

# File Access Method

**Sequential access** (used by file systems - most common)

read bytes one at a time, in order (read/write next)

**Random access** (used by file systems)

random access given block/byte number (read/write bytes at offset n)

**Indexed access** (used by databases)

- file system contains an index to a particular field of each record in a file
- reads specify a value for that field and the system finds the record via the index

**Record access** (used by databases)

- file is array of fixed-or-variable-length records
- read/written sequentially or randomly by record number

# Basic File operations

## Unix

- `create(name)`
- `open(name, how)`
- `read(fd, buf, len)`
- `write(fd, buf, len)`
- `sync(fd)`
- `seek(fd, pos)`
- `close(fd)`
- `unlink(name)`

## Windows

- `CreateFile(name, CREATE)`
- `CreateFile(name, OPEN)`
- `ReadFile(handle, ...)`
- `WriteFile(handle, ...)`
- `FlushFileBuffers(handle, ...)`
- `SetFilePointer(handle, ...)`
- `CloseHandle(handle, ...)`
- `DeleteFile(name)`
- `CopyFile(name)`
- `MoveFile(name)`