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**VU Answer**

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In how many ways/ modes, higher PC's can operate.

Answer ( [Please click here to Add Answer](#) )



**Higher PCs can operate in two modes**

- REAL MODE
- PROTECTED MODE

Correct answer solved by hadi  
Cell No:03228043306  
Email: usmanraj20@gmail.com

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How many bytes are used for FCB in FAT12 & FAT16 and to store a cluster in FAT32 how many bytes are required?

Answer ( [Please click here to Add Answer](#) )



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In context of UART FIFO queue, why we need buffering?

Answer ( [Please click here to Add Answer](#) )



**A queue or a buffer of the input or output bytes is maintained within the UART in order to facilitate more efficient I/O.**

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What will be the advantage of having large size cluster?

Answer ( [Please click here to Add Answer](#) )



**Cluster size represents a trade-off between efficient storage and efficient data handling. Not only is there a limit on the number of clusters available per volume, but larger clusters allow information to be stored and retrieved faster because fewer logical operations are needed to move the same amount of data. ( book se ni mila google kia hai ans )**

Correct answer solved by hadi  
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Why we cannot directly access NTFS volume in DOS? What will happen if we try to do that?

Answer ( [Please click here to Add Answer](#) )



**If NTFS volume is accessed in DOS, it will fire the error of Invalid Media**

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**If the system has booted in DOS then a NTFS volume can be accessed by an Indirect Method, using BIOS functions..**

## Accessing NTFS volume in DOS

- NTFS volume can not be accessed in DOS using DOS based function like `absread()` etc.
- DOS device drivers does not understand the NTFS data structures like MFT etc.
- **If NTFS volume is accessed in DOS, it will fire the error of Invalid Media.**

Is LSN=0 and LBA=0 same thing? Why or why not?

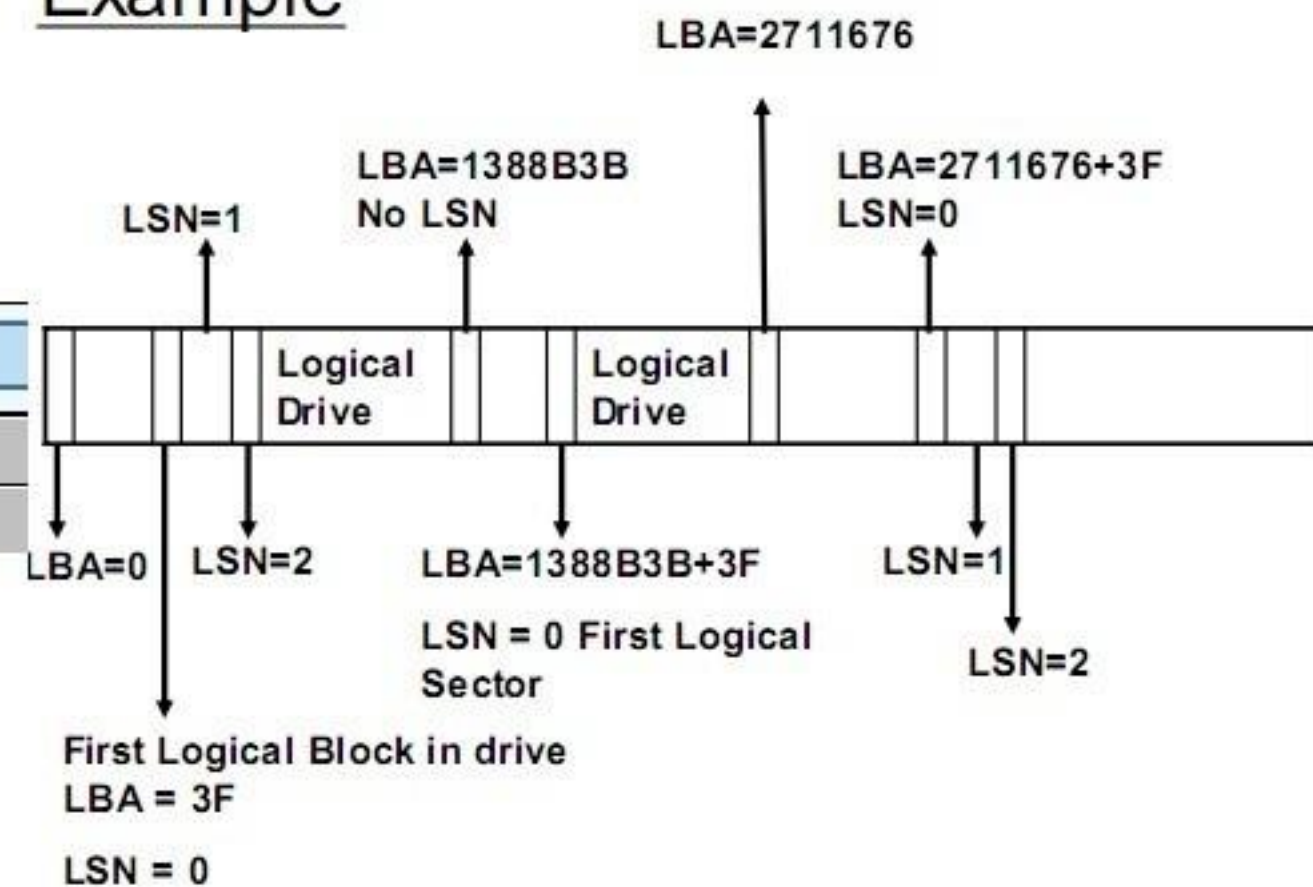
**LSN is also indexed like LBA the only difference is that LBA is the address relative to the start of physical drive (i.e. absolute), whereas LSN address is the address from the start of logical partition i.e relative.**

Answer ( [Please click here to Add Answer](#) )



**As in the above example it can be noticed that the LBA = 0 is not the same as LSN=0. The LBA=0 block is the first block on disk. Whereas each logical partition has LSN=0 block which is the first block in logical drive and is not necessarily the first block on physical drive. Also notice the hidden blocks between the first physical block on each partition and its first LSN block. These hidden blocks are not used by the operating system for storing any kind of data.**

## Example



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What is the usage of CD. And CD.. commands?

Answer ( Please [click here](#) to Add Answer )



## The . and .. Directories

cd .

gives the current path

cd ..

goes one level backwards.

The . entry has the cluster number 0012H which is the cluster number for the SECOND directory and the .. entry has cluster number which indicates the higher level directory which is the root directory

CD. command gives the current path and CD.. moves to the one higher level directory

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In system programming, how can we access the hardware using three layered approach?

Answer ( [Please click here to Add Answer](#) )



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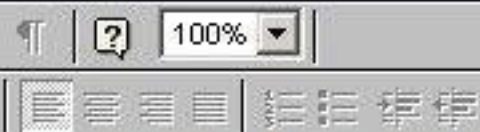
Write down the steps to perform alignment test to distinguish between 386 and 486 processors.

Note : Also check yourself on page 164

Answer ( Please [click here](#) to Add Answer )

## Alignment Test

```
pushfd
pop  eax
mov  ecx, eax
mov  dword ptr [13], EDX
pushfd
pop  eax
```



In this slide a double word is moved into a odd address. If the processor is 386 then the 18th bit of the EFLAGS register will not be set, it will be set if the processor is higher than 386.

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Explain the Association between DPB (Drive parameter block) and BIOS parameter block (BPB).

Answer ( [Please click here to Add Answer](#) )

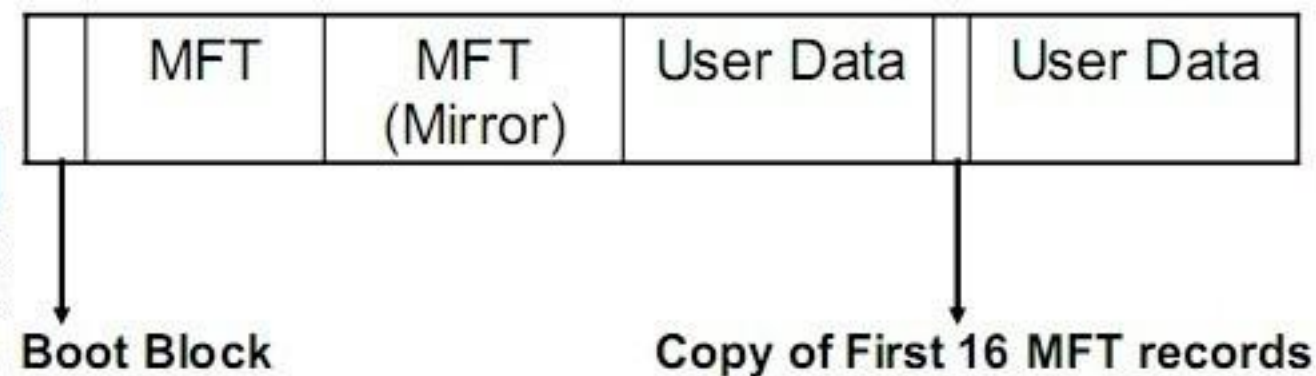


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Write down the anatomy of NTFS based file system.



The given slide shows the anatomy of an NTFS based system. The FAT and root directory has been replaced by the MFT. It will generally have two copies the other copy will be a mirror image of the original. Rests of the blocks are reserved for user data. In the middle of the volume is a copy of the first 16 MTF record which are very important to the system

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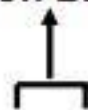
Correct answer solved by hadi  
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How LSN is translated to LBA in NTFS based system?

## Translating LSN to LBA

Hidden Blocks



Other File System

NTFS Partition Block

No. of Physical Blocks  
for other Partition

$LBA = \text{No. of Physical Blocks in other Partition} +$   
 $\text{Hidden Blocks} + \text{LSN}$

- All this information can be retrieved from the Partition Table + Boot Block

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