

1 Bash Exercises

We do not expect you to be able to write your own commands or develop your own scripts straight away, but we shall teach you a lot about **bash** by using it and seeing what happens.

The exercises in this handout shall take you through **bash** in detail. This should get you the stage where you are confident enough to read commands and scripts written by others, figure out what they are doing, and then adapt them for your own purposes.

Try these and see if you can explain the output you get. Use the up arrow to get the previous commands, and the left and right arrows to edit it.

```
1    $ /bin/ls /bin
2    $ /bin/ls /sbin
3    $ /bin/ls /usr/bin
4    $ /bin/ls /usr/sbin
5    $ /bin/ls /usr/local/bin
6    $ /bin/ls /bin /sbin /usr/bin /usr/sbin /usr/local/bin|less
7    $ echo hello, world
8    $ echo hello, I am here!
9    $ echo hello, world; I am here!
10   $ echo the @ is a symbol
11   $ echo the # is a symbol
12   $ echo the > is a symbol
13   $ cat is
14   $ echo "the > is a symbol"
15   $ echo the * is a symbol
16   $ echo the & is a symbol
17   $ echo the $ is a symbol
18   $ echo the !^ key
19   $ echo the ~ key
20   $ echo the ` key
21   $ echo the ( key
```

```
22    $ echo $n
23    $ echo \$n
24    $ echo #hello
24    $ echo h#ello
24    $ n=blah
25    $ echo $n
26    $ n=1*2*3 ; echo $n
27    $ let n=1*2*3 ; echo $n
28    $ date
29    $ /bin/date
30    $ /bin/date -R
31    $ /bin/date -R|tr -d ','
32    $ /bin/date -R|awk '{print $5}'
33    $ /bin/date -R|awk '{print $5}'|tr ':' ' '
34    $ /bin/date -R|awk '{print $5}'|tr ':' ' ' |awk '{print $1$2}'
35    $ read value
36    $ echo value
37    $ echo $value
38    $ read -p "enter value < " value
39    $ echo $value
40    $ name=""
41    $ while [ $name != bashful ]
42    > do
43    > read -p "name ? " name
44    > done
45    $ name=""
```

```
46  $ while [ "$name" != "bashful" ]; do read -p "name ? " name; done
47  $ name=
48  $ until [ $name == bashful ]
49  > do
50  > read -p "name ? " name
51  > done
52  $ name=""
53  $ while [ "$name" != "bashful" ]; do read -p "name ? " name; done
54  $ dirs=/bin /sbin /usr/bin /usr/sbin
55  $ dirs="/bin /sbin /usr/bin /usr/sbin"
56  $ /bin/ls $dirs
57  $ /bin/ls $dirs|less
58  $ pwd
59  $ echo pwd
60  $ echo $pwd
61  $ echo ${pwd}
62  $ echo $(pwd)
63  $ echo '$(pwd)\'
64  $ echo "$(pwd)"
65  $    $( )
66  $ n=blah; echo "$n is the value; > is a symbol"
67  $ n=blah; echo '$n is the value; > is a symbol\'
68  $ ls
69  $ /bin/ls
70  $ /bin/ls -H
71  $ /bin/ls -H -P
```

```
72  $ /bin/ls -HP
73  $ alias ls='/bin/ls -HP'
74  $ ls
75  $ which firefox
76  $ which iceweasel
77  $ iceweasel
78  $ /bin/ls -l firefox
79  $ $( )
80  $ /bin/ls -l $(which firefox)
81  $ /bin/ls -l $(which iceweasel)
82  $ touch zap
83  $ cat zap
84  $ for item in a b c
85  > do
86  > echo $item
87  > done
88  $ for item in a b c; do echo $item; done
89  $ list="a b c"
90  $ for item in $list; do echo $item; done
91  $ seq 1 9
92  $ seq -w 00001 9
93  $ for item in $( ); do echo $item; done
94  $ for item in $(seq -w 0001 9); do echo here is $item; done
95  $ cat > file <<"eof"
96  > line1
97  > line2
```

```
98     > eof
99     $ cat file
100    $ for item in $(cat file); do echo $item; done
101    $ cat > file <<"eof"
102    > line 1
103    > line 2
104    > eof
105    $ cat file
106    $ for item in $(cat file); do echo $item; done
107    $ for item in "$(cat file)"; do echo $item; done
108    $ for item in "$(cat file)"; do echo "$item"; done
109    $ cat file|while read item; do echo $item; done
110    $ cat file|while read line; do echo $line; done
111    $ cat file
112    $ cat file|wc -l
113    $ let n="$(cat file|wc -l)"
114    $ echo $n
115    $ if [ $n -gt 1 ]
116    > then
117    > echo more than one line
118    > else
119    > echo one or no lines
120    > fi
121    $ /bin/ls -F
122    $ /bin/ls -F|grep '/'
123    $ /bin/ls -F|grep '/'|wc -l
```

```
124  $ cat > numd << "end"
125  > #!/bin/bash
126  > echo "there are $(/bin/ls -F|grep '/'|wc -l) directories"
127  > exit 0
128  > end
129  $ cat numd
130  $ numd
131  $ ./numd
132  $ chmod +x numd
133  $ ./numd
134  $ pwd
135  $ alias numd='$HOME/numd'
136  $ numd
137  $ explore(for exploring possible commands)
138  select item in $LIST
139  do
140      [whatever]
141  done
142  -- Positional parameters
143  #!/bin/bash
144  # call a b c d
145  while [ ! -z "$1" ]
146  do
147      (do some stuff)
148      shift
149  done
150  exit 0
```