

10 Parts of by code:

The first 4 byte of every Java class file are its magic number 0xcafefab. The magic number make non-java class files easier to identify. If files does not start with that magic number then it definitely is not a java class file.

The second 4 bytes of the class file contain the minor and major.

As Java Technology evolves, new feature may occasionally be added to the java .class file format. Each time the class file format changes, the version numbers will change as well. To the Java file, Virtual Machine the version number identify the format to which particular Java file adheres.

Java Virtual Machine generally be able to load class file with given major version number and range of minor version numbers.

Java Virtual Machine must reject class file with version numbers are outside their valid range.

For class files generated 1.0 or 1.1 compilers, the major version number is 45. The minor version number is 3.

There are 10 basic section to the Java class file structure.

1. Magic number this is this is currently **0XCAFEBABE**.
2. Version of class file format: The minor and major version of the class file.
3. Constant pool: pool of the constant for the class like constant value final.
4. Access Flags: for example whether the class is abstract static.
5. This Class: the name of the current class.
6. Super Class: the name of the superclass
7. Interfaces: any interfaces in the class.
8. Fields: any fields in the class.
9. Method: any methods in the class.
10. Attribute: any attributes of the class for example the name of the source file etc.

There is a handy Mnemonic for remembering the 10 parts of the bytes.

My very cute animal turns Savage in full moon areas.

M: Magic Number

V: Version number

C: Constant Pool.

A: Access Flags

T: This

S: Super

I: Interfaces.

F: Fields

M: Methods

A: Attributes

The ClassFile Structure

A class file consists of a single ClassFile structure:

```
ClassFile {  
    u4          magic;  
    u2          minor_version;  
    u2          major_version;  
    u2          constant_pool_count;  
    cp_info     constant_pool[constant_pool_count-1];  
    u2          access_flags;  
    u2          this_class;  
    u2          super_class;  
    u2          interfaces_count;  
    u2          interfaces[interfaces_count];  
}
```

```
u2          fields_count;  
field_info  fields[fields_count];  
u2          methods_count;  
method_info methods[methods_count];  
u2          attributes_count;  
attribute_info attributes[attributes_count];
```