

Today: Read and write binary files out of order

Computer Programming 143 – Lecture 26

File Processing III

Faculty of Engineering



(Binary) file

Bavuma	128
Ackerman	18
Bedingham	17
DeZorzi	51
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Binary files

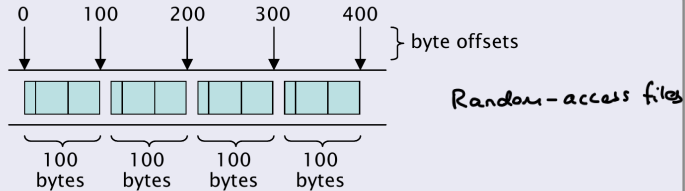
- `fwrite (...)`
- `fread (...)`
- `fseek (...)`

11.5 Random-Access Files

Random-Access Files

- Access individual records without searching through other records
- Instant access to records in a file
- Data can be inserted without destroying other data
- Data previously stored can be updated or deleted without overwriting

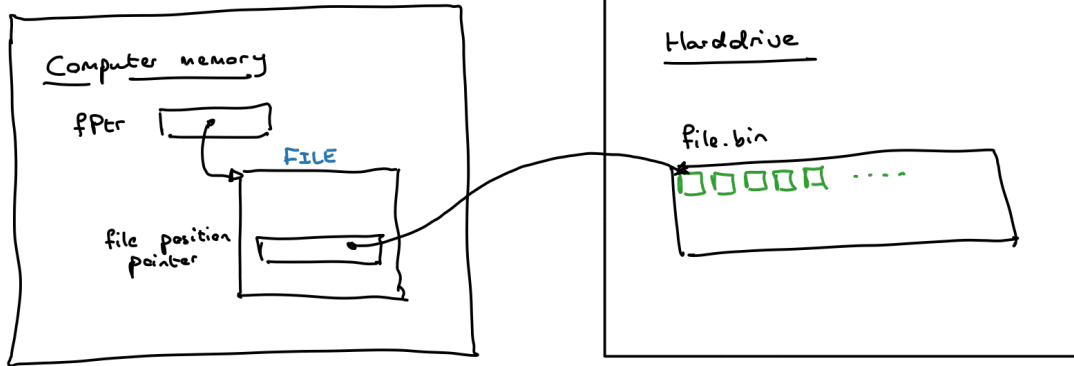
Implemented using fixed-length records



- Text files usually do not have fixed-length records and are therefore handled sequentially

How random access works

```
FILE *fPtr;  
fPtr = fopen("file.bin", "rb");
```



11.7 Writing Data to a Random-Access File II

fseek()

- Sets file position pointer to a specific position

```
int fseek( FILE *stream, long int offset, int whence );
```

- stream – pointer to file
- offset – file position to seek (relative to the position specified in whence)
- whence – specifies reference point in file for offset
 - SEEK_SET – seek starts at beginning of file
 - SEEK_CUR – seek starts at current location in file
 - SEEK_END – seek starts at end of file

Writing data with fseek()

```
struct coord xPnt = { 1.0, 5.0 };  
fseek( fPtr, 4 * sizeof( struct coord ), SEEK_SET );  
fwrite( &xPnt, sizeof( struct coord ), 1, fPtr );
```

- Positions the file position pointer at the 5th element from the beginning of the file and writes structure xPnt.

11.8 Reading Data from a Random-Access File

Reading data with `fseek()`

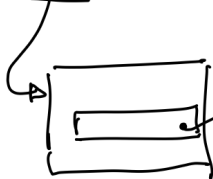
- Reads a specified number of bytes from a file into memory

```
struct coord xPnt;  
fseek( fPtr, 4 * sizeof( struct coord ), SEEK_SET );  
fread( &xPnt, sizeof( struct coord ), 1, fPtr );
```

- Can read several fixed-size array elements
 - Provide pointer to array
 - Indicate number of elements to read
- To read multiple elements, specify in third argument

Memory

fPtr



Client



Harddrive

BLABS.A.bin

