TCL and Expect

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What is TCL?

- Unix scripting language
- Intended for embedding in applications
- Shell-like syntax
- Low memory footprint

Input, Output, and Variables

Listing 1: File 0-io

```
1 #!/usr/bin/tclsh
2
3 set language TCL
4 puts "Hello, $language!"
5 puts {Hello, $language!}
6
7 puts stdout "Enter a string:"
8 gets stdin input
9 puts stdout "You said $input!"
```

Control flow

Listing 2: File 1-if

```
1 #!/usr/bin/tclsh
2
3 set flag true
4 if {$flag} {
5         puts True!
6 } else {
7         puts False!
8 }
```

Loops

Listing 3: File 2-loops

```
1  #!/usr/bin/tclsh
2
3  set input n
4  while {$input != y} {
5          puts "Would you like to quit? <y/n>"
6          gets stdin input
7  }
8
9  for {set i 0} {$i < 10} {incr i} {
10         puts $i
11 }
```

Example

Listing 4: File install

```
1  #!/usr/bin/tclsh
2
3  set fail true
4
5  puts "Install optional components? <y/n>"
6  gets stdin data
7  if {$data != y} {
8          exit
9  }
10
11 if {$fail} {
12         puts "Hardware not supported. Install will cause spontaneous"
13         puts "combustion. Continue? <y/n>"
14         gets stdin data
15         if {$data != y} {
16                 exit
17         }
18 }
19
20 puts "Install will take 10Gb. Continue? <y/n>"
21 gets stdin data
```

Whitespace

Listing 5: File 3-ifbroken

```
1 #!/usr/bin/tclsh
2
3 set flag true
4 if {$flag}
5 {
6         puts Yay!
7 }
```

Whitespace

Listing 6: File 4-iffixed

```
1  #!/usr/bin/tclsh
2
3  set flag true
4  if {$flag} {
5          puts Yay!
6  }
7  if {$flag} \
8  {
9          puts Yay!
10 }
```

Whitespace

Listing 7: File 5-comments

```
1 #!/usr/bin/tclsh
2
3 puts "Blabla" # Witty comment
4
5 puts "Blabla"; # Witty comment
```

Grouping

- Quotes group arguments
- Braces disable substitution in a group
- Square brackets are replaced by the execution of that command

Listing 8: File 6-brackets

```
puts [expr 2 + 2]
```

Data Structures

Listing 9: File 7-structures

```
1  #!/usr/bin/tclsh
2
3  set mylist {a b c d}
4  puts $mylist
5  puts [lindex $mylist 0]
6  puts [llength $mylist]
7
8  set myarray(foo) bar
9  set myarray(bazz) buzz
10 parray myarray
11 puts $myarray(foo)
```

Procedures

Listing 10: File 8-proc

```
1 #!/usr/bin/tclsh
2
3 proc sum {arg1 arg2} {
4     set x [expr {$arg1 + $arg2}]
5     return $x
6 }
7 puts "The sum of 2 + 3 is: [sum 2 3]"
```

What is Expect?

- Extension to TCL
- Spawns and manages child processes
- Handles stdin and stdout of children

Spawn

Listing 11: File 9-spawn

```
1 #!/usr/bin/expect
2 spawn cat 9-spawn
3 puts $spawn_id
```

Expect

Listing 12: File 10-expect

```
1 #!/usr/bin/expect
2 spawn cat 10-expect
3 expect expect
4 puts $expect_out(buffer)
5 expect $spawn_id eof
```

Send

Listing 13: File 11-send

```
1 #!/usr/bin/expect
2
3 spawn banner
4 expect Message:
5 send :-)\n
6 expect eof
```

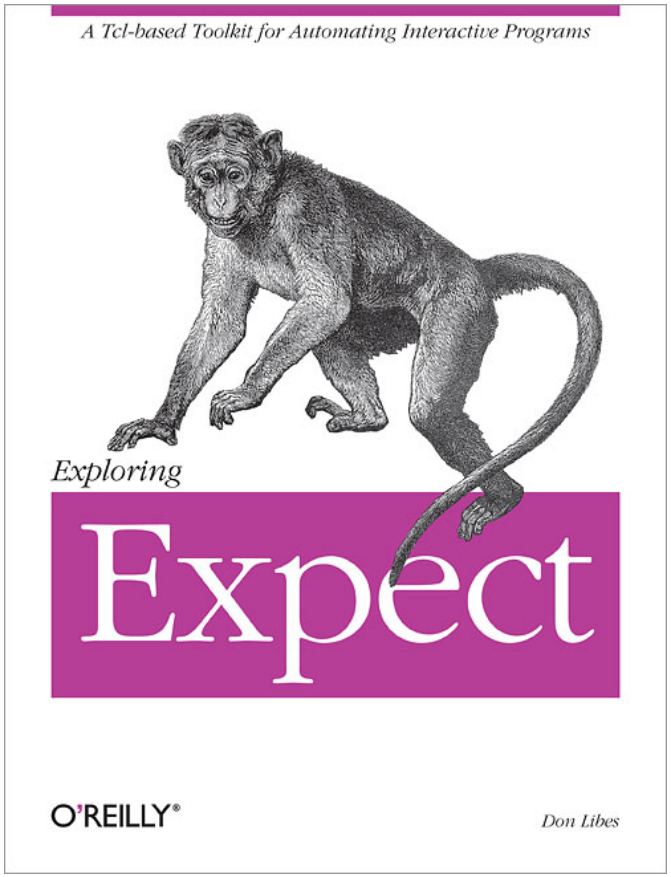
Autoinstall

Listing 14: autoinstall

```
1  #!/usr/bin/expect
2
3  spawn ./install
4
5  expect "Install optional components? <y/n>"
6  send y\n
7
8  expect "combustion. Continue? <y/n>" {
9          send "n\n"
10 } "Install will take 10Gb. Continue? <y/n>" {
11         send y\n
12 }
13
14 expect eof
```

Hunt the Wumpus

The book


A Tcl-based Toolkit for Automating Interactive Programs
Exploring
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