

# FAT

## 1.) FAT Main Memory Requirements:

- a)  $250 \cdot 1024 \cdot 1024 = 262\,144\,000$  blocks
- b) 262 144 000 entries
- c)  $\log_2(262\,144\,000) = 27,97 = 28$  bit    1 entry -> 2 addresses -> 7bytes
- d)  $262\,144\,000 \cdot 7 = 1\,835\,008\,000$  Bytes = 1 792 000 GB

## 2.) Random Access of Files:

- a) Overjump 107 834 590 bytes – 10 –  $256 \cdot 2 - 256 \cdot 3 = 107\,833\,300$
- b)  $107\,834\,590 / 1024 = 10\,530,85$

## 3.) UFS (i-node) File Size:

32 Bit -> 4 Byte	$1024 \cdot 1024 \cdot 4 = 4\,194\,304$ KB = 4 GB
1024 addresses -> 4KB	$256 \cdot 256 \cdot 1 = 65\,536$ KB
256 addresses -> 1KB	

## 4.) UFS File Size:

- a) 512 Bytes / 4 -> 128 addresses  
1024 Bytes / 4 -> 256 addresses  
  
 $128 \cdot 128 \cdot 128 \cdot 512 = 1\,073\,741\,824$  B = 1 048 576 KB = 1 GB  
 $256 \cdot 256 \cdot 256 \cdot 1024 = 1\,717\,986\,918$  B = 16 777 216 KB = 16 GB
- b) Nothing would change.