Summary of Ext2 Partition Geometry

`sup`	`superblock` structure at 1024, superblock
`blksz`	$= 2^{10+\texttt{sup.logblocksize}}$, block size
`ninode`	$=$ `sup.inodescount`, total number of inodes
`nblk`	$=$ `sup.blockscount`, total number of data blocks
`inosz`	$=$ `sup.inodesize`, size of inode
`inopgrp`	$=$ `sup.inodespergroup`, num. of inodes per group
`blkpgrp`	$=$ `sup.blockspergroup`, num. of data blocks per group
`ngroups`	$= \left\lceil \frac{\texttt{ninode}}{\texttt{inopgrp}} \right\rceil$, number of block groups
`gdt`	`group_descriptor[ngroups]`, array of structures at `blksz`$\times \left\lceil \frac{1024+\texttt{sizeof(superblock)}}{\texttt{blksz}} \right\rceil$, Group Descriptors Table
$\texttt{gdt}_g$	Group Descriptor Entry of group g
$\texttt{bat}_g$	`blkpgrp/8` bytes bitmap at `blksz`$\times\texttt{gdt}_g$`.blockbitmap`, Block allocation bitmap of group g
$\texttt{iat}_g$	`inopgrp/8` bytes bitmap at `blksz`$\times\texttt{gdt}_g$`.inodebitmap`, Inode allocation bitmap of group g
$\texttt{inodetbl}_g$	`inopgrp`$\times$`inosz` bytes at `blksz`$\times\texttt{gdt}_g$`.inodetable`, Inode table of group g
$\texttt{firstdata}_g$	$\texttt{gdt}_g$`.inodetable`$+ \left\lceil \frac{\texttt{inosz}\times\texttt{inopgrp}}{\texttt{blksz}} \right\rceil$, Block number of the first data block in the group g
$\texttt{inode}_i$	`inode` stucture at `inodetbl`$_g$`+j`$\times$`inosz` where `g` $= \left\lfloor \frac{i-1}{\texttt{inopgrp}} \right\rfloor$, `j` $= (i-1) \bmod$ `inopgrp`, Inode numbered as i
$\texttt{ialloc}_i$	`j`$^{\text{th}}$ bit at $\texttt{iat}_g$ where `g` $= \left\lfloor \frac{i-1}{\texttt{inopgrp}} \right\rfloor$, `j` $= (i-1) \bmod$ `inopgrp`, Bit value indicating if inode numbered i is allocated
$\texttt{balloc}_p$	`j`$^{\text{th}}$ bit at $\texttt{bat}_g$ where `g` $= \left\lfloor \frac{p-\texttt{sup.s\_first\_data\_block}}{\texttt{blkpgrp}} \right\rfloor$, `j` $= (p-$`sup.s_first_data_block`$) \bmod$ `blkpgrp` Bit value indicating if data block at pointer p is allocated
$\texttt{data}_p$	`blksz` bytes at `p`$\times$`blksiz`, Data block content of pointer p. Block pointers are absolute.
$\texttt{inode}_{\texttt{root}}$	$\texttt{inode}_2$, Inode of the root (`/`) directory
$\texttt{content}_{i,k}$	if $k < 12$, $\texttt{data}_p$, where $p =$ $\texttt{inode}_i$`.i_block[k]`, content of k^{th} block of a file with inode number i. Indirection is required for $k \geq 12$.