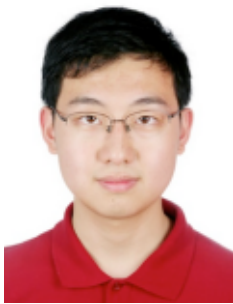


CS2103 PROJECT MANUAL

Command line task manager



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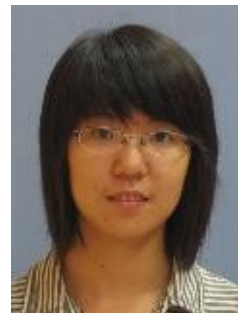
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1 Introduction

abc abc

2 User Guide

2.1 Quick Start

This section introduces you the minimum amount of commands to get started.

1. Start taskManager shell

On Mac OS and GNU Linux (referred to as “*nix” later), taskManager can be started from shell by commands:

```
$ cd the/folder/containing/taskManager
$ ./taskManager 1
```

On Microsoft Windows, taskManager can be launched in command prompt as well, or simply by double clicking.

Once taskManager is launched, you will see a prompt like “>_”, and you will start typing commands!

2. Add some tasks

```
$ ./taskManager
> add "Sample task 1"
> add "Sample task 2"
TaskManager: This task is highly similiar to some existing
task, do you really want to add it? y
```

To add a task, simply use the `add` command followed by the description of the task in a pair of quotation marks.

If no error message is shown, the task is successfully added. TaskManager may prompt for confirmation if the task to be added is highly similar to some existing task(s) to help prevent people forget adding tasks, which is the case in the example above.

3. List the existing tasks

¹ *nix version can be run at any directory after installing taskManger – “make install”. See details in section “Compilation and Installation”.

```
> ls
1 Sample task 1
2 Sample task 2
```

To see the existing tasks, use `ls` command. By default, the taskManager shows the serial number and the description of the tasks.

4. Mark a task as finished

```
> finish 2
> ls
1 Sample task 1
2 f Sample task 2
```

To finish an existing task, use the `finish` command followed by the serial number of the task to finish. Notice that for finished task, a “f” is shown between serial number and task description.

5. Remove task(s)

```
> ls
1 f Sample task 1
2 Sample task 2
> rm 1
TaskManager: Do you really want to remove this task permanently?y
> ls
2 Sample task 2
```

To remove a existing task, use `rm` command followed by the serial number(s) of the task to remove. TaskManager will prompt for confirmation when removing tasks.

6. Exit from taskManager

```
> exit
```

To quit from taskManager, use `exit` command. All changes to the existing tasks will be automatically saved.

2.2 More commands

2.2.1 read, import and export

TaskManager stores the tasks in an XML file which is by default `~/record.xml` on *nix, and `%USERPROFILE%\record.xml` on Windows.

TaskManager also supports importing/exporting the existing tasks from/to XML and HTML files. This is done by `read`, `import` and `export` commands.

read reads an XML file, list all the tasks it contains without affecting the current task list.

This is helpful when you only want to peek the content of an xml file without really importing it.

```
> ls
1 Sample task 2
> read thisweek.xml 2
1 f CS2103 midTerm Sep 29 06:30 - 07:30 pm MPSH 1B
2 f CS3230 midTerm Oct 15 06:00 pm
3 f CS3241 midTerm Oct 07 lecture
4 f CS3244 midTerm Oct 04 lecture
5 f ST2132 midTerm Oct 08 LT33 12:15 - 1:30 pm
> ls
1 Sample task 2
```

import is similar to **read** command. It reads the content of the XML file and appends all the tasks in it to current task list.

```
> ls
1 Sample task 2
> import mytasks.xml
1 Sample task 2 3
2 f CS2103 midTerm Sep 29 06:30 - 07:30 pm MPSH 1B
3 f CS3230 midTerm Oct 15 06:00 pm
4 f CS3241 midTerm Oct 07 lecture
5 f CS3244 midTerm Oct 04 lecture
6 f ST2132 midTerm Oct 08 LT33 12:15 - 1:30 pm
```

export exports the current task list to an XML or HTML file.

```
> export sampletasks.xml 4
> exit
$ cat sampletasks.xml
<taskList>
<task>
<serialNumber>1</serialNumber>
<deadline>1288473083</deadline>
<priority>0</priority>
<description>Sample task 2</description>
```

² The file name is not quoted. If the file name contains space, please quote it with a pair of quotation marks.

³ Task 1 is still in task list. Importing tasks will not erase existing tasks.

```

<group>default</group>
<isFinished>0</isFinished>
</task>
</taskList>

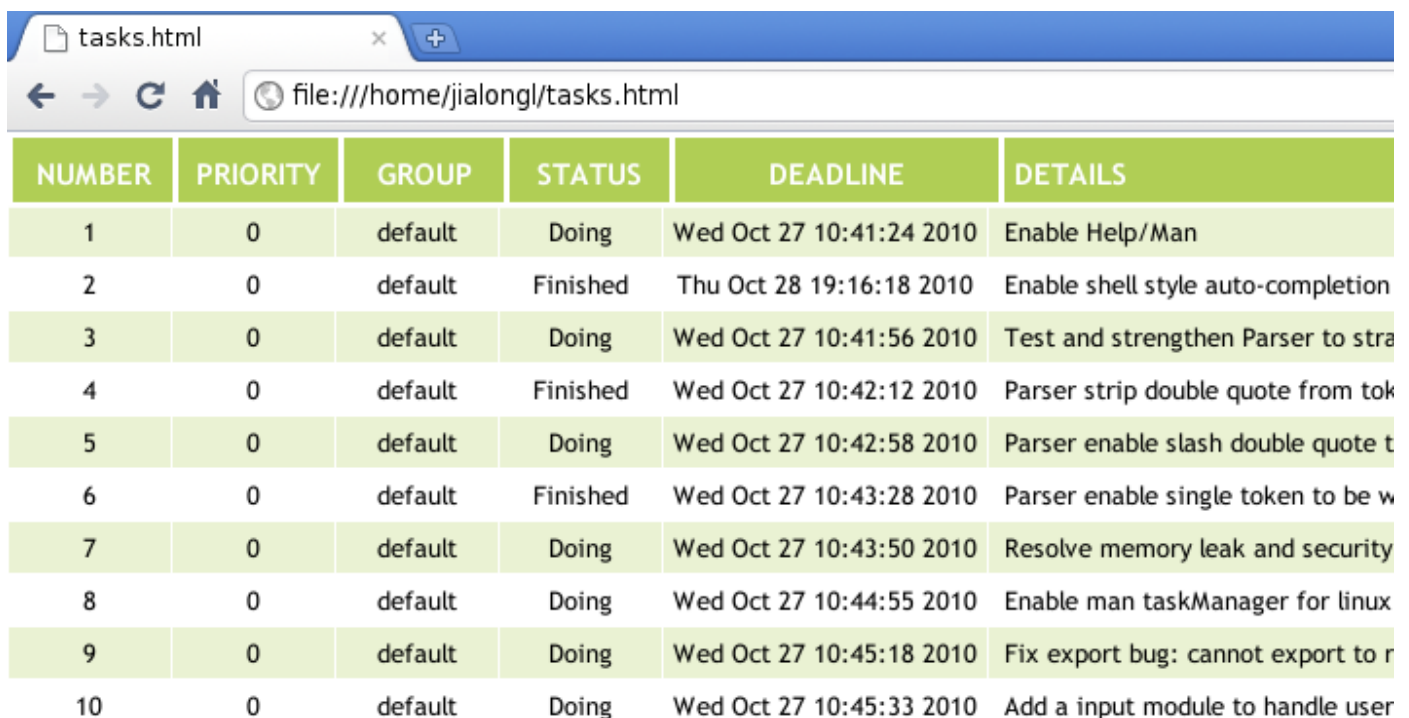
```

`export` can also be used to generate an HTML file which is more visually pleasant in your favourite browser.

```

> export -html sampletasks.html
> exit

```



NUMBER	PRIORITY	GROUP	STATUS	DEADLINE	DETAILS
1	0	default	Doing	Wed Oct 27 10:41:24 2010	Enable Help/Man
2	0	default	Finished	Thu Oct 28 19:16:18 2010	Enable shell style auto-completion
3	0	default	Doing	Wed Oct 27 10:41:56 2010	Test and strengthen Parser to str
4	0	default	Finished	Wed Oct 27 10:42:12 2010	Parser strip double quote from tok
5	0	default	Doing	Wed Oct 27 10:42:58 2010	Parser enable slash double quote t
6	0	default	Finished	Wed Oct 27 10:43:28 2010	Parser enable single token to be w
7	0	default	Doing	Wed Oct 27 10:43:50 2010	Resolve memory leak and security
8	0	default	Doing	Wed Oct 27 10:44:55 2010	Enable man taskManager for linux
9	0	default	Doing	Wed Oct 27 10:45:18 2010	Fix export bug: cannot export to r
10	0	default	Doing	Wed Oct 27 10:45:33 2010	Add a input module to handle user

Figure 1: tasks exported as webpage ⁵

2.2.2 task

```

> task 1
Number: 1 Deadline: Sun Oct 31 05:11:23 2010
Priority: 0 Status: Doing
Group: default

```

⁴ Currently `export` does not support environmental variables in path. E.g. `export ~/abc.xml` will not export the file to user's home directory `/home/username/`.

⁵ Page may not render correctly in IE 6 or its earlier versions.

Details:

Sample task 2 ⁶

To show detail information of a task, use `task` command followed by serial number of the task.

2.2.3 pri

```
> pri 1 10
```

```
> task 1
```

```
Number: 1 Deadline: Sun Oct 31 05:11:23 2010
```

```
Priority: 10 Status: Doing
```

```
Group: default
```

Details:

Sample task 2

To change the priority of a task, use `pri` command followed by the serial number of a task and its new priority. Priority is typically a number between -20 and 20. By default, the priority of a newly added task is 0.

2.2.4 edit

```
> edit 1 -d "Sample task 3" -p 12 -t 1d7 -g SampleGroup -f yes
```

```
> task 1
```

```
Number: 1 Deadline: Mon Nov 1 05:47:59 2010
```

```
Priority: 12 Status: Finished
```

```
Group: SampleGroup
```

Details:

Sample task 3

To edit a task, `edit` command is used like this: `edit <task serial number> -d <new description> -p <new priority> -t <new deadline> -g <new group> -f <finished or not>`

Only serial number is compulsory. Besides, to finish a task, `finish 1` is equivalent to `edit 1 -f yes`.

2.2.5 undo and redo

```
> undo 8
```

Undo the last command.

⁶ Adding tasks with detailed information is covered in section 2.3.1. In this example, default values are shown.

⁷ `-t 1d` means setting the deadline to be 1 day later. Time format that `taskManager` accepts is discussed in section 2.3.1

⁸ `Undo` command has no effect on commands like `ls`, `export`, `tui` and `undo`.

```
> redo
```

Redo the last undo. If more than one undo command executed, redo the next latest one.

2.3 Using Options

Like `edit`, some of the commands come with options to support more functionality. In this section they are introduced in great detail.

2.3.1 add

Use `-t` option to add a task with a deadline:

```
> add "some task" -t 3d2h
> add "some task" -t b2d
> add "some task" -t 12345
```

taskManager support 3 types of time format:

"plus" format "Plus" format specifies the how much time left for the task, and it has form `?w?d?h?m`, where each question mark stands for a number (not a digit).

For example, `3d2h` means the task will due after 3 days 2 hours the moment the command is executed – you have 3 days and 2 hours to finish it.

At least one of them should be specified.

"by" format "By" format has a similar form of "plus" format. It is in the form of `b?w?d?h?m`, where each question mark stands for a number (not a digit). Means before `c` hour `d` minutes on the `b`-th day of `a`-th week from now.

e.g. `b0w5d` means by friday this week.

`b2w3d8h` means by wednesday 8:00am, 2 weeks later.

`b1w` means by start of next week, i.e. by the end of this week.

`b2d` means by the end of tomorrow.

`b0d22h` means by 10:00pm today.

`b10d` means by start of the 10th day from now, i.e. in 10 days including today.

At least one of them should be specified.

Unix timestamp "Unix timestamp" means the number of seconds elapsed since Jan 1, 1900 00:00:00. It is not recommended for users, but rather used as the lower-order method for developers.

Use -p option to add a task with a priority:

```
> add "some important task" -p 20
```

Use -g option to specify a group for a task:

```
> add "the task with group"9 -g SampleGroup
```

Options are not compulsory. Different options can be used together. For example add "some task" -p 10 -g "special task" -t 4d.

2.3.2 ls

Use -s to sort the task list:

```
> ls -s "deadline priority"
```

A more general format is: `> ls -s "<keyword1 ><keyword2 >..."`

The listed tasks will be sorted by keyword1 then keyword2 ...

Available search keywords are: deadline, priority and serialnumber. Prefix of a keyword is also acceptable. e.g. -s "p" will sort the list by priority.

Examples: `> ls -s "p d"`

```
1 Sample task 1. This also has high priority 10 Sun Oct 31 06:49:09 2010
```

```
2 Sample task 2. This has high priority 10 Mon Nov 1 06:54:42 2010
```

```
3 Sample task 3. This is the latest 0 Tue Nov 2 06:54:37 2010
```

Use -k to filter tasks with a keyword ¹⁰:

`ls -k *Sam?le*task`, where ? means any single character, * means any string. (including empty string).

For example, "This is a sample with a important task" will match *Sam?le*task as the first * matches "This is a ", ? matches 'p' and the second * matches " with a important ".

"samqleTask" will also match *sam?le*task by letting both * to be empty string and ? to be 'q'.

Use -f to show/hide finished tasks:

`ls -f yes` shows only finished tasks.

`ls -f no` shows only unfinished tasks.

Use -g to show tasks of a specific group:

```
ls -g SampleTask
```

Only tasks from SampleTask group will be shown then.

Tip: Different options can be used together. When more then one restrictive options are there, conjunction of these restrictions are used. e.g. `ls -g`

⁹ If group name contains spaces, use a pair of quotation marks to quote it.

¹⁰ keyword is case insensitive.

`SampleTask -f y` will show tasks that are finished AND from “SampleTask” group.

2.3.3 rm

Use `-g` option to remove a group of tasks:

`rm -g SampleTask` removes the entire SampleTask group.

`rm` can be used removeS several tasks once as well. e.g. `rm 1 2 3` removes tasks 1, 2 and 3.

Notice: Commands like `finish`, `rm`, `export`, etc. do not support all task-selective options like `-g -k -f`. Executing these commands on a selected task set can be done with command piping, which is discussed in section 2.5.1.

2.4 Text Based Interactive User Interface

blah blah blah

2.5 Advanced Usages

2.5.1 command piping

```
> ls | rm
```

TaskManager supports command piping for most commands though it is a bit different from traditional Unix pipe. Piping means if one command selects some tasks, then the selected tasks will be passed to the next command as input. The tasks after the last command will be shown as output. Piping in taskManager is done with symbol ‘|’. When a pipe signs appear in a command, the smaller commands (separated by pipes) are executed one by one from left to right.

Examples:

1. finish all tasks

```
ls | finish
```

2. remove all finished tasks

```
ls -f yes | rm
```

3. import from a file and replace corrent task list

```
ls | rm | import newTasks.xml
```

4. import all CS2103 group tasks from a file

```
read newTasks.xml | ls -g CS2103 | add
```

5. export all CS2103 related tasks to a html file
`ls -k *CS2103* | export -html cs2103tasks.html`
6. show details of CS2103 tasks, sort by priority
`ls -g CS2103 | sort "pri" | task`

2.5.2 command mapping

> map "ls" "ls -f no"

TaskManager support custom command mapping/aliasing. General format of map is:

> map "new command" "original command"

A simple mapping is like the previous example. This maps "ls" to "ls -f no", which means hide finished tasks when listing. To retain the original ls command, map ls to something else. For example:

> map "lsa" "ls"

> map "ls" "ls -f no" ¹¹

More complex mapping makes use of symbol \$. There are two kinds of \$ symbols:

\$0 means all characters from the current position.

\$1, \$2, \$3 ... Means one token separated by spaces.

Examples:

> map "tomorrow \$1" "add \$1 -t 1d"

> tomorrow "Finish user guide"

The latter command will be parsed as add "Finish user guide" -t 1d, and a new task "Finish user guide" will be added with the deadline to be 1 days later

> map "do \$1 at \$2" "add \$1 -t \$2"

> do "Laundry" at 4h

The latter command will be parsed as add "Laundry" -t 4h, and a new task called "Laundry" will be added with the deadline to be 4hours later.

> map "ls \$0" "ls -f no \$0"

> ls

> ls -g cs2103

The second command will be parsed as ls -f no, and will list out all unfinished tasks. The third command will be parsed as ls -f no -g cs2103, and will list out all unfinished cs2103 tasks.

¹¹ The order of mapping matters as commands are executed one by one. Reversing the order of these two mapping will NOT work.

Important: TUI uses `ls` to retrieve tasks. Mapping `ls` to something else will affect behaviour of TUI.

2.5.3 taskManager script

Task manager commands can be saved in a single script file and be executed using run command.

```
$ cat tmscript
```

```
ls
```

```
map "ls" "ls -f no"
```

```
ls
```

```
$ ./taskManager
```

```
Task Manager V 0.2
```

```
exit<enter>to quit.  help<enter>for more instructions
```

```
=====
```

```
> run tmscript
```

```
1 f Sample task 1.  This also has high priority
```

```
2 Sample task 2.  This has high priority
```

```
3 Sample task 3.  This is the latest
```

```
2 Sample task 2.  This has high priority
```

```
3 Sample task 3.  This is the latest
```

The first 3 tasks are the result of the first `ls` in the script. The last 2 tasks are the result of the second `ls` in the script. Because `"ls"` is mapped to `"ls -f no"`, finished tasks are not shown by the second `ls`.

TaskManager scripts are pure text files. `".txt"` suffix is omitted here. In windows, suffix is hidden by default. To show it, check corresponding checkbox under Tools -> Folder Options in a file browser. Windows may not know how to open file with no suffix.

2.5.4 startup script

By default, taskManager executes a special script everytime when it is started. This script is `~/.tmrc` on *nix and `%USERPROFILE%\tmrc.txt` on Windows.

This file can be edited to include customized settings.

Examples:

1. To switch to the interactive user interface by default, add this line into `tmrc`:
`tui`

2. To save a backup file when taskManager is started:
`export /tmp/backupTasklist.xml`
3. To show tasks when taskManager is started:
`ls`
4. To remove finished tasks when taskManager is started:
`ls -f yes | rm`
5. To run a script with all self-defined mappings when taskManager is started:
`run /home/myusername/mymappings`

2.5.5 talk to taskManager

For all inputs that cannot be recognized by taskManager as a command, it will be treated as natural language sentence. TaskManager will try its best to recognize it and give correct response.

Example:

> what do I do today?
All tasks due today will be listed out.

2.6 Compilation and Installation

2.6.1 Microsoft Windows

On Windows, taskManager can be built with Visual Studio in the following steps:

1. Start Visual Studio with “C++ Development Settings”.
2. Create a win32 console project.
3. Drag all source files into the solution folder. Files should be automatically categorized into header files and source files.
4. Edit project configuration, under general, set character set to be multi-byte characters.
5. Edit project configuration, under linker, add pdcurses.lib to additional libraries and add the folder containing pdcurses.lib to library search directories.
6. Copy pdcurses.dll to %WINDIR%\system32\or the directory your executable will be generated.

7. Build the solution.

To build taskManager with TUI, pdcurses library is needed. It is free and can be downloaded here: <http://sourceforge.net/projects/pdcurses/files/>

Edit the project property to include the pdcurses.lib and in the linker options.

2.6.2 Unix-like Operating Systems

In Unix-like operating systems like GNU Linux and Mac OS X, start a shell, change directory to taskManager's source folder and type:

```
$ make
```

```
$ sudo make install
```

“make install” is optional. It just makes taskManager available system wide, which copys the executable and man pages to cooresponding directories.

The text UI is built by default, which requires ncurses library. It ships with most Linux distributions and Mac OS. If not, it can be installed with the package manager (`apt-get`, `yum`, `pacman` on various Linux distributions and `port` on Mac).

3 Developer Guide

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4 Individual Reports

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