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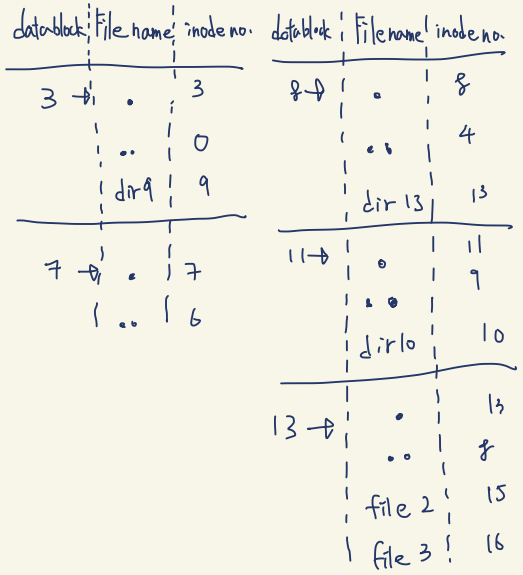
Answer the following questions: a) $2 \cdot (4 \cdot 1024) + 12 \cdot (4 \cdot 1024) = 57344$ byte

(a) What is the biggest size we can have for a file with SFS? (10 marks)

(b) Provide data block numbers in sequence that will be read from the disk (only data blocks that contain file data) when read_t (inum, offset, buf1, count) is called in a user program, where inum is the corresponding inode number for the above inode, and buf1 is a pointer that points to a user-defined buffer. (40 marks)

	read_t (inum, offset, buf1, count)	The data block numbers in sequence that will be read from (**only list the data blocks that contain file data**)
Example 1	read_t(inum, 133, buf1, 400);	5
Example 2	read_t(inum, 133, buf1, 6000);	5, 9
(i)	read_t(inum, 7000, buf1, 10000);	9, 34, 35, 36
(ii)	read_t(inum, 12000, buf1, 26000);	34, 35, 36, 40, 41, 42, 50, 56
(iii)	read_t(inum, 10000, buf1, 36000);	34, 35, 36, 40, 41, 42, 50, 56, 61
(iv)	read_t(inum, 1000, buf1, 31000);	5, 9, 34, 35, 36, 40, 41, 42,

Each directory file should at least contain two mapping items, "." and "..", for itself and its parent directory, respectively (the parent of the root directory is itself). **Give the contents of data blocks 3, 7, 8, 11 and 13, respectively.** (30 marks)



(b) Suppose a user provides the following absolute path:

/dir3/dir9/dir12/file5

Show the sequence of the inode numbers and data block numbers we need to pass in order to obtain the inode number of file5 (starting from the root directory). (20 marks)

inode 0 → datablock 0 → inode 3 → datablock 3 → inode 9 → datablock 9 → inode 12 → datablock 12 → inode 18