DBF File structure

A **DBF file** consists of a header record and data records. The header record defines the structure of dbf file and contains any other information related to the table. The header record starts at file position zero. Data records follow the header, in consecutive bytes, and contain the actual text of the fields.

Note The data in dbf file starts at the position indicated in bytes 8 to 9 of the header record. Data records begin with a delete flag byte. If this byte is an ASCII space (0x20), the record is not deleted. If the first byte is an asterisk (0x2A), the record is deleted. The data from the fields named in the field subrecords follows the delete flag.

The length of a record, in bytes, is determined by summing the defined lengths of all fields. Integers in dbf files are stored with the least significant byte first.

DBF File Header

Byte offset	Description
0	DBF File type: 0x02 FoxBASE 0x03 FoxBASE+/Dbase III plus, no memo 0x30 Visual FoxPro 0x31 Visual FoxPro, autoincrement enabled 0x32 Visual FoxPro with field type Varchar or Varbinary 0x43 dBASE IV SQL table files, no memo 0x63 dBASE IV SQL system files, no memo 0x83 FoxBASE+/dBASE III PLUS, with memo 0x8B dBASE IV with memo 0xCB dBASE IV SQL table files, with memo 0xF5 FoxPro 2.x (or earlier) with memo 0xE5 HiPer-Six format with SMT memo file 0xFB FoxBASE
1 - 3	Last update (YYMMDD)
4 - 7	Number of records in file
8 - 9	Position of first data record
10 - 11	Length of one data record, including delete flag
12 - 27	Reserved
28	Table flags: 0x01 file has a structural .cdx 0x02 file has a Memo field 0x04 file is a database (.dbc) This byte can contain the sum of any of the above values. For example, the value 0x03 indicates the table has a structural .cdx and a Memo field.
29	Code page mark
30 - 31	Reserved, contains 0x00
32 - n	Field subrecords The number of fields determines the number of field subrecords. One field subrecord exists for each field in the table.

n+1	Header record terminator (0x0D)
n+2 to n+264	Visual Foxpro only: A 263-byte range that contains the backlink, which is the relative path of an associated database (.dbc) file, information. If the first byte is 0x00, the file is not associated with a database. Therefore, database files always contain 0x00.

Field Subrecords Structure

Byte offset	Description
0 - 10	Field name with a maximum of 10 characters. If less than 10, it is padded with null characters (0x00).
11	Field type: C - Character Y - Currency N - Numeric F - Float D - Date T - DateTime B - Double I - Integer L - Logical M - Memo G - General C - Character (binary) M - Memo (binary) P - Picture + - Autoincrement (dBase Level 7) O - Double (dBase Level 7) @ - Timestamp (dBase Level 7) V - Varchar type (Visual Foxpro)
12 - 15	Displacement of field in record
16	Length of field (in bytes)
17	Number of decimal places
18	Field flags: 0x01 System Column (not visible to user) 0x02 Column can store null values 0x04 Binary column (for CHAR and MEMO only) 0x06 (0x02+0x04) When a field is NULL and binary (Integer, Currency, and Character/Memo fields) 0x0C Column is autoincrementing
19 - 22	Value of autoincrement Next value
23	Value of autoincrement Step value
24 - 31	Reserved