



NWEN241 File Handling

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File Handling

- Low-level I/O

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2

Low-Level I/O

- Low-level I/O functions
 - open, close: open, close files (keyboard, screen), similar to fopen, fclose
 - read, write: read, write (similar to fread, fwrite)
 - lseek: random access (similar to fseek)
 - creat, unlink: create, remove a file
- Find out more from man

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3

Low-Level I/O

- Comparison
 - open/close vs. fopen/fclose
 - read/write vs. fread/fwrite
 - ...

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4

Low-Level I/O

- Comparison

- open/close vs. fopen/fclose
- read/write vs. fread/fwrite

...

/* the later relies on the former */

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5

Low-Level I/O

```
/* Change the case of letters in a file. */
#include <ctype.h>
#include <fcntl.h>
#include <unistd.h>          /* use io.h in MS_DOS */
#define BUFSIZE 1024

int main(int argc, char **argv)
{
    char    mybuf[BUFSIZE], *p;
    int     in_fd, out_fd, n;

    in_fd = open(argv[1], O_RDONLY);
    out_fd = open(argv[2], O_WRONLY | O_EXCL | O_CREAT, 0600);
    while ((n = read(in_fd, mybuf, BUFSIZE)) > 0) {
        for (p = mybuf; p - mybuf < n; ++p)
            if (islower(*p))
                *p = toupper(*p);
            else if (isupper(*p))
                *p = tolower(*p);
        write(out_fd, mybuf, n);
    }
    close(in_fd);
    close(out_fd);
    return 0;
}
```

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6

Low-Level I/O

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```
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7

Low-Level I/O

```
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{
    char    mybuf[BUFSIZE], *p;
    int     in_fd, out_fd, n;

    in_fd = open(argv[1], O_RDONLY);
    out_fd = open(argv[2], O_WRONLY | O_EXCL | O_CREAT,
        0600);
    /* it is an error if file is already there */
    /* create the file if it is not there */
    /* 0600: access permission, rw */

    ...

}
```

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8

Low-Level I/O

```
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{
    ...
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9

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```

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10

Next Lecture

- Writing larger programs

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11