

```
1: // $Id: testtrees.java,v 1.1 2014-01-16 17:43:14-08 - - $
2:
3: import static java.lang.System.*;
4:
5: class testtrees {
6:
7:     static class printer implements visitor<String> {
8:         public void visit (String item) {
9:             out.printf ("%s\n", item);
10:        }
11:    }
12:
13:    public static void main (String[] args) {
14:        String[] arguments = new String [args.length];
15:        for (int itor = 0; itor < args.length; ++itor) {
16:            arguments[itor] = "args[" + itor + "]=\"" + args[itor] + "\"";
17:        }
18:        tree<String> the_tree = new tree<String> (arguments);
19:        the_tree.visit (new printer ());
20:    }
21:
22: }
```

```
1: // $Id: tree.java,v 1.1 2014-01-16 17:43:14-08 - - $
2:
3: class tree<item_t> {
4:
5:     private class node {
6:         item_t item;
7:         node left;
8:         node right;
9:     }
10:
11:     private node root;
12:
13:     public tree (item_t[] argitems) {
14:         if (argitems.length == 0) return;
15:         java.util.ArrayList<node> nodes = new java.util.ArrayList<node>();
16:         for (int itor = 0; itor < argitems.length; ++itor) {
17:             node tmp = new node ();
18:             tmp.item = argitems[itor];
19:             nodes.add (tmp);
20:             int parent = (itor + 1) / 2 - 1;
21:             if (parent < 0) continue;
22:             node parentnode = nodes.get (parent);
23:             if (itor % 2 == 1) parentnode.left = tmp;
24:             else parentnode.right = tmp;
25:         }
26:         root = nodes.get (0);
27:     }
28:
29:     private void visit_rec (node a_node, visitor<item_t> vis) {
30:         if (a_node == null) return;
31:         visit_rec (a_node.left, vis);
32:         vis.visit (a_node.item);
33:         visit_rec (a_node.right, vis);
34:     }
35:
36:     public void visit (visitor<item_t> the_visitor) {
37:         visit_rec (root, the_visitor);
38:     }
39:
40: }
41:
```

```
1: // $Id: visitor.java,v 1.1 2014-01-16 17:43:14-08 - - $
2:
3: interface visitor<item_t> {
4:     public void visit (item_t item);
5: }
6:
```

```
1: #!/usr/bin/perl
2: # $Id: pxref.perl,v 1.1 2014-01-16 17:43:14-08 - - $
3: use strict;
4: use warnings;
5:
6: $0 =~ s|^(\.*/)?(?:[/]+)/*$|$2|;
7: my $status = 0;
8: END {exit $status}
9: $SIG{'__WARN__'} = sub {print STDERR "$0: @_"; $status = 1};
10: $SIG{'__DIE__'} = sub {warn @_; exit};
11:
12: my $sep = "\n" . ":" x 65 . "\n";
13: for my $filename (@ARGV ? @ARGV : "-") {
14:     open my $file, "<$filename" or do {warn "$filename: $!\n"; next};
15:     print "$sep$filename$sep\n";
16:     my %xref;
17:     while (defined (my $line = <$file>)) {
18:         m/^\d*$/ or push @{$xref{$_}}, $. for split m/\W+/, $line
19:     }
20:     close $file;
21:     print "$_ @{$xref{$_}}\n" for sort keys %xref;
22: }
23:
```

```
1: #!/bin/sh -x
2: # $Id: mk,v 1.2 2014-01-16 17:46:25-08 - - $
3: JAVA=*.java
4: SRC="$JAVA *.perl $0"
5: cid + $SRC
6: javac $JAVA
7: echo Main-class: testtrees >Manifest
8: jar cvfm testtrees Manifest *.class
9: rm Manifest
10: chmod +x testtrees
11: mkpspdf Listing.ps $SRC
```