

**NAME**

**xvtdl** – A To Do List Manager Using the XView Toolkit

**SYNOPSIS**

**xvtdl** [ *options* ]

**DESCRIPTION**

**xvtdl** is a "to do" list manager that features multiple, hierarchical to do lists with items that propagate through time (when not "checked off") and items that can be recurring in various time/calendar increments. Items that are "checked off" can either be retained for posterity or deleted by the propagation mechanism. The set of lists are indicated by category names; categories can be hierarchical to form trees of categories. Deadlines can be specified for any item, with actions that are performed on the deadline or after it has past. Multi-level logging allows items to be logged in several modes when checked off or on. Lists can be printed to "regular" and PostScript printers. In normal use, **xvtdl** can be started with the window system and left running (usually in an iconic state), as it uses very little CPU time and automatically propagates items at midnight every night.

**xvtdl** uses the XView toolkit from Sun Microsystems to implement the OPEN LOOK graphical user interface.

Unless otherwise directed by the "-f" option, **xvtdl** maintains a database of to do list items in the \$HOME/.tododb file. This database is in ASCII format and is written at various times throughout its execution lifespan (e.g., whenever items are propagated or when new items are added to a list).

**xvtdl** keeps track of the modification times of databases. When its internal modification time differs from the database file's modification times, it will sense the discrepancy and ask the user how to handle it. The user can merge any changes made, write out the current, in-memory copy of the database (making the user's copy the actual copy), or ignore the changes altogether. *Note that merging does not delete items.* This means that items that were deleted in the "altered" database file will still be maintained in the current, in-memory version *and written out to the database file when appropriate.*

**OPTIONS**

- f file    Use "file" instead of \$HOME/.tododb
- m        Do not initialize colors on a color display. Treat the display as monochrome.

**USING XVTDL**

When **xvtdl** is started, the todo list for the first category for the current date is displayed. There are three areas that will recognize events. These are the calendar area on the upper left, the control area above the to do list, and the to do list itself.

The calendar area will respond to any mouse click. Clicking in the calendar will move the current list to the date clicked on. The date for which the todo list is being displayed will appear in the calendar with a box around it. A full text date specification will be given to the right of the calendar. If the mouse click is not on a number, **xvtdl** tries to deduce what date would be there if the previous or next months numbers were displayed.

The list itself displays todo list items and their priorities. The middle mouse button has no effect here. The left mouse button will select or deselect items -- for use with editing operations -- with a single click. A double click on an item will toggle its "checked" state -- from off to on or from on to off. Checked items are not propagated and items are optionally logged when checked on and off. The right (menu) mouse button will display the edit menu -- the same menu as connected with the "Edit" button in the control area (see below). Some keyboard actions have effect here:

COPY (L6), PASTE (L8), and CUT (L10) keys perform the same copy, paste, and cut operations (respectively) that can be initiated from the edit menu (see below).

Up-arrow (R8) and Down-arrow (R14) keys increase and decrease priority (respectively) for a selected list item, just as selecting the appropriate operation from the edit menu does (see below).

The control area above the list has the following controls:

#### Left and Right arrow buttons:

These move incrementally through the calendar. Left moves back in time; right moves forward in time. Without any other keys down, the effect is to move one day backward or forward. With the control key down, the increment is one week. With the shift key pressed, the increment is one month. With the Meta key down, the increment is one year.

#### Category Menu:

This is a menu (bring it up with the right mouse button) containing all the categories/todo lists that are in the database. Selecting one from this menu will display that particular list.

#### The "Create" button:

This button is a menu button that allows the user to create new list items or categories. Each choice brings up its own window. See the description of the item and category editor windows below.

#### The "Edit" button:

This is a menu button that allows the following operations:

##### Modify

Select a list item then this menu item. This brings up the entry window, with the items initialized by the list edit just selected. The attributes -- including the deadline specifications and the recurring properties -- can be changed and the "Done" button will refresh the item with its new attributes.

##### Copy

After selecting a list item, select this menu item. A copy of the list item is placed in an edit buffer, ready for pasting. One cannot copy categories.

##### Cut

After selecting a list item, select this menu item. The selected item is placed in an edit buffer and deleted from the current list.

##### Paste

Selecting this menu item will insert the contents of the edit buffer into the current list. An error will be flagged if the edit buffer is empty.

Categories cannot be pasted.

##### inc priority

Selecting this choice will increment the priority of the selected list item. The item is incremented according to the priority scheme (ascending or descending) chosen in the property specification.

##### dec priority

Selecting this choice will decrement the priority of the selected list item. The item is decremented according to the priority scheme (ascending or descending) chosen in the property specification.

##### Modify Category

Selecting this item will allow the current category to be modified in the category editor. Changes in name and placement in the category hierarchy are allowed. Changes take place when the "Done" button is pressed.

##### Delete Category

Selecting this item will cause the currently displayed category to be deleted from the category menu (and made inaccessible).

**Note** that there must be at least one category in the system at all times. Starting **xvtdl** with no database creates an empty category called "Every Day". Likewise, deleting the last category automatically creates

the empty "Every Day" category. To get rid of the "Every Day" category, create another category, then delete the "Every Day" category.

#### Properties...

Selecting this menu item will pop up the properties window. Use of this window is detailed below. Properties are used to manipulate the X resources connected with this program.

#### The "Today" button:

This displays the current list for the current date.

#### The "List All" button:

This is a menu button that allows special listing operations. Note that this button will change its label, depending on how the default listing action on the button's menu changes. For all items except "List Category", the button label will change to "List Cat" to allow easy redisplay of the current category. For the "List Category" menu choice, the label will revert to "List All". Also, selecting an option that redisplay the todo list will revert the button to "List All" status.

The operations are as follows:

##### List All

This causes **xvtdl** to display all list items from all categories in the user-specified order on the todo list. When this list is displayed, it can be manipulated as a "normal" list from a category. Items may be checked off and on -- the effect of this will be reflected in the category that item appears in -- and the "global list" can be printed through the print window.

Printing the global list works as it does with any other list, with one exception. The "Categories:" field is rendered inactive, because there is only one list to print. This field is activated again for other, "normal" lists.

**Note** that the category specifier does not change for the global list. During the time the global list is displayed, the indication in the category item is incorrect.

##### List Tree

This will cause the tree of categories rooted at the current category to be displayed on one list. Here, semantics and operations are analogous to those for the "List All" choice.

##### List Parent

This choice will list the contents of the parent category without changing the "current" category.

##### List Category

This choice will list contents of the current category on the todo list.

#### The "Print..." button:

This opens the Print window for printing lists. This window is detailed below.

#### The "Done" button:

This causes the program to update the todo database and close to an iconic form. *This way is preferred* for closing over using the window menu.

#### The "File" Button

This button is a menu button allowing certain file operations to take place. Each menu choice pops up a file manager window, which allows the user to "click" their way through a file system by double-clicking on the list of files, or to textually specify the filename.

Operations are:

Load

This opens and loads the contents of the file name returned by the file manager. The current database contents are lost.

Merge

This choice opens and load the contents of the file name returned by the file manager in the same way the "Load" operation does. However, the current database contents are retained. All new entries are added relative to the current category.

Save

This choice will save the current database contents into the file named by the name returned by the file manager window.

Save Category

This choice will save the contents of the current category into the file named by the name returned by the file manager window.

The "Quit" button:

This cause the program to terminate.

### **The Entry Editor**

Creating and editing items is done through the entry window. This window will pop up when the "New Item" menu entry is chosen from the "Create" menu button or the edit menu item is selected. This window is detailed below.

Category Menu:

This menu, only active for list item creation, allows the user to select the list category the newly created item will be placed into.

The "Text:" field:

This is the actual text of the to do list item.

The "Priority:" slider:

This slider specifies the priority of item being created/edited. This will allow a priority to be specified between 1 and 9.

The "Recurring..." button:

This will pop up the recurrence editor, detailed below. This window lets the user specify the recurrence properties of the item being created or edited.

The "Deadline..." button:

This button will popup the deadline specification window. This window is detailed below; it allows the specification of actions to occur when a deadline for an item is encountered.

The "Cancel" and "Done" buttons:

"Cancel" cancels the creation or editing operation, ignoring the settings in the window.

"Done" completes the creation or editing operation, installing the changes. Both choices close the editing window.

### **The Recurrence Editor**

The recurrence editor lets the user choose the frequency and length of time that the item should recur. Various items will be hidden or be shown, depending on the frequency of the recurrence. (For example, no other specification is required if the recurring property is "Daily".) Most is self-explanatory. Choosing "Done" in the recurrence window will install the recurrence propoerties specified; choosing "Cancel" will ignore the recurrence choices.

The specification of "days of the week" is more flexible now than at version prior to 4.x. Here, you can specify any day of the week -- and mix and match them. **There is a problem here**, however, with prior versions of **xvtdl**. The days of the week are stored in a "bitwise" form -- 1 for Monday, 2 for Tuesday, 3 for *both* Monday and Tuesday, etc. This means that Wednesday, Friday, Saturday, and Sunday in the old version will come out as Monday/Tuesday, Monday/Wednesday, Tuesday/Wednesday, and Monday/Tuesday/Wednesday, respectively. Please check your "day of the week" specifications when starting to use version 5.0 for the first time.

Note that -- for monthly specification -- "week of month" and "day of month" are mutually exclusive. This is arranged in **xvtdl** by inactivating "day of month" whenever "week of month" is specified.

Note also that for "number of weeks" and "number of months", a zero (0) is considered "forever".

### The Deadline Specification Window

A deadline is a date on or after which certain actions may occur. A deadline may be absolute or relative. Absolute deadlines are given in "mm/dd/yy" notation (e.g., "7/8/92"). Relative deadlines are given relative to the starting date of the list item (note that's *not* the current date -- especially if the item has been propagated). Relative deadlines are give as

<number><units>

<number> may be positive or negative. <units> must be one of "d", "w", "m", or "y", indicating days, weeks, months, or years, respectively. For example, "4d" indicates 4 days from the starting date fo the item; "3m" specifies 3 months from the date of the item.

While absolute deadlines work fine for most applications, relative deadlines are the best to use with recurring items, when the starting date of the item depends on its recurring properties.

Deadlines are examined *at propagation time*, and only at propagation time. (Propagation occurs when the tool is started and at or around midnight each night.)

Actions can be taken at or after a deadline date. These are specified in the deadline window and may be combined. A new deadline window is initialized to the actions specified in the "Deadlines" property sheet. These actions are listed below:

#### Delete

The user must enter the time units and the number of those units. After the specified number of time units after the deadline have past, the item will be deleted.

#### + Priority

For each day after the deadline has past, the item's priority will be incremented by the amount specified.

#### - Priority

For each day after the deadline has past, the item's priority will be decremented by the amount specified.

#### Mail on

A message will be sent to the address specified on the day on which the deadline occurs.

#### Mail after

A message will be sent to the address specified on each day after the deadline.

#### Move after

The deadline will be moved by the number of time units given on the day *after* the deadline has occurred.

### The Category Editor

Categories are created and edited through the category editor window. This window is used to insert a category anywhere in the category tree. There are a few rules to follow: (1) a category cannot be placed as the subcategory of one that already has subcategories, (2) a category cannot be named with the same name as any other category, and (3) a category cannot be placed as a subcategory to itself.

The controls on the editor window are self-explanatory.

### The Print Window

Printing lists is done through the print window. Printing can be done in a no-frills ASCII mode or in a PostScript mode. Through this window, the user must specify the printer name, the printing mode, and whether to print checked off items. If PostScript mode is selected, the user can also specify the scaling factor on the printout (useful for insertion into organizational notebooks/datebooks). The user can print the current categories or all categories by specifying the proper selection on the "Categories" item. The user can cancel or complete the print action by selecting the appropriate buttons in the window.

### The Properties Window

Invoking the "Properties..." item in the edit menu will open the properties window. This window controls the X resources used to control **xvtdl** and will create and maintain a file in the user's home directory that contains the resource specifications. This file, called ".xvtdlrc", will be automatically updated when the properties are updated. There are three control items and four property sheet. The items work as follows:

#### Category:

In version 5.0, there are five categories of properties: "Sorting", "Printing", "Deadlines", "Logging", and "Other Info". Each is selectable through the menu on the "Category:" item.

#### The "Reset" Button:

Pressing this button will cause the window to be reset with the current setting of X resources.

#### The "Done" Button:

This button causes the program to set the X resources in the X resource database for the user's display server and to write the values out to the ".xvtdlrc" file to be read next time the program is invoked.

The property items in each property sheet are detailed as follows:

#### The "Sorting" Sheet:

##### The Sort Order Choices:

Sorting may be specified as a combination of priority, chronological, and alphabetical orders. These are specified in "sort levels". Sort level 3 is done within items sorted by sort level 2, which is done within items sorted within sort level 1.

Note that no levels may be specified further if alphabetical order is selected. Thus, alphabetical order is always the last order specified.

##### Priority Preference:

This provides a way to customize what order the user wishes priorities to be listed: either with high = 1 down to low = 9 or with high = 9 and low = 1. The default situation is the latter.

##### Chronology Preference:

This provides a way to customize what order the user wishes item to be listed chronologically: either oldest first or newest first. The default situation is the latter.

#### The "Printing" Sheet:

##### Default Printer:

This is the printer that will come up as the default in the print window. It is specified here because changing the printer in the print window does not manipulate the X resource. If this resource is left empty, then **xvtdl** will use the value of the PRINTER environment variable.

**Default Printer Mode:**

This is the printer mode (normal or PostScript) that will come up as the default in the print window. It is specified here because changing the printer in the print window does not manipulate the X resource.

**The "Deadlines" Sheet:**

This sheet is a replica of the deadline specification window, except that the deadline date is not present. Any setting the user makes on this sheet will be used as the default setting for the items on new deadline specifications for list items.

**The "Logging" Sheet:****Log Preference:**

This specifies when to log an entry. Choices are "When Checked", which allow logging when the item is checked on or off, "At Quit/Propagation", which logs a checked off item when the program propagates at midnight or the program is terminated, or "Never", which disables logging.

**Log Info:**

This specifies the kind of information to occur in the log file. This can be either "Timestamp Only", which places a timestamp and the item string in the file without user intervention, or "User Specified", which constructs a minimal log entry and starts an editor containing that entry that the user can use to customize it. This editor window contains an editor window and two buttons: "Cancel" will cancel any edits, entering the original log entry in the log file, and "Done" will save any edits made, entering the new version in the log file.

**Log Filename:**

This gives the name of the log file. This is can be a relative or absolute filename.

**The "Other Info" Sheet:****Default Priority:**

This specification will set the default priority that sets the priority of newly created list items. The default for this setting is 5.

**On Propagation**

This specifier will direct the program what to do with checked-off list items when it moves items to a new day. The user can either have them deleted, which is the default, or have them retained.

**Note** that if a retained, checked-off item is unchecked, it immediately propagates to the current day.

**Foreground Color and Background Color**

These allow the textual specification of the foreground and background colors for the **xvtdl** application. If you push the button next to each textual line, a color chooser will be invoked that allows you to choose a color with the mouse and will enter the name of that color on the property window line.

Naturally, these items are inactive (grayed out) on monochrome displays.

**TO DO LIST DATABASE FORMAT**

The database is an ASCII file oriented in a line-by-line manner. Each line represents either a category specification, a parent specification, a todo list item, or a deadline specification. *Note that strings are surrounded two single quotes -- this has been used to allow double quotes in list items.*

Category specifications are given as

category: "category name"

All entries up to the next category specification or the end of file designate todo list items in the category

listed.

Parent specifications can be given for categories and always appear after the category specification. They indicate the name of the parent of the current category. Parent specifications are given as

parent: "parent name"

To do list items are given in the form

date[recurring-part]:priority:"list item text"

The "date" is given in mm/dd/yy format. The recurring part is optional and is specified by a string of characters:

one of "d", "w", "b", "m", or "y" to indicate daily, weekly, biweekly, monthly, or yearly repetition.

if weekly or biweekly, this is followed by an integer. The integer is viewed as a 7-bit bitstring, where the bit is on when the event occurs on a specific day of the week (0 = Sunday) (*Note that the old Mon/Wed/Fri and Tues/Thurs formats are still recognized for backwards compatibility. When these are written after begin read, they are converted to the new format.*)

if weekly or biweekly, this is followed by a "W" and a number, indicating the number of weeks this item is to repeat

if monthly, a "N" and a number is concatenated to indicate the week number in the month to repeat the item

The priority part is an integer from 1-9.

Deadline specifications give deadlines associated with the most recently defined list item. Their format is given by

deadline:date:actions:deletetime deleteunits:+units:-units:"on addr":"after addr":movetime  
moveunits:

all on one line. "date" is given in absolute or relative deadline form. "actions" is the value of the action specification item on the deadline specification window -- a bitstring with bits on or off depending if that particular action is specified. "deletetime" and "movetime" are integers, giving the number of the respective units for delete time and move time. "deleteunits" and "moveunits" are integers in the range 0-3, giving days, weeks, month, and years, respectively. "+units" and "-units" are integers giving the number of priority steps to increment or decrement an item. "on addr" and "after addr" are the addresses to send messages about the deadline occurring or being past, respectively.

## RESOURCES TO CONTROL XVTDL

There are many resources that the resource database for **xvtdl** can contain. They are included here for completeness; however, they can all be manipulated through the properties window. They are

### SortOrder

a sequence of three digits indicating the criteria to be used at a sort level. Values 0 through 2 indicate priority, chronological, and alphabetical criteria, respectively. A value of 3 indicates no criteria. The sequence is ordered sort level 1 to sort level 3 by left to right.

### PriorityListing

a string resource that can be either "ascending" or "descending", indicating which direction, high to low, the priorities should be listed

### ChronListing

a string resource that can be either "ascending" or "descending", indicating which direction, new to old, the chronological order is given.

### PrintDestination

a string resource, values of "file" or "printer", indicating the default destination to which an output of the todo list should go.



**Printer** a string which specifies the default printer to use in the print window

**PostScript**  
a boolean resource specifying whether to initialize the print window to use PostScript mode.

**PrintFile**  
a string resource indicating the default file name into which an output of the todo list should go if the destination is "file".

**Logging**  
a boolean resource specifying whether to log list item activity

**LogPreference**  
a string resource that can contain two values: "atchecked" indicates that logging should occur when an item is checked off or on, "atquit" indicates that logging should occur at propagation or termination of the program

**LogInfoPreference**  
a string resource that can contain one of two values: "timestamp" indicates only timestamps are to be logged in the log file, "userspec" indicates that the user is to specify the contents of the log entry

**LogFileName**  
a string resource giving the name of the log file

**DefaultPriority**  
a integer resource giving the default priority to use when creating a new list item

**DeadlineDelete**  
a boolean resource specifying the default for the delete action in newly created deadlines

**DeadlineDeleteTime**  
an integer resource giving the default for the number of delete units to wait after the deadline in a newly created deadlines

**DeadlineDeleteUnits**  
an integer resource giving the default units for the time to wait after the deadline in a newly created deadlines -- the range is 0-3, giving days, weeks, months, and years respectively

**DeadlineUpPriority**  
a boolean resource specifying the default for the "+ Priority" action in newly created deadlines

**DeadlineUpIncrement**  
an integer resource giving the default for the increment of priorities in a newly created deadlines

**DeadlineDownPriority**  
a boolean resource specifying the default for the "- Priority" action in newly created deadlines

**DeadlineDownIncrement**  
an integer resource giving the default for the decrement of priorities in a newly created deadlines

**DeadlineMailOn**  
a boolean resource specifying the default for the "Mail on" action in newly created deadlines

**DeadlineMailOnAddress**  
a string resource giving the default address for the "Mail on" action in newly created deadlines

**DeadlineMailAfter**  
a boolean resource specifying the default for the "Mail after" action in newly created deadlines

**DeadlineMailAfterAddress**  
a string resource giving the default address for the "Mail after" action in newly created deadlines

**DeadlineMoveAfter**  
a boolean resource specifying the default for the "Move after" action in newly created deadlines

**DeadlineMoveTime**

an integer resource giving the default for the number of move units to wait after the deadline in a newly created deadlines

**DeadlineMoveUnits**

an integer resource giving the default units for the time to wait after the deadline in a newly created deadlines -- the range is 0-3, giving days, weeks, months, and years respectively

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**FILES**

\$HOME/.tododb

This is the default to do list database.

\$HOME/.xvtdlrc

This file holds the X resources required to control this program. It is created and maintained through the property window.

/tmp/xvtdl\*

When printing, this temporary file is used to store the list prior to sending to the printer.

/tmp/log\*

When logging, this temporary file is used to store the log entry prior to editing by the user.

**SEE ALSO**

cm(1) tdl(L)

**AUTHOR**

The **xvtdl** program was written by Mike Jipping, Hope College Department of Computer Science. All comments, praises, bug reports, and flames should be sent to him at "jipping@cs.hope.edu". He'll at least read your message.

**KNOWN BUGS**

There are currently no known aspects of the program that corrupt the data or crash the program.

There are some annoying bugs. When the database is large, merging in changes made by someone else duplicates all entries.