Lecture 39 Storage and File systems - the need for "persistence". Store & retriere on piner cycle. - no grama DBs Ingut / with a - primary 05 mechanism for persistence is via the file abstraction. file system "manages" / provides / imp lemente the file abstraction. # What is a fik! - parsistère, sequential object with an offset for index + name, size, permissions, timestamps, identifier indexing - operations/interface: ozen, close, read, write, seek. <u>delete(?)</u> Lede contents of a file. # Applications USER FS API open, brede, read, write Offset based Tomice drivers (linear blocks) Tositioning. positionry Kornel - read (plather H X, track # Y, ...) 55D. (Tayes issue commande specific to donice setup ImA - on solid- state ~ tens MBps - no moning your's NAND/NOR gates plather ~ 9 tracks) tracks - 613qs 8+1 tytes parity Sector - voliation المناجب المراجب

parity Sector - each platler is magnetically coated. L'orientation oncodes tits. - reliable. - ~ 100 mB/s ~ 5000 - 13000 APM - seek time: 2ms ~ 20ms (F) What does a Fs do (i) provide a sta. File abstraction across device types. (ii) implement the file abstraction. - Caching (iii) efficiently implement the abstraction. disk layout aware 10 scheduling read-ahead. (#) What a typical file system looks like? + metadata) tocher of which data J reside on disk. abstraction - metadata : FCB file control block in ode (index) Mysical Lisk boot super block block data blocks P content of files tooks P meta-data A meta data for for files the file system

Quick Notes Page 2

Notes Page 2