ahist - a simple seach history for Acme

(version 0.4.4)

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2 INTRODUCTION a hist (version 0.4.4) $\S 1$

1. Introduction. This is an implementation of ahist command for Acme. It tracks all search requests in Acme's window to a separate window.

§2 ahist (version 0.4.4) IMPLEMENTATION

2. Implementation.

```
// This file is part of ahist
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   // THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
   // (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
   // OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
package main
import(
  (Imports 4)
var(
  (Global variables 5)
type(
  \langle \text{Types 44} \rangle
```

4 STARTUP ahist (version 0.4.4) §3

```
3.
       Startup.
   func main(){
       \langle Store a name of the program 13 \rangle
        \langle \text{ Obtaining of } id \text{ of a window } 11 \rangle
        \langle \text{ Open window } w \text{ by } id \text{ 19} \rangle
        \langle Change the name of the program in the tag 14\rangle
       \langle \text{Read } name \text{ of the window } 22 \rangle
       (Start history processing 48)
       (Processing window events 18)
4.
\langle \text{Imports 4} \rangle \equiv
   "fmt"
   "os"
See also sections 9, 17, and 20.
This code is used in section 2.
      Let's define dbg flag and will switch it by ahist + and ahist - .
\langle \text{Global variables 5} \rangle \equiv
   dbg bool
See also sections 10, 12, 21, 35, and 45.
This code is used in section 2.
6.
\langle Switch debug output on 6\rangle \equiv
   dbg = \mathbf{true}
   debug("debug_{\square}has_{\square}been_{\square}switched_{\square}on\n")
This code is used in section 27.
7.
\langle Switch debug output off 7 \rangle \equiv
   debug("\mathtt{debug} \sqcup \mathtt{has} \sqcup \mathtt{been} \sqcup \mathtt{switched} \sqcup \mathtt{off} \setminus \mathtt{n"})
   dbg = \mathbf{false}
This code is used in section 27.
8.
   \mathbf{func} \ \ debug(f \ \mathbf{string}, args \ \dots \mathbf{interface} \{\}) \{
          fmt.Fprintf(os.Stderr, f, args...)
   }
\langle \text{Imports 4} \rangle + \equiv
   "strconv"
10.
\langle Global variables 5\rangle + \equiv
   id int
```

```
§11
       ahist (version 0.4.4)
11.
\langle Obtaining of id of a window 11\rangle \equiv
     var err error
     id, err = strconv.Atoi(os.Getenv("winid"))
    if err \neq nil {
       return
This code is used in section 3.
12.
\langle \text{Global variables 5} \rangle + \equiv
  tagname string
13.
\langle Store a name of the program 13 \rangle \equiv
  tagname = os.Args[0]
  if n := strings.LastIndex(tagname, "/"); n \neq -1  {
     tagname = tagname[n:]
  debug("tagname:%s\n", tagname)
This code is used in section 3.
14. We change ahist into -ahist to add a possibility to switch ahist off.
\langle Change the name of the program in the tag 14\rangle \equiv
     del := [] string \{tagname, "-" + tagname, "-" + tagname + "+", "-" + tagname + "-" \}
     add := []string{"-" + tagname}
     changeTag(w, del, add)
  }
This code is used in section 3.
15. On exit we should make an opposite change.
\langle \text{Cleanup } 15 \rangle \equiv
     del := [] string \{tagname, "-" + tagname, "-" + tagname + "+", "-" + tagname + "-" \}
     add := []string\{tagname\}
     changeTag(w, del, add)
  }
See also sections 42 and 46.
```

This code is used in sections 18 and 27.

STARTUP

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6 EVENTS HANDLING ahist (version 0.4.4) $\S16$

16. Events handling.

```
17.
\langle \text{Imports 4} \rangle + \equiv
    "github.com/santucco/goacme"
18.
\langle Processing window events 18 \rangle \equiv
   \langle Fix tag of the window 41\rangle
       ev, err := w.ReadEvent()
       if err \neq nil {
          \langle \text{Cleanup } 15 \rangle
          return
       ⟨ Process main window 23⟩
This code is used in section 3.
19.
\langle \text{ Open window } w \text{ by } id \text{ 19} \rangle \equiv
   w, err := goacme.Open(id)
   if err \neq nil {
       debug(\texttt{"cannot} \sqcup \texttt{open} \sqcup \texttt{a} \sqcup \texttt{window} \sqcup \texttt{with} \sqcup \texttt{id} \sqcup \texttt{\%d} : \sqcup \texttt{\%s} \backslash \texttt{n"}, id, err)
       return
   defer w.Close()
This code is used in section 3.
20.
\langle \text{Imports 4} \rangle + \equiv
   "strings"
21.
\langle Global variables 5\rangle + \equiv
   name string
```

```
22.
\langle \text{Read } name \text{ of the window } 22 \rangle \equiv
         f, err := w.File("tag")
         if err \neq nil {
             debug(\texttt{"cannot}_{\square}\texttt{read}_{\square}\texttt{from}_{\square}\texttt{'tag'}_{\square}\texttt{of}_{\square}\texttt{the}_{\square}\texttt{window}_{\square}\texttt{with}_{\square}\texttt{id}_{\square}\%\texttt{d}:_{\square}\%\texttt{s}\\ \land \texttt{m}^{"}, id, err)
             return
         if \_, err := f.Seek(0,0); err \neq nil  {
             debug(\texttt{"cannot}_{\square} \texttt{seek}_{\square} \texttt{to}_{\square} \texttt{the}_{\square} \texttt{start}_{\square} \texttt{'tag'}_{\square} \texttt{of}_{\square} \texttt{the}_{\square} \texttt{window}_{\square} \texttt{with}_{\square} \texttt{id}_{\square} \% \texttt{d} :_{\square} \% \texttt{s} \\ \texttt{n"}, id, err)
             return
         var b [1000]byte
         n, err := f.Read(b[:])
         if err \neq nil {
             debug("cannot_{\square}read_{\square}tag_{\square}of_{\square}the_{\square}window_{\square}with_{\square}id_{\square}%d:_{\square}%s\n", id, err)
             return
         ss := strings.Split(\mathbf{string}(b[:n]), "_{\sqcup}")
         if len(ss) \equiv 0 {
             return
         name = \mathbf{string}(ss[0])
    }
This code is used in section 3.
23.
\langle \text{Process main window 23} \rangle \equiv
     \langle Process and continue if it is not Look in any form 24\rangle
     \langle \text{Process } Look \ 30 \rangle
     \langle \text{ Read addr into } b, e | 38 \rangle
     \langle \text{Show dot } 40 \rangle
     ⟨ Write history 53⟩
This code is used in section 18.
```

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24. b, e address pair is taken from the ev event. $\langle \text{Process and continue if it is not } Look \text{ in any form } 24 \rangle \equiv$ $debug("incoming_uevent:_u%+v\n", ev)$ s := ""b := ev.Begine := ev.End $type_switch$: switch{ **case** $ev.Type \equiv goacme.Look \mid goacme.Tag:$ (Process in case of a request by B3 mouse button in the tag 25) **case** $ev.Type \equiv goacme.Look$: (Process in case of a request by B3 command in the body 26) **case** $ev.Type \equiv goacme.Execute \lor ev.Type \equiv goacme.Execute \mid goacme.Tag:$ (Process in case of executing a command in the body or tag 27) **case** $ev.Type \equiv goacme.Insert \lor ev.Type \equiv goacme.Delete$: $\langle \text{Fix tag of the window 41} \rangle$ continue default: (Unread event and continue 29) This code is used in section 23. We take a search string from ev event and set dot. Also we have to clean b, e because it is an address in the tag. $\langle \text{Process in case of a request by B3 mouse button in the tag 25} \rangle \equiv$ b, e = 0, 0s = ev. Textif $len(ev.Arg)\rangle 0$ { $s += " \sqcup " + ev.Arg$ \langle Set addr to dot 32 \rangle This code is used in section 24. We take a search string and address from ev event. $\langle \text{Process in case of a request by B3 command in the body 26} \rangle \equiv$ s = ev. Textif $len(ev.Arg)\rangle 0$ { $s += " \sqcup " + ev.Arg$ \langle Set addr to $b, e 34 \rangle$ This code is used in section 24.

27. For Look command we set address and continue processing. ahist command we just ignore to avoid duplicates. -ahist command makes cleanups and processes to exit. ahist + and ahist - switch debug output on and off. All other commands are written back to "event" file and fallthrough to the next case, where a status of the window is checked.

```
\langle Process in case of executing a command in the body or tag 27\rangle \equiv
  switch strings. TrimSpace (ev. Text) {
    case "Look":
       \langle \text{Process in case of executing } Look \text{ command } 28 \rangle
       break type_switch
    case tagname:
       continue
    case "-" + tagname + "+":
       fallthrough
    case "-" + tagname + "-":
       fallthrough
    case "-" + tagname:
       debug("exiting\n")
       \langle \text{Cleanup } 15 \rangle
       return
    case tagname + "+":
       (Switch debug output on 6)
       continue
    case tagname + "-":
       (Switch debug output off 7)
       continue
  w.UnreadEvent(ev)
  fallthrough
This code is used in section 24.
```

28. We take a search string from an argument of Look command. Current address is set to dot, then b, e pair is set to the current address.

```
\langle Process in case of executing Look command 28 \rangle \equiv s = ev.Arg
\langle Set addr to dot 32 \rangle
\langle Read addr into b, e 38 \rangle
This code is used in section 27.

29.
\langle Unread event and continue 29 \rangle \equiv w.UnreadEvent(ev)
continue
This code is used in sections 24, 32, 33, 34, 37, 38, 39, and 40.
```

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30. If the ev event contains a search string, use it. Otherwise we should read selected the string from the window's body and read its address into b, e.

```
\langle \text{Process } Look \ 30 \rangle \equiv
       if len(s) > 0 {
          \langle Make a search of s 37\,\rangle
       } else {
           (Look for selected string 31)
           \langle \text{Read addr into } b, e | 38 \rangle
This code is used in section 23.
31.
\langle \text{Look for selected string 31} \rangle \equiv
       \langle \text{Read selected string from "xdata" file to } s \mid 33 \rangle
       \langle \text{ Make a search of } s \text{ } 37 \rangle
This code is used in section 30.
32.
\langle \text{ Set addr to dot } 32 \rangle \equiv
   if w.WriteCtl("addr=dot") \neq nil  {
       (Unread event and continue 29)
   debug("set_laddr_lto_ldot\n")
This code is used in sections 25 and 28.
33.
\langle \text{Read selected string from "xdata" file to } s \mid 33 \rangle \equiv
       d, err := w.File("xdata")
       if err \neq nil {
          debug("cannot_{\square}read_{\square}from_{\square}'xdata'_{\square}of_{\square}the_{\square}window_{\square}with_{\square}id_{\square}%d:_{\square}%s\n", id, err)
           (Unread event and continue 29)
       buf := \mathbf{make}([]\mathbf{byte}, e - b + 1)
       \textbf{for} \ \ n, \square := d.Read(\mathit{buf}\,); \ \ n\rangle 0; \ \ n, \square = d.Read(\mathit{buf}\,) \ \ \{
          s += \mathbf{string}(\mathit{buf}[:n])
       debug(\texttt{"read}\_\texttt{address}\_\texttt{from}\_\texttt{xdata}\_\texttt{b}: \_\%\texttt{v}, \_\texttt{e}: \_\%\texttt{v} \land \texttt{n}", b, e)
This code is used in section 31.
```

11

```
34.
```

```
 \langle \text{Set addr to } b, e \mid 34 \rangle \equiv \\ \text{if } err := w. WriteAddr("#%d,#%d",b,e); err \neq \text{nil } \{ \\ debug("cannot_write_to_'addr'_lof_the_window_with_lid_%d:_l%s\n",id,err) \\ \langle \text{Unread event and continue 29} \rangle \\ \} \\ debug("set_laddr_to_l%d,_l%d\n",b,e) \\ \text{This code is used in sections 26 and 37.}
```

35. We need to story previous history *entry* for the case, when *Look* in a tag is executed but without selected text. In the case a search string is taken from Acme. We take it from *lentr*

```
\langle Global variables 5\rangle +\equiv lentr entry
```

36. Let's add *empty* function for *entry*

```
\begin{array}{ll} \mathbf{func} & (\mathit{this\,entry}) & \mathit{empty}() & \mathbf{bool} \{ \\ & \mathbf{return} & \mathit{this}.b \equiv \mathit{this}.e \\ \} \end{array}
```

37. Search is processed by writing "/<regex>/" to "addr" file, but before regex-specific symbols of s have to be escaped In the case of empty search string we take it from *lentr*. Also we write the current position with the string to the history to track the search, because it already has a place.

```
\langle Make a search of s 37\rangle \equiv
   {
       debug("last\_entry\_: \_%v\n", lentr)
       if len(s) \equiv 0 {
          if \neg lentr.empty() {
              b = lentr.b
              e = lentr.e
              s = lentr.s
              \langle Set addr to b, e 34 \rangle
       } else if b \neq e {
          lentr = entry\{b, e, s\}
          ⟨Write history 53⟩
       es := escapeSymbols(s)
       debug("escaped\_search\_string:\_%q\n", es)
       if err := w.WriteAddr("/\%s/", es); err \neq nil  {
          debug(\texttt{"cannot}_{\square} \texttt{write}_{\square} \texttt{to}_{\square} \texttt{'addr'}_{\square} \texttt{of}_{\square} \texttt{the}_{\square} \texttt{window}_{\square} \texttt{with}_{\square} \texttt{id}_{\square} \% \texttt{d} : \underline{\ \ \ } \texttt{vn''}, id, err)
          (Unread event and continue 29)
   }
```

This code is used in sections 30 and 31.

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```
38.
\langle \text{Read addr into } b, e | 38 \rangle \equiv
   b, e, err = w.ReadAddr()
   if err \neq nil {
       (Unread event and continue 29)
   debug(\texttt{"read}\_\texttt{address}\_\texttt{b}:\_\texttt{\%v,}\_\texttt{e}:\_\texttt{\%v}\texttt{\n"},b,e)
This code is used in sections 23, 28, and 30.
39.
\langle \text{ Set dot to addr } 39 \rangle \equiv
   if w.WriteCtl("dot=addr") \neq nil  {
       debug("cannot_{\sqcup}write_{\sqcup}to_{\sqcup}'ctl'_{\sqcup}of_{\sqcup}the_{\sqcup}window_{\sqcup}with_{\sqcup}id_{\sqcup}%d:_{\sqcup}%s\n",id,err)
       (Unread event and continue 29)
   debug("set_{\sqcup}dot_{\sqcup}to_{\sqcup}addr\n")
This code is used in section 40.
40.
\langle \text{Show dot } 40 \rangle \equiv
   \langle Set dot to addr 39\rangle
   if w.WriteCtl("show") \neq nil {
       debug(\texttt{"cannot} \sqcup \texttt{write} \sqcup \texttt{to} \sqcup \texttt{'ctl'} \sqcup \texttt{of} \sqcup \texttt{the} \sqcup \texttt{window} \sqcup \texttt{with} \sqcup \texttt{id} \sqcup \texttt{\%d} : \sqcup \texttt{\%s} \setminus \texttt{n"}, id, err)
       (Unread event and continue 29)
   debug("{\tt show} \sqcup {\tt dot} \")
This code is used in section 23.
41. Acme does not produce standard commands in case of opened "event" file. So we have to add command
"Put" in case of the window is modified and "Undo" and "Redo" commands too.
\langle \text{Fix tag of the window 41} \rangle \equiv
       -, -, -, -, d, -, -, err := w.ReadCtl()
      if err \neq nil {
          debug("cannot_{\square}read_{\square}from_{\square}'ctl'_{\square}of_{\square}the_{\square}window_{\square}with_{\square}id_{\square}%d:_{\square}%s\n", id, err)
       } else {
          debug(\texttt{"dirty:} \llcorner \texttt{\%v} \verb|\| n \texttt{"}, d)
          del := []string{"Put", "Undo", "Redo"}
          var add [string
          if d {
              add = \mathbf{append}(\mathit{add}, \texttt{"Put"})
          add = \mathbf{append}(add, "Undo", "Redo")
          changeTag(w, del, add)
   }
This code is used in sections 18 and 24.
```

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```
42. Removing added commands on exit  \langle \text{Cleanup 15} \rangle +\equiv \\ \{ \\ del := \mathbf{append}([]\mathbf{string}\{\}, "Put", "Undo", "Redo") \\ changeTag(w, del, \mathbf{nil}) \\ \}
```

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Tracking search requests.

We create a window with history of search requests and make separated goroutine to process events from the window.

```
44.
\langle \, {\rm Types} \, \, {\color{red} 44} \, \rangle \equiv
   entry struct{
      b, e int
      s string
   }
This code is used in section 2.
45. Special histch channel is received entry to print them in the window
\langle \text{Global variables 5} \rangle + \equiv
   histch chan entry = make(chan entry)
46. On exit we should signal the goroutine to stop processing. It is made by closing histch channel
\langle \text{Cleanup } 15 \rangle + \equiv
   close(histch)
47.
\langle \text{ Variables outside the loop 47} \rangle \equiv
   \mathbf{var} \;\; hch \;\; \leftarrow \mathbf{chan} \;\; * goacme.Event
See also section 49.
This code is used in section 48.
48. The goroutine handles two variants of events.
\langle Start history processing 48\rangle \equiv
   go func(){
      ⟨ Variables outside the loop 47⟩
      for{
         select
            case entr, ok := \leftarrow histch:
               \langle \text{Process } entr \text{ entry from } histch 50 \rangle
            case ev, ok := \leftarrow hch:
               \langle \text{Process } ev \text{ event from } hch \text{ event channel of the window 51} \rangle
   }()
This code is used in section 3.
49.
\langle \text{ Variables outside the loop } 47 \rangle + \equiv
   \mathbf{var}\ h\ *goacme.Window
```

Events from histch channel is written to the history. Before writing a history entry we look for the address in the history window and write the entry only if it has not been found.

```
\langle \text{Process } entr \text{ entry from } histch | 50 \rangle \equiv
  if \neg ok {
     if h \neq \mathbf{nil} {
        h.Del(\mathbf{true})
        h.Close()
        h = \mathbf{nil}
     }
     return
  (Open history window, if it does not exist 54)
  if h.WriteAddr("/\#\%d,\#\%d/",entr.b,entr.e) \neq nil  {
     debug("writing_{\sqcup}to_{\sqcup}the_{\sqcup}history_{\sqcup}%d,%d\n", entr.b, entr.e)
     h.Write([]\mathbf{byte}(fmt.Sprintf("\%s:\#\%d,\#\%d_\%q\n",name,entr.b,entr.e,entr.s)))
     h. WriteCtl("clean")
  debug("selecting_the_current_position_#%d,#%d_in_the_history\n", entr.b, entr.e)
  es := fmt.Sprintf("#%d,#%d",entr.b,entr.e)
  (Make a selection of the current search request 52)
This code is used in section 48.
```

51. Event from hch channel is checked for a case the channel is close. In the case that means the history window is closed and we clear h and hch. Otherwise we just write the event back.

```
\langle \text{Process } ev \text{ event from } hch \text{ event channel of the window 51} \rangle \equiv
  if \neg ok {
     debug("history_is_closed\n")
     h.Del(\mathbf{true})
     h.Close()
     h = \mathbf{nil}
     hch = \mathbf{nil}
     continue
  h.UnreadEvent(ev)
  if ev.Type \equiv goacme.Look {
     debug("incoming_event:_{\square}%+v\n", ev)
     debug("selecting_{\sqcup}the_{\sqcup}current_{\sqcup}position_{\sqcup}%q_{\sqcup}in_{\sqcup}the_{\sqcup}history\n", ev. Text)
     es := escapeSymbols(ev.Text)
     \langle Make a selection of the current search request 52 \rangle
This code is used in section 48.
52.
\langle Make a selection of the current search request 52 \rangle \equiv
  if err := h.WriteAddr("/%s/-+", es); err \neq nil  {
      debug("writing_{\square} of_{\square} addr_{\square} failed:_{\square} %s \n", err)
     else if err := h.WriteCtl("dot=addr\nshow"); err \neq nil {
      debug("writing_of_ctl_failed:_w%s\n", err)
This code is used in sections 50 and 51.
```

```
16
       TRACKING SEARCH REQUESTS
53.
\langle \text{Write history 53} \rangle \equiv
  debug("request_{\sqcup}to_{\sqcup}store_{\sqcup}a_{\sqcup}history:_{\sqcup}%v, %v_{\sqcup}%q\n", b, e, s)
  histch \leftarrow entry\{b: b, e: e, s: s\}
This code is used in sections 23 and 37.
54. If the history window h does not exist, we create it.
\langle Open history window, if it does not exist 54 \rangle \equiv
  if h \equiv \mathbf{nil} {
     var err error
     if h, err = goacme.New(); err \neq nil  {
        return
     h.WriteCtl("name_{\perp}%s", name + "+History")
     if hch, err = h.EventChannel(1, goacme.AllTypes); err \neq nil  {
        return
This code is used in section 50.
```

55. *change Tag* function.

```
We read the tag of w window, remove all commands from del list and add all commands from add list.
```

```
func change Tag(w * goacme. Window, del [string, add [string)]
   if add \equiv \mathbf{nil} \wedge del \equiv \mathbf{nil} {
      return
    \langle \text{Read a tag of } w \text{ into } s | 56 \rangle
    \langle Split tag into tag fields after the pipe symbol 57\rangle
    \langle \text{ Compose } newtag | 58 \rangle
    \langle \text{ Clear the tag and write } newtag \text{ to the tag } 60 \rangle
```

56.

}

```
\langle \text{Read a tag of } w \text{ into } s | \mathbf{56} \rangle \equiv
    f, err := w.File("tag")
    if err \neq nil {
        debug("cannot_{\square}read_{\square}from_{\square}'tag'_{\square}of_{\square}the_{\square}window_{\square}with_{\square}id_{\square}%d:_{\square}%s\n", id, err)
        return
    if \_, err := f.Seek(0,0); err \neq nil  {
        debug(\texttt{"cannot}_{\square} \texttt{seek}_{\square} \texttt{to}_{\square} \texttt{the}_{\square} \texttt{start}_{\square} \texttt{'tag'}_{\square} \texttt{of}_{\square} \texttt{the}_{\square} \texttt{window}_{\square} \texttt{with}_{\square} \texttt{id}_{\square} \texttt{\%d} : \underline{\ \ \ } \texttt{n"}, id, err)
        return
    var b [1000]byte
    n, err := f.Read(b[:])
    if err \neq nil {
        debug("cannot\_read\_tag\_of\_the\_window\_with\_id\_%d:\_%s\n", id, err)
        return
    s := \mathbf{string}(b[:n])
This code is used in section 55.
```

§57 ahist (version 0.4.4) **57.** $\langle \text{Split tag into } tag \text{ fields after the pipe symbol } 57 \rangle \equiv$ if $n = strings.LastIndex(s, "|"); n \equiv -1$ { n = 0} else { n++s = s[n:]s = strings.TrimLeft(s, """) $tag := strings.Split(s, " \sqcup ")$ This code is used in section 55. **58.** $\langle \text{ Compose } newtag | 58 \rangle \equiv$ $newtag := \mathbf{append}([]\mathbf{string}\{\}, "")$ \langle Every part is contained in *del* we remove from *tag* 59 \rangle $newtag = \mathbf{append}(newtag, add \dots)$ $newtag = \mathbf{append}(newtag, tag...)$ This code is used in section 55. **59.** \langle Every part is contained in *del* we remove from $tag 59 \rangle \equiv$ for $_{-},v:=$ range del { for i := 0; $i\langle \mathbf{len}(tag); \{$ if $tag[i] \neq v$ { i++continue $\mathbf{copy}(tag[i:], tag[i+1:])$ $tag = tag[:\mathbf{len}(tag) - 1]$ } This code is used in section 58. 60. \langle Clear the tag and write *newtag* to the tag $60 \rangle \equiv$ s = strings.Join(newtag, " ")if $err := w.WriteCtl("cleartag"); err \neq nil$ { $debug("cannot_{\square}clear_{\square}tag_{\square}of_{\square}the_{\square}window_{\square}with_{\square}id_{\square}%d:_{\square}%s\n", id, err)$ return

 $debug(\texttt{"cannot}_{\square} \texttt{write}_{\square} \texttt{tag}_{\square} \texttt{of}_{\square} \texttt{the}_{\square} \texttt{window}_{\square} \texttt{with}_{\square} \texttt{id}_{\square} \text{\%d} : \underline{\ \ \ } \texttt{n"}, id, err)$

This code is used in section 55.

return

if $_, err := f.Write([]\mathbf{byte}(s)); err \neq \mathbf{nil} \{$

```
61.
```

```
func escapeSymbols(s string) (es string){
    for \_, v := \mathbf{range} \ s \ \{
       if strings.ContainsRune("|\\/[].+?()*^$",v) {
         es += " \ " 
       }
       es += \mathbf{string}(v)
    }
    return
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ahist - a simple search history for Acme

(version 0.4.4)

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