# GIF format

Byte Order: Little-endian

## GIF Header

```
Offset    Length    Contents
  0       3 bytes   "GIF"
  3       3 bytes   "87a" or "89a"
  6       2 bytes   <Logical Screen Width>
  8       2 bytes   <Logical Screen Height>
 10       1 byte    bit 0:    Global Color Table Flag (GCTF)
                    bit 1..3: Color Resolution
                    bit 4:    Sort Flag to Global Color Table
                    bit 5..7: Size of Global Color Table: 2^(1+n)
 11       1 byte    <Background Color Index>
 12       1 byte    <Pixel Aspect Ratio>
 13       ? bytes   <Global Color Table(0..255 x 3 bytes) if GCTF is one>
          ? bytes   <Blocks>
          1 bytes   <Trailer> (0x3b)
```

## Image Block

```
Offset    Length    Contents
  0       1 byte    Image Separator (0x2c)
  1       2 bytes   Image Left Position
  3       2 bytes   Image Top Position
  5       2 bytes   Image Width
  7       2 bytes   Image Height
  8       1 byte    bit 0:    Local Color Table Flag (LCTF)
                    bit 1:    Interlace Flag
                    bit 2:    Sort Flag
                    bit 2..3: Reserved
                    bit 4..7: Size of Local Color Table: 2^(1+n)
          ? bytes   Local Color Table(0..255 x 3 bytes) if LCTF is one
          1 byte    LZW Minimum Code Size
[ // Blocks
          1 byte    Block Size (s)
          (s)bytes  Image Data
]*
          1 byte    Block Terminator(0x00)
```

## Graphic Control Extension Block

```
Offset    Length    Contents
  0       1 byte    Extension Introducer (0x21)
  1       1 byte    Graphic Control Label (0xf9)
  2       1 byte    Block Size (0x04)
  3       1 byte    bit 0..2: Reserved
                    bit 3..5: Disposal Method
                    bit 6:    User Input Flag
                    bit 7:    Transparent Color Flag
  4       2 bytes   Delay Time (1/100ths of a second)
  6       1 byte    Transparent Color Index
  7       1 byte    Block Terminator(0x00)
```

## Comment Extension Block

```
Offset    Length   Contents
   0      1 byte   Extension Introducer (0x21)
   1      1 byte   Comment Label (0xfe)
[
          1 byte   Block Size (s)
      (s)bytes   Comment Data
]*
          1 byte   Block Terminator(0x00)
```

# Plain Text Extension Block

```
Offset    Length   Contents
   0      1 byte   Extension Introducer (0x21)
   1      1 byte   Plain Text Label (0x01)
   2      1 byte   Block Size (0x0c)
   3      2 bytes  Text Grid Left Position
   5      2 bytes  Text Grid Top Position
   7      2 bytes  Text Grid Width
   9      2 bytes  Text Grid Height
  10      1 byte   Character Cell Width(
  11      1 byte   Character Cell Height
  12      1 byte   Text Foreground Color Index(
  13      1 byte   Text Background Color Index(
[
          1 byte   Block Size (s)
      (s)bytes   Plain Text Data
]*
          1 byte   Block Terminator(0x00)
```

# Application Extension Block

```
Offset    Length   Contents
   0      1 byte   Extension Introducer (0x21)
   1      1 byte   Application Label (0xff)
   2      1 byte   Block Size (0x0b)
   3      8 bytes  Application Identifire
[
          1 byte   Block Size (s)
      (s)bytes   Application Data
]*
          1 byte   Block Terminator(0x00)
```

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```
GIF87a:
```

GIF Header
Image Block
```
Trailer
```

---

```
GIF89a:
```

GIF Header
Graphic Control Extension
Image Block
```
Trailer
```

---

```
GIF Animation
```

GIF Header
Application Extension

```
[
    Graphic Control Extension
    Image Block
]*
Trailer
```