

Send error messages to stderr

```
$ echo Error >&2 # Send output to standard error
Error
$ {
> echo Error >&2
> } >output-file # Redirect standard output
Error
$
```

Explicitly specify directories

```
$ touch a # Create a file
$ mkdir directory # Create a directory
$ mv a directry # Move into directory, but with typo
$ ls
directory directry
$ mv directry a # Restore file
$ mv a directry/ # Move to directory with typo and safeguard
mv: cannot move 'a' to 'directry/': No such file or directory
$ mv a directory/ # Move to directory with typo and safeguard
$ ls
directory
$ ls directory/
a
$
```

Clean up temporary files

```
$ cat >tmpdir.sh <<\EOF
#!/bin/sh
> TMPDIR="${TMP:-/tmp}/$$" # Create temporary directory name
>
> trap 'rm -rf "$TMPDIR"' 0 # Remove it when exiting
>
> trap 'exit 2' 1 2 15 # Exit when the program is interrupted
>
> mkdir "$TMPDIR" # Create the directory
>
> # Do some work in $TMPDIR
> EOF
$
```

Beware of spaces in paths

```
$ ls 'Program Files' | wc -l
52
$ ls Program\ Files | wc -l
52
$ a='Program Files'
$ ls $a | wc -l
ls: cannot access 'Program': No such file or directory
ls: cannot access 'Files': No such file or directory
0
$ ls "$a" | wc -l
52
$
```

Separate arguments with null

```
$ find . -type f -print0 |
> xargs -0 grep pattern /dev/null
```

```
$ find . -type f -print0 | # Null-terminate output of find
> xargs -r -0 grep pattern
$ grep -lZ -r pattern . | # Null-terminate output of grep
> xargs -0 rm -f # Remove found files
$ find /vol/a -type d | # Find directories
> sed s/a/b/ | # Change a into b
> tr \n \0 | # Change newline into a null byte
> xargs -0 mkdir -p # Recreate directory hierarchy under /vol/b
$
```

Beware of strange file names

```
$ if [ "x$a" = xfoo ] # Variable in double quotes and prepended with x
> then
>     echo 'foo found'
> fi
$
```

Sanitize scripts with shellcheck

```
$ cat >script.sh <<\EOF
> #!/bin/sh
> echo `cat * | wc -c`
> EOF
$ shellcheck script.sh
```

In script.sh line 2:

```
echo `cat * | wc -c`
^-- SC2046: Quote this to prevent word splitting.
^-- SC2005: Useless echo? Instead of 'echo $(cmd)', just use 'cmd'.
^-- SC2006: Use $(..) instead of legacy ``..``.
     ^-- SC2035: Use ./*glob* or -- *glob* so names with dashes won't
         become options.
$
```