time   ./htable infile

gcc   -pg ... prog.c

./a.out stuff

gprof   a.out

new array where encodings are saved and corresp.
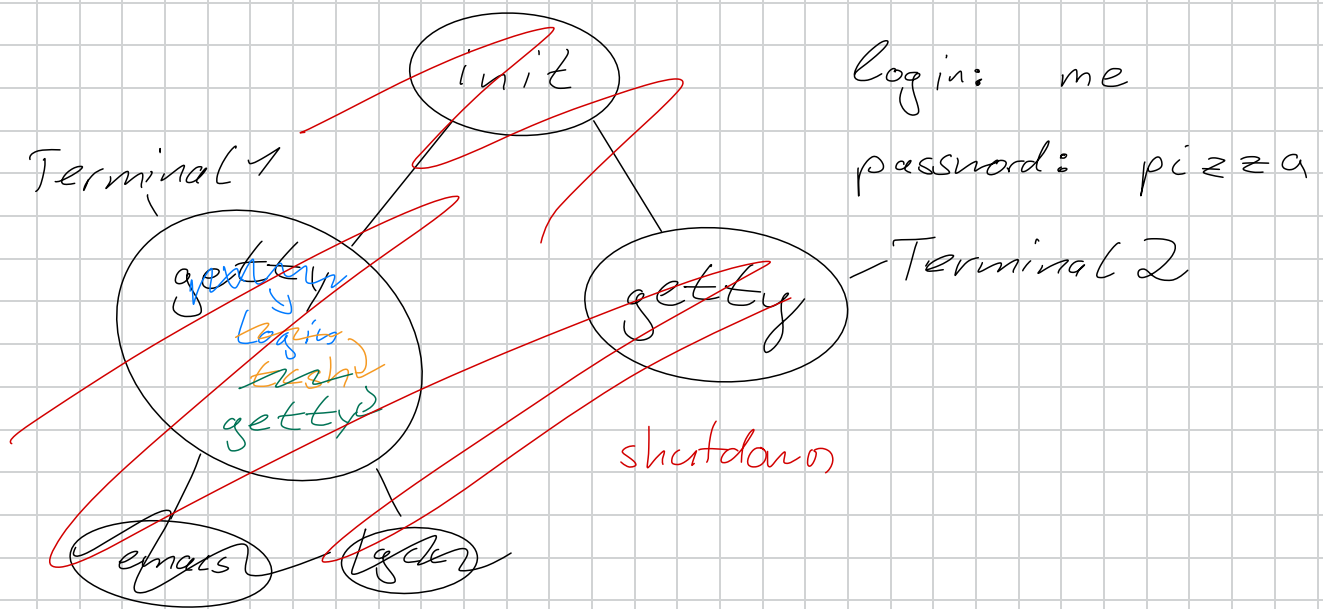bytes are indexes.

UNIX & Identity

Based on

/etc/passwd
↳ each user has an entry:
name:passwd:uid:gid:GECOS:home_dir:shell

```c
char *crypt(const char *key, const char *salt);
```

/etc/shadow

/etc/group

login: me
password: pizza
_Terminal 2

Terminal 1

getty
login:
tiulu
getty

init

getty

shutdown

emacs   tcsh

Directories
↳ files that know about other files

↳ interface

DIR * opendir (const char *path);

int   closedir (DIR   *dir);

struct   dirent   * readdir (DIR *dir);

struct   dirent {
              .
              .
              .
              char d_name [NAME_MAX+1];
}

```c
int main (void) {
    struct dirent  * ent;
    DIR    *d;
    d = opendir (".");
    // check here
    while ((ent = readdir (d))) {
        printf ("%s\n", ent->d_name);
    }
    close (d);
    return 0;
}
```

NEXT
=> UNIX IO

    Basic Abstraction
       ↳ file descriptor; small integer
                            index into table

       ↳ open at birth

            STDIN_FILENO
            STDOUT_FILENO
            STDERR_FILENO