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| Allocation (bytes) | Read write time (ms) |
|--------------------|----------------------|
| 1024 | 41 |
| 2048 | 52 |
| 4096 | 67 |
| 8192 | 83 |

Design

In my design there is a structure called Block which represents a block in the memory. This structure is defined as union therefore it can represent different kinds of block types. Size of the Block union is 1 KB. Even though some union variants are smaller all unions of the same type has the same size.

My directory entries holds the first block, which is the first allocated block, last block, size and the position of the read buffer. Since writes are always done as appending appending position can be determined by the file size therefore buffer is only used for reading. There is also status tag which hold status of the file.

Metadata information holds only the number of data blocks and nothing else. Since number of directory entries and fat blocks are constant no additional meta information was needed.