
#+END
```

The resulting gantt chart:



Note that org-gantt correctly displays efforts that are not full days. Additionally, weekend days are not counted as workdays. When calculating deadlines and schedules, weekend days are spanned in addition to the estimated effort.

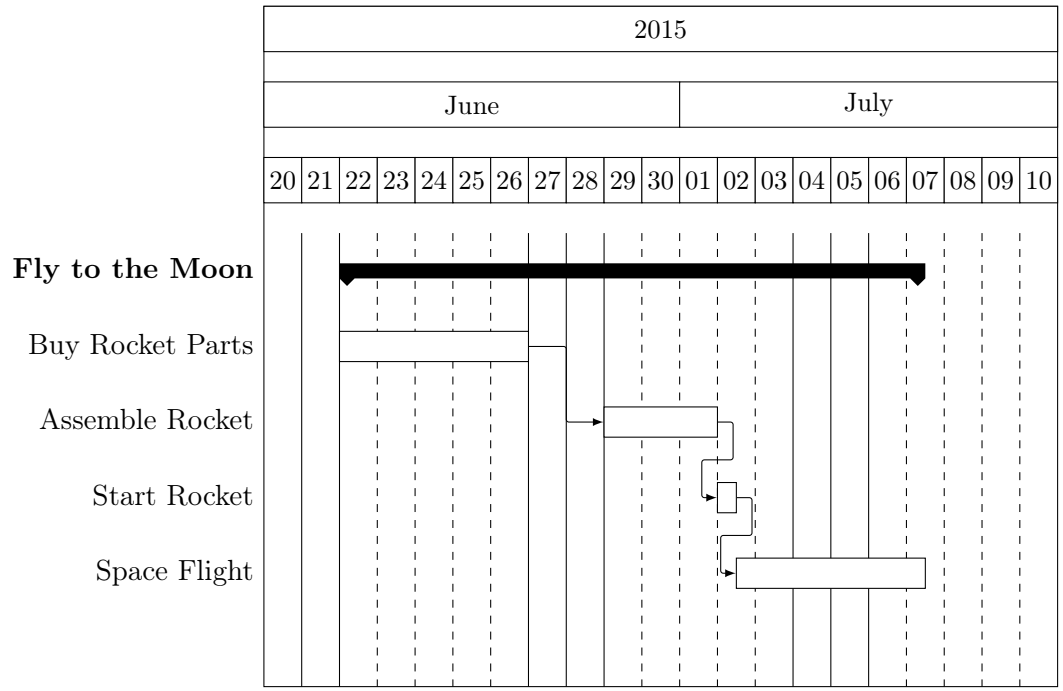
3.2.2 Effort Estimates and Ordered Headlines

Headlines can be marked as ordered, meaning that a subtask can only be started once the previous subtask has been finished. Due to this dependency even more deadlines and schedules can be calculated automatically: If every subtask has an effort estimate, a single deadline or schedule is enough to calculate all other times. The deadline or schedule can be attached to the supertask or to any of the subtasks.

```
  * COMMENT Ordered Task
    :PROPERTIES:
    :ID: ordered-space-src
    :ORDERED:  t
    :END:
  ** Fly to the Moon
     SCHEDULED: <2015-06-22 Mo>
     :PROPERTIES:
     :ORDERED:  t
     :END:
  *** Buy Rocket Parts
      :PROPERTIES:
      :Effort:   5d
      :END:
  *** Assemble Rocket
      :PROPERTIES:
      :Effort:   3d
      :END:
  *** Start Rocket
      :PROPERTIES:
      :Effort:   4:00
      :END:
  *** Space Flight
      :PROPERTIES:
      :Effort:   3d
      :END:

#+BEGIN: org-gantt-chart :id "ordered-space-src" :use-id-subheadlines t  \
:start-date "<2015-06-20 Sa>" :end-date "<2015-07-10 Fr>"
#+END
```

Results in the following gantt chart:



This chart demonstrates that the start of a follow-up task is shifted to the following Monday, if the previous task ends exactly at the start of the weekend. Additionally, it demonstrates how follow-up days start on the same day, if `hours-per-day` still leaves time during that day, but start on the next day, if the previous task takes the entirety of the previous day.

3.3 Progress

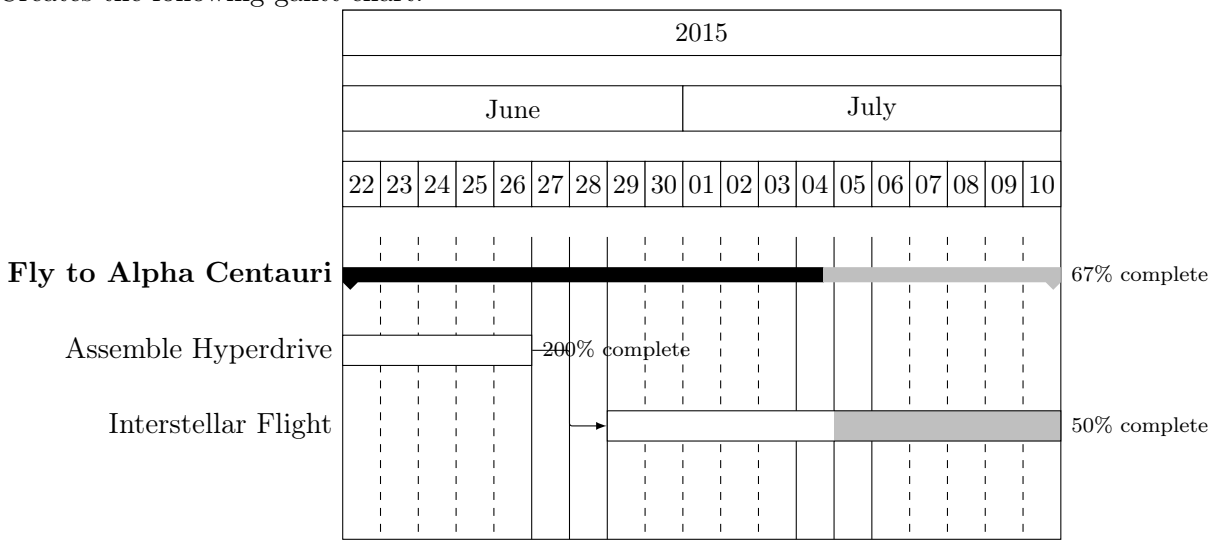
org-gantt can use `clocking` to calculate the progress on each item. However, the progress is currently simply calculated as the ratio of clocked time to estimated time, and thus does not constitute a realistic estimation of the real progress of a specific task. Nevertheless, it can be used to visualize progress on specific tasks. To show progress, use the parameter `:show-progress`. Setting it to `t` will show the progress on all tasks. Setting it to `if-clocksum` will show progress only for those tasks with a clocksum, i.e. tasks that have been clocked, or that have subtasks that have been clocked.

```
* COMMENT Using Effort
   :PROPERTIES:
   :ID: clock-space-src
   :END:
** Fly to Alpha Centauri
   SCHEDULED: <2015-06-22 Mo>
   :PROPERTIES:
   :ORDERED:  t
   :END:
*** Assemble Hyperdrive
    CLOCK: [2015-06-22 Mo 08:00]--[2015-06-25 Do 16:00] => 80:00
    :PROPERTIES:
```

```
    :Effort:   5d
    :END:
  *** Interstellar Flight
    CLOCK: [2015-07-02 Do 10:00]--[2015-07-04 Sa 02:00] => 40:00
    :PROPERTIES:
    :Effort:   10d
    :END:

#+BEGIN: org-gantt-chart :id "clock-space-src" :use-id-subheadlines t \
:show-progress if-clocksum
#+END
```

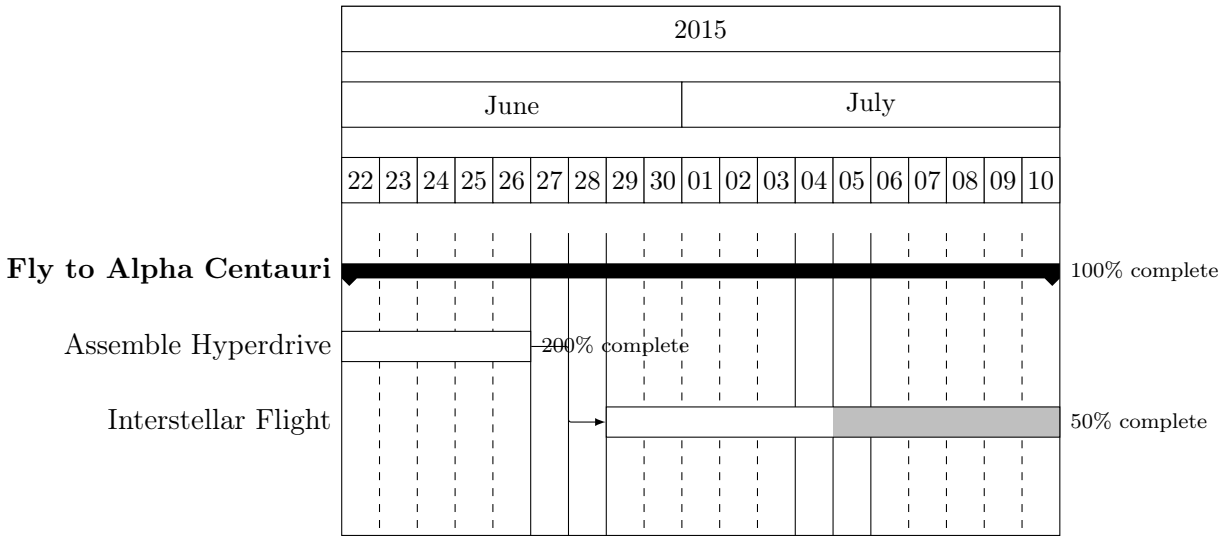
Creates the following gantt chart:



This chart demonstrates that the progress calculation of org-gantt does not use progress of larger than 100% on subtasks for the calculation of the progress of supertasks, as this could lead to the impression that a supertask is (almost) finished, even if the user took too long on a single subtask, whereas other subtasks are left unfinished. To override this behaviour, set the parameter `:calc-progress` to `use-larger-100`. In this case, supertasks will use the full clocked time of each subtask for the calculation of its progress value:

```
#+BEGIN: org-gantt-chart :id "clock-space-src" :use-id-subheadlines t \
:show-progress if-clocksum :calc-progress use-larger-100
#+END
```

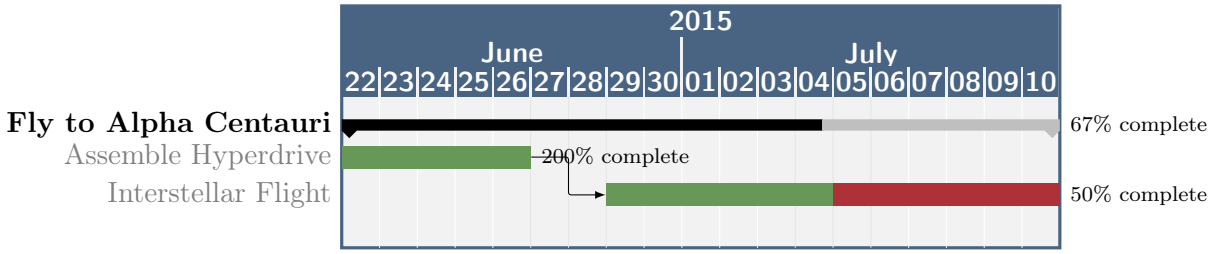
Creates the following gantt chart:



3.4 Styling

You can use all the styling parameters available in pgf-gantt (see the pgf-gantt manual for more information) by using the parameter `:parameters`. The content of this parameter is pasted unchanged into the ganttchart parameter list. Remember that you have to escape backslashes in order for them to work. [1] The exception to this are the pgf-gantt parameters `time slot format` and `vgrid`. While `time slot format` is always set to `isodate` in order for org-gantt to work correctly, the `vgrid` parameter is used to emphasize the difference between weekend and work days. The default line style for those (settable via the custom variables `org-gantt-default-weekend-style` and `org-gant-default-workday-style`) can be overwritten using the parameters `:weekend-style` and `workday-style`.

It therefore becomes possible to create styles such as the following (shamelessly stolen from the pgf gantt manual) - look at the source in org-gantt-manual.org for the full list of parameters:



4 Reference

4.1 Parameters

General parameters:

[1] Due to a bug in pgfgantt, it is advisable not to use the parameter `today offset`. This parameter unintentionally influences progress rendering.

`:id` The scope of the gantt chart. If `nil`, use the current document. If it starts with `file:\`, use the given document. Otherwise, use the headline with the given id property.

`:use-id-subheadlines` Setting this parameter to t will make the gantt chart ignore the headline of the given id

Calculation parameters:

`:calc-progress` Setting this parameter to `use-larger-100` will make the progress calculation use values of larger 100 for overclocked subtasks. See section 3.3.

`:hours-per-day` Sets the number of work hours in a work day. The default value for this parameter can be set via the custom variable *org-gantt-default-hours-per-day*.

Style parameters:

`:end-date` The end date of the chart. By default the date will be calculated as the latest date in the gantt chart.

`:parameters` Additional parameters added to the parameter list of the `\begin{ganttchart}` command. Any parameters allowed by pgfgantt can be used

`:show-progress` Setting this parameter to it to `t` will show the progress on all tasks. Setting it to `if-clocksum` will show progress only for those tasks with a clocksum, i.e. tasks that have been clocked, or that have subtasks that have been clocked. `nil` (the default) will not show progress on any tasks.

`:start-date` The start date of the chart. By default the date will be calculated as the earliest date in the gantt chart.

`:title-calendar` Sets the title calendar, that is the content of the pgfgantt command `\ganttitlecalendar{content}`. The default value for this parameter can be set via the custom variable *org-gantt-default-title-calendar*.

`:today` If set to t, the current date is highlighted as today in the gantt chart. If set to a timestamp, the given date is highlighted as today. If not set, no today value is used.

`:weekend-style` The style used for delimiting weekend days. The default value for this parameter can be set via the custom variable *org-gantt-default-weekend-style*.

`:workday-style` The style used for delimiting workday days. The default value for this parameter can be set via the custom variable *org-gantt-default-workday-style*.