

← console

```
$ ./detab <
```

hello

hello

^D

```
$ ./detab <in >out
```

```
$ expand <in >ret
```

```
$ diff out ret
```

```
$ ./detab <in | tr ' ' -' ← see what program is doing
```

Program

```
#include <stdio.h>
```

```
int main(int argc, char *argv[]) {
```

```
    int c;
```

```
    for (c=getchar(); c != EOF; c=getchar()) {
```

```
        // or while (c=getchar()) != EOF) {
```

```
            putchar(c);
```

```
    }
```

```
    return 0;
```

```
}
```

while (c = getchar() != EOF) ← read char, compare to EOF
assign comparison result to c

Program

```
#include <stdio.h>
```

```
int main (int argc, char *argv[]) {
```

```
    while (putchar (getchar()) != EOF) ← WRONG  
        /* nothing */;
```

BC it writes
EOF

```
    }
```

```
    return 0;
```

```
}
```

UNIX Stuff

files → collection of stuff

filesystem

↳ tree of files starting at root (/)

↳ name files with paths *with respect to*

- relative: wrt *current working directory*

- absolute: relative to root

use this gcc → /usr/local/bin/gcc

↳ to run a program → name it

e.g. ~ps-cs357/demos/try Asgn 1

Identity:

user ID (uid)

group ID (gid)

program → file with execute permissions

The shell (command interpreter)

- runs programs (found in PATH)

- IO redirection

< from

> into

| pipe ← connects output with input of another one

e.g. a | b output of a to in of b

useful commands: e.g. grep so roster | wc -l

connecting : ssh, sftp

navigation : pwd, cd, mkdir, rmdir,

files : ls, cat, more, less, rm, mv

permissions : ls-l, chmod

utilities : diff, sort, grep

apropos keyword