



Fragment Example

At first it is 5KB and it is 2KB

2. Append A to fd1  
`write(fd1, "A");`

Then fd1 is 6 KB

3. Append A to fdd1 again

```
write(fdd1, "A");
```

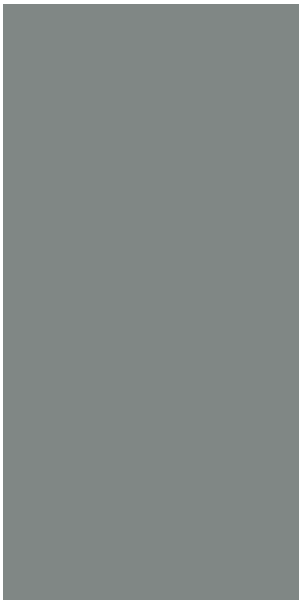
- Not allowed to use fragments across multiple blocks

✓ Copy old fragments to new block

→ Then find 7KB







B

B



A

A

A



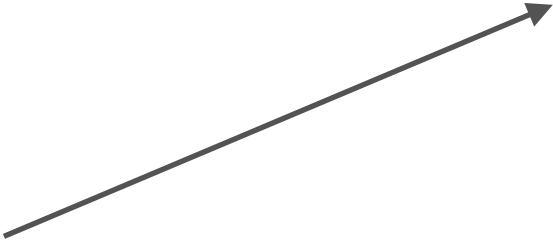
A

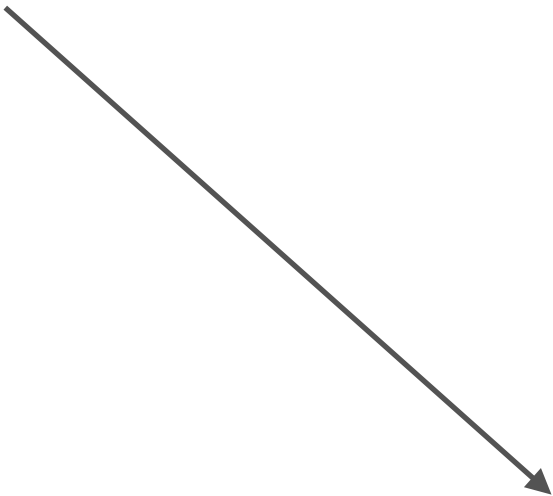


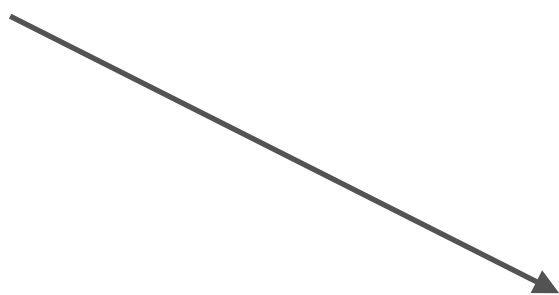
fd1

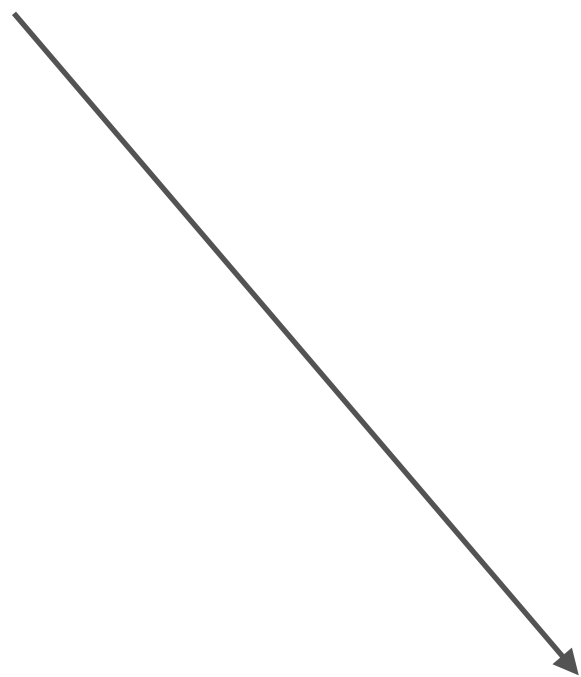
A large, solid orange circle occupies the entire frame. In the center of this circle, the text "fd2" is written in a white, lowercase, serif font. The letters are evenly spaced and centered horizontally and vertically within the circle.

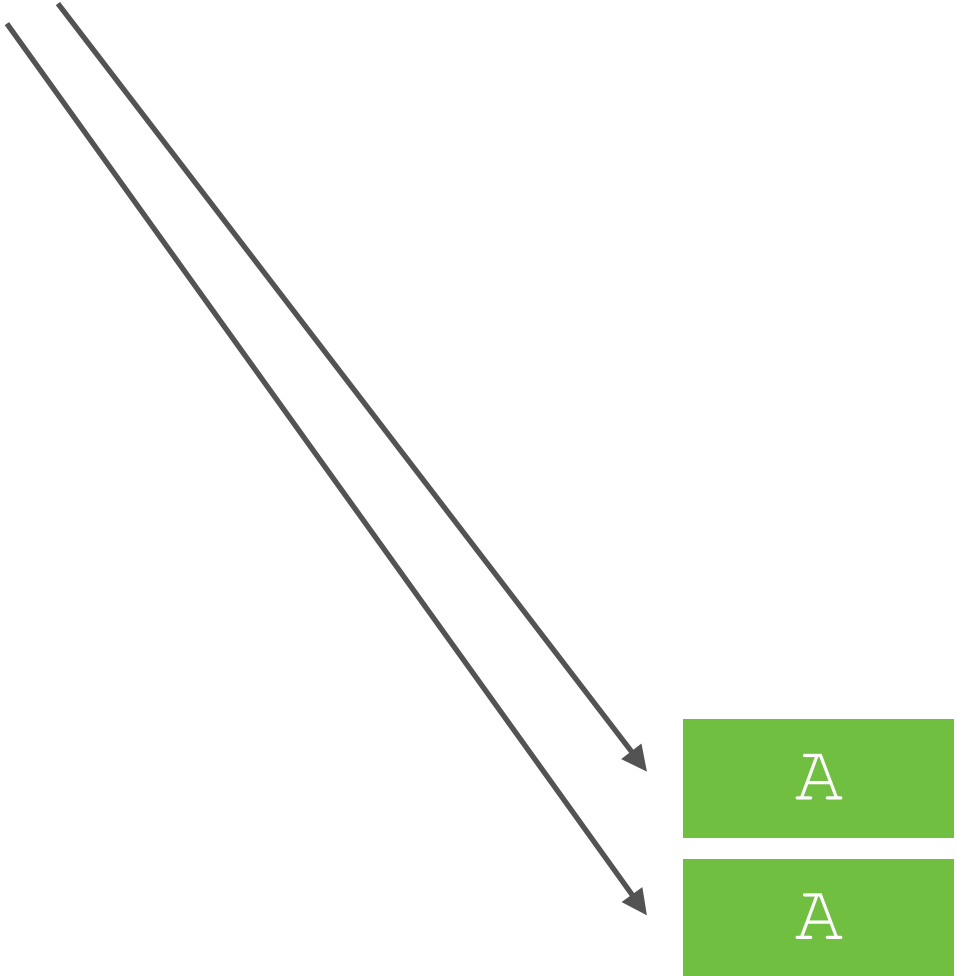
fd2



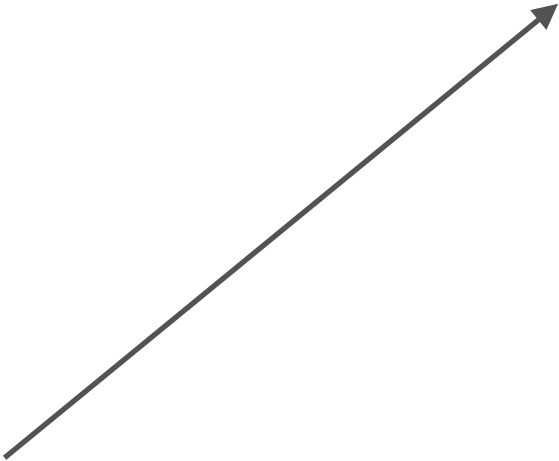


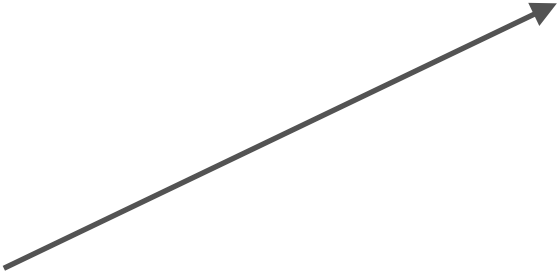












Block size: 4096B

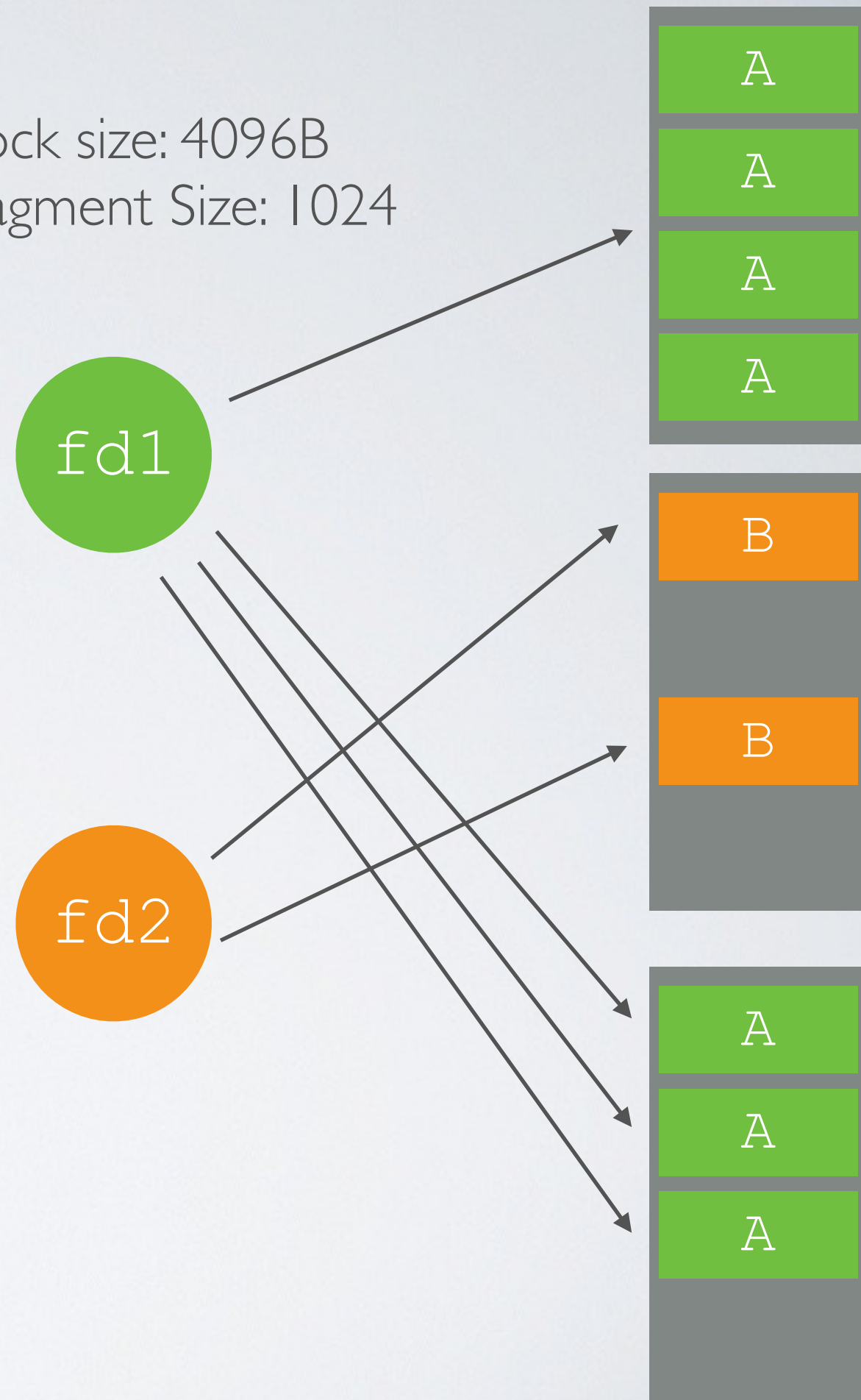
Fragment Size: 1024

# Fragment Example

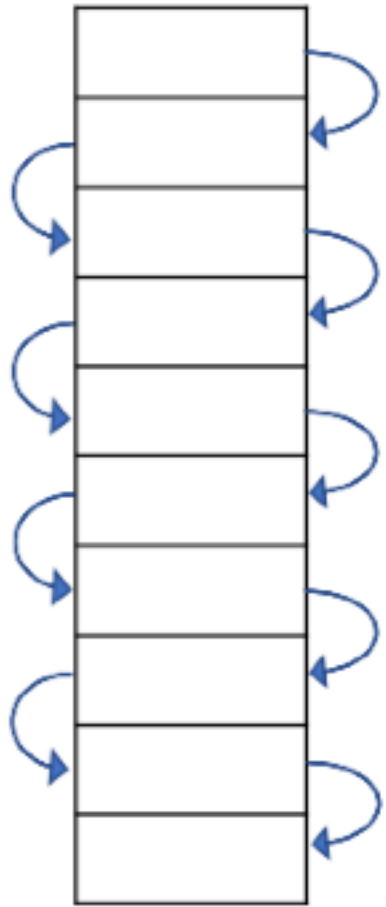
1. At first fd1 is 5 KB and fd2 is 2 KB
2. Append A to fd1  
`write(fd1, "A");`  
Then fd1 is 6 KB
3. Append A to fd1 again  
`write(fd1, "A");`
  - ⦿ Not allowed to use fragments across multiple blocks
  - ✓ Copy old fragments to new block

➔ Then fd1 is 7 KB

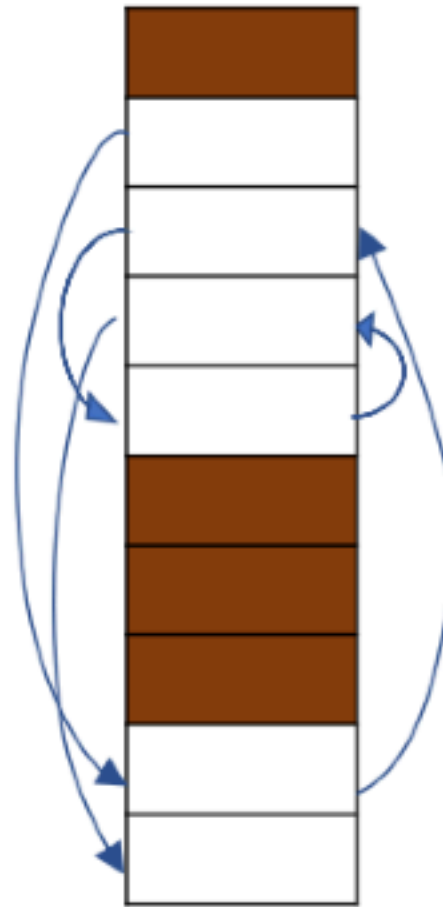
Block size: 4096B  
Fragment Size: 1024



## Problem 2 - Unorganized Freelist



Initial performance good



Get worse over time

### Measurement:

- New FS: **17.5%** of disk bandwidth
- Few weeks old: **3%** of disk bandwidth

● Leads to random allocation of sequential file blocks overtime