

Bourne Shell Scripts

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Why Use Shell Scripts?

- To automate repetitive and/or complex tasks
- Portable to all Unix systems, including Unix emulations on NT
- Why Bourne shell?
 - csh/tcsh are convenient for C/C++ programmers, but flakey
<http://www.mars.org/home/rob/docs/csh-whynot.html>

Shell Data and Primitives

- Variables (untyped)

```
$ FOO=foo
$ echo $FOO
foo
```
- Pipelines
 - Any commands that you can enter at the shell prompt, connected via pipes (|)

```
$ ls | less
```
- Lists
 - Combinations (concatenations and boolean) of pipelines

```
$ egrep TBD *.tex && echo 'unfinished!'
```

Shell Statements

- conditional

```
if list; then
. . .
elif list; then
. . .
else
. . .
fi
```
- loops

```
for name in word; do
. . .
done

while list; do
. . .
done
```

Predefined Variables

```
HOME=/home/cs/faculty/levine
LOGNAME=levine
PATH=/usr/bin:
SHELL=/usr/bin/sh
```

Example

```
#!/bin/sh
# $Id: sh.tex,v 1.3 1999/12/03 23:23:15 levine Exp $

lab=`basename $0`
/pkg/gnu/bin/cvs -d /home/cec/class/cs342/cvs-repository \
  checkout $lab

if [ $? -eq 0 ]; then
  echo "You now have the $lab distribution in "`pwd`"/$lab
  echo "Please note that it's in the $lab subdirectory."
  echo "After completing the implementation, use make to b
  echo " "
  echo 'At any time, you can use "cvs update" to update yo
  echo 'And, "cvs diff file" will show any changes that yo
  echo 'to file.'
fi
```

For Further Information

- `man sh`
- `info bash` for GNU bash
- Kernighan and Pike, *The UNIX (R) Programming Environment*, Prentice-Hall, 1984.