# CS326    File Descriptors

## Coding Assistants

1) Code yourself
2) Ask for Hints on getting started
3) Ask for hints on problems/bugs

If you do generate a solution, then inspect and refactor the code.

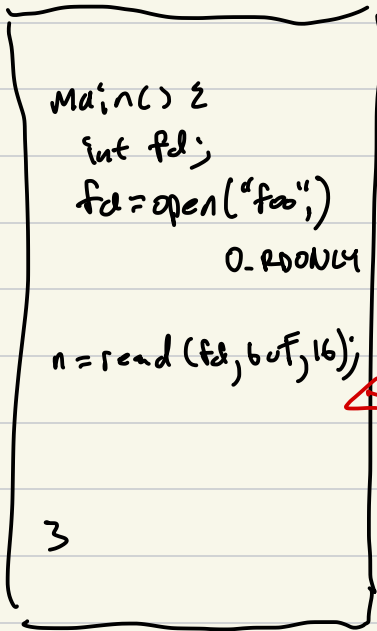Ask for explanations
Ask clarifying question

# File Descriptors

Key UNIX/Linux abstraction

Process

```
Main() {
  int fd;
  fd = open ("foo",)
          O_RDONLY

  n = read (fd, buf, 16);

3
```

U

K
Proc

| 0 | stdin |
| 1 | stdout |
| 2 | stderr |
| 3 | " |

Console

File System
File

disk

bytes

file
descriptor
table
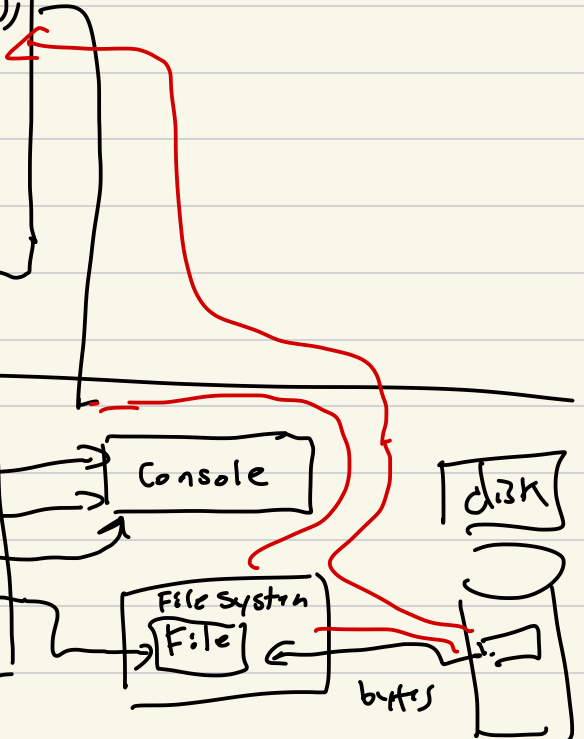
File I/O with a buffer.

$ Cat foo
hello

char buf [512]

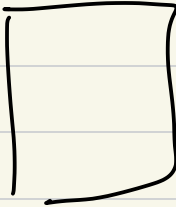h | c | | | | | ... |
0                    511

U

k
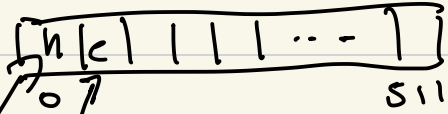
fd = open ("foo")

ref
handle

read (fd, buf, n)

file struct
pos.

File

readline ( )

maxlen = 255

cat  - n

_____

while (u != -) {
        u = readline ( but )
        print    line #  ,    line str
    int index = o
    fd = open ( "foo.txt" )

index = do- cat ( fd , &index)
        close (fd)
        fd = open ( "bar.txt" )
        do- cat (fd , &index)

    close (fd )

Sort

assumptions
    max line len   80 char
    max # of lines

char linebuf [100][80]

#1    read all  lines

= line_gt      ( char * line_a , char * line_b)
                    ↑
              lexicographic
                 order

    " 200 "  >  " abc "