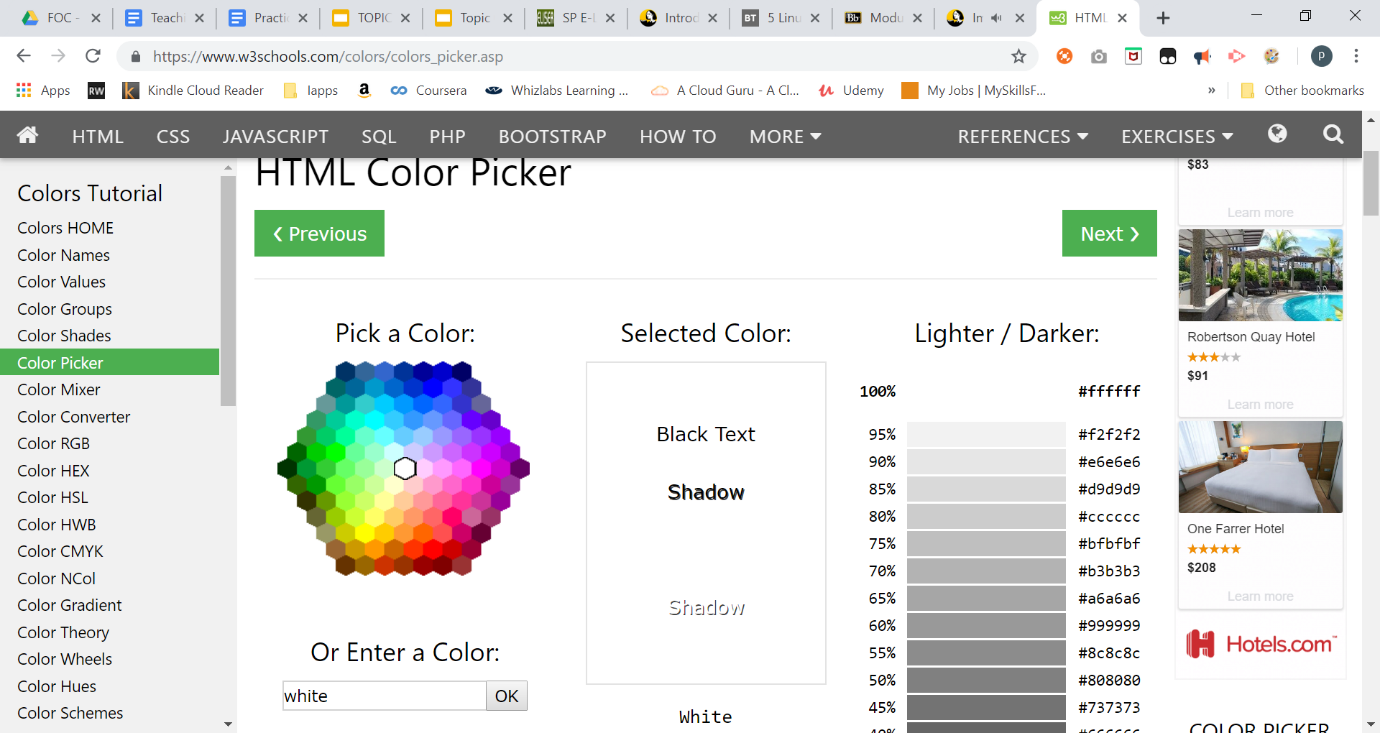
**Practical 04 Digital Presentation**

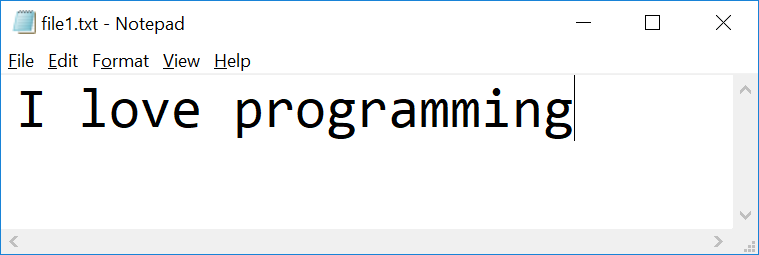
**Representing colour in RGB**

1. ******Go to web site <https://www.w3schools.com/colors/colors_picker.asp>

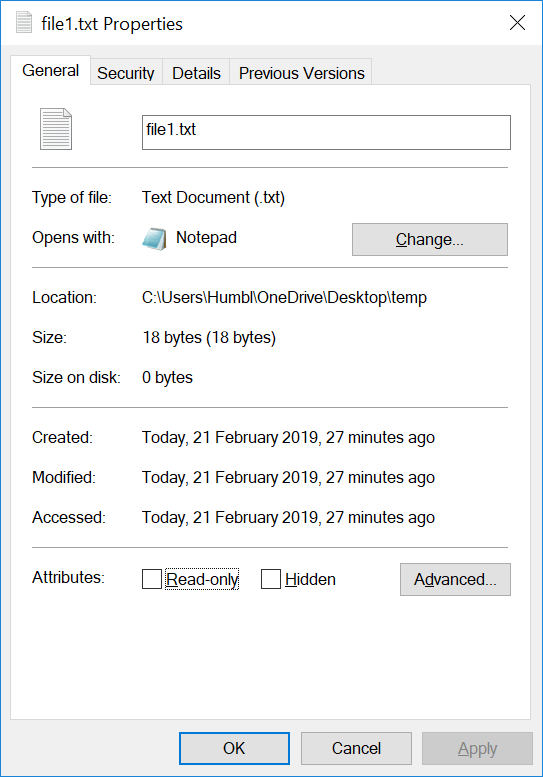
|  |  |  |
| --- | --- | --- |
| **Colour** | **RGB in decimal** | **RGB In Hex** |
| Black | rgb(0, 0, 0) | **#000000** |
| White | rgb(255, 255, 255) | **#ffffff** |
| Your favourite colour | rgb(0, 153, 255) | **#0099ff** |

Access the File Header

1. Using notepad, create a text file named “file1.txt”



1. Check the file properties



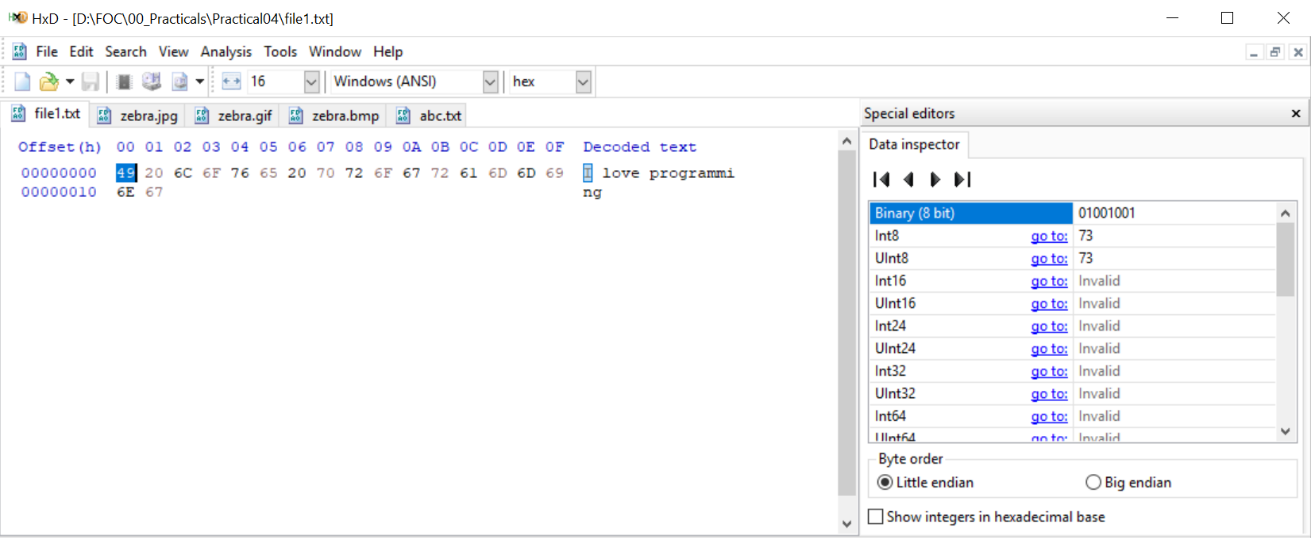
What is the size of the file in bytes?

|  |
| --- |
| 18 bytes |

1. Visit HexEd at <https://hexed.it/>

or download HxD Hex Editor

<https://download.cnet.com/HxD-Hex-Editor/3000-2352-10891068.html?part=dl-HxDHexEdi&subj=uo&tag=button>

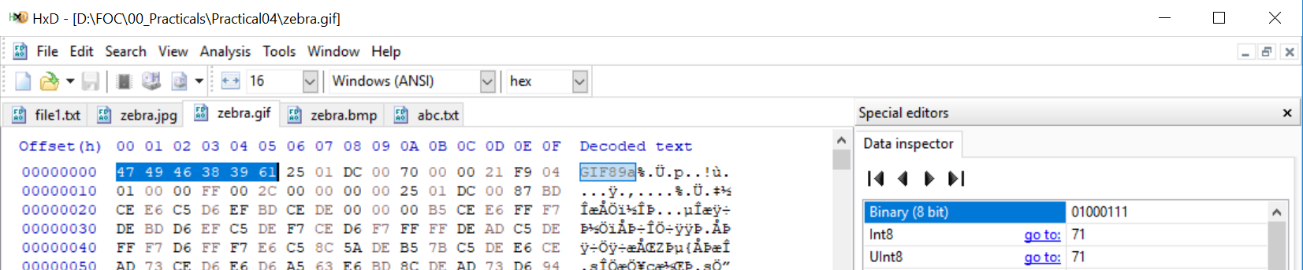
1. Open file1.txt using HxD
2. Observe the Hex code  
   

|  |  |  |
| --- | --- | --- |
| **Character** | **Hex** | **Binary(8 bit)** |
| I | 49 | 01001001 |

1. Using HxD to observe how character “o” and space character are represented

|  |  |  |
| --- | --- | --- |
| **Character** | **Hex** | **Binary(8 bit)** |
| o | 6F | 01101111 |
| space | 20 | 00100000 |

1. Download the following image and save it as zebra.**jpg**, zebra.**gif** and zebra.**bmp**
2. Open **zebra.gif** in HxD

Observe the Hex code

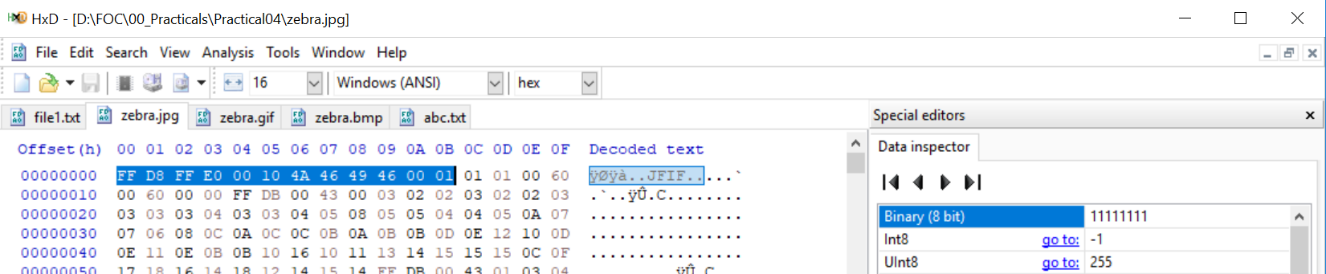
What are the **first 6 bytes** decoded?

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **offset** | **00** | **01** | **02** | **03** | **04** | **05** |
| Byte | 47 | 49 | 46 | 38 | 39 | 61 |
| Character | G | I | F | 8 | 9 | a |

1. Visit web site <https://en.wikipedia.org/wiki/List_of_file_signatures> to find out the meaning of above hex code

|  |
| --- |
| Image file encoded in the [Graphics Interchange Format](https://en.wikipedia.org/wiki/Graphics_Interchange_Format) (GIF) |

1. Open **zebra.jpg** in HxD  
     
   Observe the Hex code



What are the **first 12 bytes**?

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **offset** | **00** | **01** | **02** | **03** | **04** | **05** | **06** | **07** | **08** | **09** | **0A** | **0B** |
| Byte | FF | D8 | FF | E0 | 00 | 10 | 4A | 46 | 49 | 46 | 00 | 01 |
| Character | ÿ | Ø | ÿ | à | ␀ | ␐ | J | F | I | F | ␀ | ␁ |

****

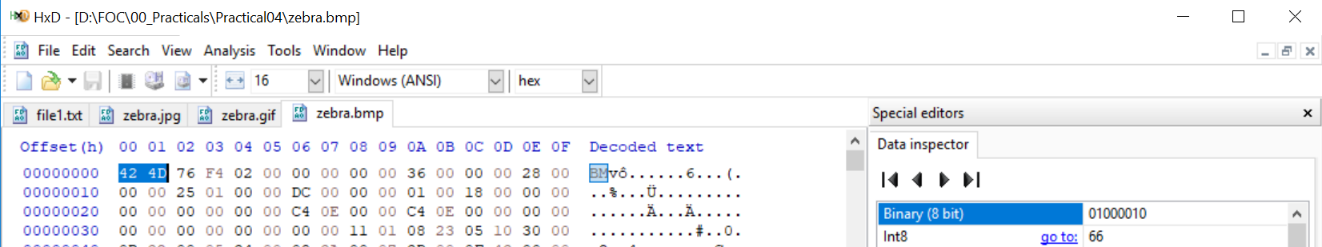
**A screenshot of a computer

Description automatically generated**

1. Visit web site <https://en.wikipedia.org/wiki/List_of_file_signatures> to find out the meaning of above hex code

|  |
| --- |
| [JPEG](https://en.wikipedia.org/wiki/JPEG) raw or in the [JFIF](https://en.wikipedia.org/wiki/JFIF) or [Exif](https://en.wikipedia.org/wiki/Exif) file format[[16]](https://en.wikipedia.org/wiki/List_of_file_signatures#cite_note-:0-16) |

1. Open **zebra.bmp** in hex editor

Observe the Hex code   


What are the **first 2 bytes**?

|  |  |  |
| --- | --- | --- |
| **offset** | **00** | **01** |
| Byte | 42 | 4D |
| Character | B | M |

1. Visit web site <https://en.wikipedia.org/wiki/List_of_file_signatures> to find out the meaning of above hex code

|  |
| --- |
| [BMP](https://en.wikipedia.org/wiki/BMP_file_format) file, a [bitmap](https://en.wikipedia.org/wiki/Bitmap) format used mostly in the [Windows](https://en.wikipedia.org/wiki/Windows) world |

1. (optional)  
   Download the file at <https://drive.google.com/open?id=1vf0SBkI1LdWQvYmK9yM5AyJ0fHKE6DHR>

How can you view it as an image?

|  |
| --- |
| From this first 2 characters, we know that this is a BMP file format    All we need to do is change the file extension from .txt to .bmp as shown below |

**Hint:**

* Open the file using HxD
* Visit web site <https://en.wikipedia.org/wiki/List_of_file_signatures> to find out the meaning of above hex code
* Rename the extension of the file

*End of Practical*