Chapter 13 - Basic Shell Scripting

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Script Language

- Script is a program that runs on the interpreter
- Unix shell is an interpreter (as well as DOS-Shell)
- Shell reads the script and runs it line-by-line
- Languages like C/C++ must be compiled before running

Usage

- Shell Scripts are used for System Administration
- Automate a vast range of jobs with a few simple scripts
    - Save time by automating repetitive jobs

Script file

Script file (text file) using vi

```
#!/bin/sh

# executed by /bin/sh
# Shebang: hash(#), bang(!)

a=1 # variable = value
a=`expr $a+1` # back quote for expressions

read var #read from keyboard and save to variable var
```

Example

```
#!/bin/sh

a=1
b=3
c=`expr $a + $b + 2`
echo "c is $c"
echo "input a:"
read a
echo "input b:"
read b
echo "a is $a, b is $b"
```

Output:

```
$ sh my2.sh
c is 6
input a:
3
input b:
4
a is 3, b is 4
```

Special Variables

- ? : previous command's exit status
- $: PID of the current shell
- - : Options at the start-up
- ! : PID of the last background process
- 0 : script name
- 1-9 : command-line arguments 1-9
- - : last argument

Flow Control

- Test command

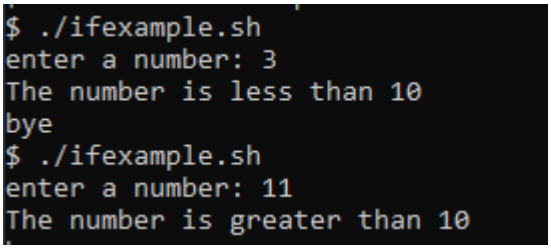
```
- $ test expression
- $ [expression]
```

- Operator: =, <, > !=
- Conditional FLow Control
  - If-then-fi, if-then-else-fi, case-in-esac
- Iterative Flow Control
  - While-do-done, until-do-done

If condition example

```
/usr/ucb/echo -n 'enter a number: ' read num
if test $num -gt 10
then
 echo The number is greater than 10
else
 echo The number is less than 10
fi
echo bye
```

Output:


$ ./ifexample.sh
enter a number: 3
The number is less than 10
bye
$ ./ifexample.sh
enter a number: 11
The number is greater than 10