

Lab 1 Deliverable

Part 1: VBR Info

FAT32 Disk Image

Field	Value
Bytes/Sector	512
Sectors/Cluster	1
Reserved Sectors	6334
# Of Fats	2
Hidden Sectors (Partition Start Start LBA)	128
Total Sectors	126976
Sectors/Fat	929
Root Dir First Cluster	2
FSInfo Sector	1
Backup boot Sector	6

Derived Info

Part 2 Root Directory

Files Needed

FIRST.DOC

```
Short entry (FIRST.DOC) (192)
  File name (192).....FIRST
  File extension (200).....DOC
  Attributes (203).....0x20
    Read only (:0).....0
    Hidden (:1).....0
    System (:2).....0
    Volume (:3).....0
    Directory (:4).....0
    Archive (:5).....1
  (reserved) (204).....0
  Created time refinement in 10ms (0-199) (205).....190
  Created date/time (206).....9/17/25 7:58 AM
  Last access date (210).....9/17/25
  First cluster (high word) (212).....0
  Modified date/time (214).....9/17/25 7:58 AM
  First cluster (low word) (218).....5
  File size (220).....29,184
```

First Data Sector of File:

ONE

```
Short entry (ONE) (320)
  File name (320).....ONE
  File extension (328).....
  Attributes (331).....0x10
```

```

Read only (:0).....0
Hidden (:1).....0
System (:2).....0
Volume (:3).....0
Directory (:4).....1
Archive (:5).....0
(reserved) (332).....0
Created time refinement in 10ms (0-199) (333).....173
Created date/time (334).....9/17/25 7:58 AM
Last access date (338).....9/17/25
First cluster (high word) (340).....0
Modified date/time (342).....9/17/25 7:58 AM
First cluster (low word) (346).....63
File size (348).....0

```

To Jump to The File Entries of ONE Directory we need to compute it:

First cluster (High word) = 0First Cluster (Low word) = 63`

Thus:

You Could Have Been an Influencer.DOC

LFN File Name: You could have been an influencer.doc

Short entry (YOUCOU~1.DOC) (416)

```

File name (416).....YOUCOU~1
File extension (424).....DOC
Attributes (427).....0x20
  Read only (:0).....0
  Hidden (:1).....0
  System (:2).....0
  Volume (:3).....0
  Directory (:4).....0
  Archive (:5).....1
(reserved) (428).....0
Created time refinement in 10ms (0-199) (429).....166
Created date/time (430).....9/17/25 7:59 AM
Last access date (434).....9/17/25
First cluster (high word) (436).....0
Modified date/time (438).....9/17/25 7:59 AM
First cluster (low word) (442).....66
File size (444).....29,184

```

First Data Sector of File:

Part 3 Deleted File Recovery

Secret.txt is actually in the root directory

First byte of SFN	E5	Confirmed
Attr @ +0x0B	0x20	file
Creation tenths @ +0x0D	183	
Creation time/date @ +0x0E..11	9/17/25 7:59 AM	
Modified time/date @ +0x16..19	9/17/23 8:01 AM	
High @ +0x14..15 ____	0	
Low @ +0x1A..1B ____	62	
Start cluster = (High<<16) Low	62	
Size (bytes) @ +0x1C..1F ____	5	
First sector (physical) = StartLBA+FDS+(Start-2)	128 + 8192 + (62 - 2) = 8380 (Physical)	8252 (Volume Relative)

Content: Sshhh

Proper Undelete

Since it is in the root directory no need to rechain it

At Offset 00400120 Changed E5 to 53, 'S' ASCII

Now we need to mark Cluster 62 as allocated in the FATs.

Cluster 62

Byte_Offset = 4 * 62 = 248

FAT1_Sector = 6334

New 4 byte LE Value: FF FF FF 0F

Byte_Offset = 4 * 62 = 248

FAT2_Sector = 7263

New 4 byte LE Value: FF FF FF 0F