platters, notate Disk each has I'w head top new : cylinders divided into sectors of fixed size abstract a NUM_SECTORS = 10,000 sectors each of size SECTOR- SIZE = 512 bytes. Disk is kept in memory, but can be paved to disk, i.e a file Once paved can load the file system from the file (write all 512K bytes) Max. file Dize = 30 block bloch = sector = 512 bytes block (sector) 0 super block E inodes for files/ bit map for inodes [1 / duectones bit map for data {2 (1000 max.) blocks 258 data blocks for 154 files / due chones 9999

Data Structures on Disk superblock - in well known location - only a "magic number" in our superblock - when initialize FS, write majic # into superblock - when initialize FS from file, check that superblock contains the major # - to keep trach of files and directories: -inode contains (file size (int) = 4 bytes 32x2=64 {file type (int) = 4 byte-3.2 × 4 = 12P ("pointers" to data of file (30 int) -if regular file then data is file - if directory, then data is a list of files/der in the directory 512 bytes block can contain 512/64 = 8 00 512/128 = 4 inodes - limit of 1000 files / directores 1000/8 = 125 blocks 1000/4 = 250 needed for inodes

	sector	/		
	block	1	superblock	
bit map		0		
bit map		(2		* randomly corrupt 1%
data blo		3		certain blocks (100 of them); i.e set them as allocated - cannot be used to hold data
		_ (4	gineal for 1	be used to hold data
		5		I fust set of inodes
inodes fo	,			
files/dire	ctories	,		
(1000 ma	ax.)	255		
		256		
data blo				*
for files				
duector	ف ا	9999		1

	- need to initialize the root directory							
	- put in a "weel known" location							
	- 1st entry of 1st inode							
	- use but more for do terminal which							
	- use bit map for determining which							
	inodes are allocated (Valid)							
	- since max 1000 files/dis							
	=> bit string of len. 1000 = 125 bytes							
	1 = valid							
	0 = invalid							
	- allocate frist to / cast.cc program							
	- allocate frist to / program							
	1000							
	-11.1							
	- bit map for data buchs 1224,375 bits							
	10,000 - 200 - 3 = 9795 - need \$000							
	max inodes superbluch 1225 byts							
	bit map: (1225 × 5 = 9 FW)							
A CONTRACTOR OF THE PARTY OF TH	1225/512 bytes/sector = 2,39							
	need 3 blocks to hold bit map							
	1000							
	- duectory format							
		name (16 bytes)	4 byte inode	- = 20 bytes				
512/20 = 25.	6							
K.				or pad				
25×20 = 500 pad out	to 512 bytes			each entry to 32 bytes then				
				S12/32 = 16				
				entres per block				

All paths are absolute, i.e, full path from

from is given

/a/b/c/

max. len of single file/dei name = 16 byts

including 'o'

max. len of path = 256 bytes

- file names: allowed characters

alphabetic (mixed case)

dot

- dash

_ underscore

numeric 0, 9