Char codes 2022

experimental notes on decoding text in equations. It also occurs in strings in comments and strings in VB, Notepad and ordinary text in Word and no doubt elsewhere.

## Formatted strings finished with this about 22 July

4th August I found documentation on String Class at

<https://docs.microsoft.com/en-us/dotnet/api/system.string?view=net-6.0>

and intro to Character encoding in .NET at

<https://docs.microsoft.com/en-us/dotnet/standard/base-types/character-encoding-introduction>

I could not immediately see anything helpful! Bugger

was

|  |  |  |  |
| --- | --- | --- | --- |
| 0 |  |  |  |
| 1 |  | &H0000D835 | - |
| 2 |  | &H0000DEFC | x |
| 3 |  | &H0000D835 |  |
| 4 |  | &H0000DF36 | x |
| 5 |  | &H0000D835 |  |
| 6 |  | &H0000DEC2 | x |
| 7 |  | &H000003B1 | x |
| 8 |  | &H0000D835 |  |
| 9 |  | &H0000DC4E | x |
| 10 |  | &H0000D835 |  |
| 11 |  | &H0000DC82 | x |
| 12 |  | &H0000D835 |  |
| 13 |  | &H0000DC1A | x |
| 14 |  | &H00000061 | x |

Changing α to β and a to b just bumped up x elements by 1 D835 elements unchanged.

Greek Α=H391 Ω=H3A9 α=H3B1, ω=H3C9 ,ϑ=H3D1, ϕ=H3D5

Roman A=H41 Z=H5A a=H61, z=H7A

(alphas and roman a's) was

|  |  |  |
| --- | --- | --- |
| 0 | Greek |  |
| 1 | &H0000D835 | - |
| 2 | &H0000DEE2 | x |
| 3 | &H0000D835 |  |
| 4 | &H0000DF1C | x |
| 5 | &H0000D835 |  |
| 6 | &H0000DEA8 | x |
| 7 | &H00000391 | Alpha x |
|  | Roman |  |
| 8 | &H0000D835 |  |
| 9 | &H0000DC34 | x |
| 10 | &H0000D835 |  |
| 11 | &H0000DC68 | x |
| 12 | &H0000D835 |  |
| 13 | &H0000DC00 | x |
| 14 | &H00000041 | roman x |

Greek range =H3D5-H391 =H44 or H3C9-H391=H38

Roman range =H7A-H20 =H5A

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 0 | Greek |  | Lower | Upper |  |
| 1 | &H0000D835 | - |  |  |  |
| 2 | &H0000DEE2 | x | DEE2 | DF1A | Excludes ϑ, ϕ |
| 3 | &H0000D835 |  |  |  |  |
| 4 | &H0000DF1C | x | DF1C | DF60 |  |
| 5 | &H0000D835 |  |  |  |  |
| 6 | &H0000DEA8 | x | DEA8 | DEE0 | Excludes ϑ, ϕ |
| 7 | &H00000391 | x | 0391 | 03D5 |  |
|  | Roman |  |  |  |  |
| 8 | &H0000D835 |  |  |  |  |
| 9 | &H0000DC34 | x |  |  |  |
| 10 | &H0000D835 |  |  |  |  |
| 11 | &H0000DC68 | x |  |  |  |
| 12 | &H0000D835 |  |  |  |  |
| 13 | &H0000DC00 | x |  |  |  |
| 14 | &H00000041 | x |  |  |  |

Greek

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 0 |  | (alpha) | Letter - | (Alpha) | Letter - |
|  | DF03 | DEFC |  | DEE2 |  |
|  | DF17 |  |  |  |  |
|  | DF19 |  | 1D |  | 37 |
|  | DF11 |  |  |  |  |
|  | DF3D | DF36 |  | DF1C |  |
|  | DF51 |  |  |  |  |
|  | DF53 |  | 1D |  | 37 |
|  | DF4B |  |  |  |  |
|  | DEC9 | DEC2 |  | DEA8 |  |
|  | DEDD |  |  |  |  |
|  | DEDF |  | 1D |  | 37 |
|  | DED7 |  |  |  |  |
|  | 3C9 |  |  |  |  |
|  | 03B8 | 03B1 |  | 0391 |  |
|  | 03D1 |  |  |  |  |
|  | 03D5 |  | 24 |  | 44 |
|  | 03C6 |  |  |  |  |
|  | 3C0 |  |  |  |  |
|  | 3D6 |  |  |  |  |
|  | 3C1 |  |  |  |  |
|  | 3F1 |  |  |  |  |
|  | 3C3 |  |  |  |  |
|  | 3C2 |  |  |  |  |

### Using new Test function

with D835, removed by hand

3B8,3D1,20,3C0,3D6,20,3C1,3F1,20,3C3,3C2,20,3D5,3C6,

3B1,3C9, (decimal 25 characters, includes )

Bracketed part of was

D835,DEFC,D835,DF36,D835,DEC2,3B1,D835,DC4E,D835,DC82,D835,DC1A,61,

*α****α*α**α*a****a*a**a was

3B1,3B1,3B1,3B1,61,61,61,61,20,20,20,

Subscript of was

D835,DEFC,D835,DF36,D835,DEC2,3B1,D835,DC4E,D835,DC82,D835,DC1A,61,

**Conclusion: The encoding only applies in equations**.

Ascii character set starting with space according to

<https://www.w3schools.com/charsets/ref_html_ascii.asp>

Bracketed part of was

20,21,22,23,24,26,2032,28,29,2217,2B,2C,2E,2F,30,31,32,38,39,3A,3B,3C,3D,3E,3F,40,41,42,43,58,59,5A,5B,5C,5D,5E,5F,60,61,62,63,78,79,7A,7B,7C,7D,7E,

2032 is Unicode prime. Straight apostrophe ' will not go in.

Bracketed part of

20,21,22,23,24,26,2032,28,29,2217,2B,2C,2E,2F,30,31,32,38,39,3A,3B,3C,3D,3E,3F,40,D835,DC34,D835,DC35,D835,DC36,D835,DC4B,D835,DC4C,D835,DC4D,5B,5C,5D,5E,5F,60,D835,DC4E,D835,DC4F,D835,DC50,D835,DC65,D835,DC66,D835,DC67,7B,7C,7D,7E,

Bracketed part of

20,21,22,23,24,26,2032,28,29,2217,2B,2C,2E,2F,D835,DFCE,D835,DFCF,D835,DFD0,D835,DFD6,D835,DFD7,3A,3B,3C,3D,3E,3F,40,D835,DC68,D835,DC69,D835,DC6A,D835,DC7F,D835,DC80,D835,DC81,5B,5C,5D,5E,5F,60,D835,DC82,D835,DC83,D835,DC84,D835,DC99,D835,DC9A,D835,DC9B,7B,7C,7D,7E,

Bracketed part of was

20,21,22,23,24,26,2032,28,29,2217,2B,2C,2E,2F,D835,DFCE,D835,DFCF,D835,DFD0,D835,DFD6,D835,DFD7,3A,3B,3C,3D,3E,3F,40,D835,DC00,D835,DC01,D835,DC02,D835,DC17,D835,DC18,D835,DC19,5B,5C,5D,5E,5F,60,D835,DC1A,D835,DC1B,D835,DC1C,D835,DC31,D835,DC32,D835,DC33,7B,7C,7D,7E,

D835's removed by hand

30,39,41,5A,61,7A,~~DFCE,DFD7~~,~~DC00,DC19~~,~~DC1A,DC33~~,~~DC68,DC81~~,~~DC82,DC9B~~,~~DC34,DC4D~~,~~DC4E,DC67~~,

Italic h is special are not exceptional

210E,DC89,68,DC21,

### Conclusions Roman

Digits and letters may be in bold

Letters may be in bold or italic

~~DFCE,DFD7 ⇒ 30,39~~

~~DC00,DC19 ⇒ 41,5A~~

~~DC1A,DC33 ⇒ 61,7A~~

~~DC68,DC81 ⇒ 41,5A~~

~~DC82,DC9B ⇒ 61,7A~~

~~DC34,DC4D ⇒ 41,5A~~

~~DC4E,DC67 ⇒ 61,7A~~

### Greek

391,3A9,3B1,3C9,20,3B8,3D1,20,3C0,3D6,20,3C1,3F1,20,3C3,3C2,20,3D5,3C6,

are in range of so not a problem outliers are which are

3D1,3D6,3F1,3D5,

D835's removed by hand

391,3A9,3B1,3C9,3D1,3D5,3D6,3F1,~~DEA8,DEC0~~,~~DEC2,DEDA~~,~~DEDD~~,~~DEDF~~,~~DEE1~~,~~DEE0~~,~~DF1C,DF34~~,~~DF36,DF4E~~,~~DF51~~,~~DF53~~,~~DF55~~,~~DF54~~,~~DEE2,DEFA~~,~~DEFC,DF14~~,~~DF17~~,~~DF19~~,~~DF1B~~,~~DF1A~~,

~~DEA8,DEC0 ⇒ 391,3A9~~

~~DEC2,DEDA⇒ 3B1,3C9~~

DEDD ⇒ 3D1

DEDF ⇒ 3D5

DEE0 ⇒ 3F1

DEE1 ⇒ 3D6

~~DF1C,DF34~~

DF36,DF4E

DF51

DF53

DF54

DF55

~~DEE2,DEFA~~

~~DEFC,DF14~~

DF17

DF19

DF1A

DF1B

DEDD,DEDF,DEE1,DEE0

Italic (default) Bracketed part of

221E,D835,DF15,2207,2234,21D2,

Non-italic: Bracketed part of

221E,2202,2207,2234,21D2,

Non-italic, bold: Bracketed part of

221E,D835,DEDB,D835,DEC1,2234,21D2,

italic, bold: Bracketed part of

221E,D835,DF4F,D835,DF35,2234,21D2,

In equations

### Test CleanString

09AZaz−09AZaz−AZaz−Azaz

ΑΩαω θϑ πϖ ρϱ σς ϕφ

ΑΩαω θϑ πϖ ρϱ σς ϕφ|ΑΩα ϑ ϱ ϖ ϕ|ΑΩαω θϑ πϱ ρϖ σς ϕφ|ΑΩαω θϑ πϱ ρϖ σς ϕφ

ΑΩαω θϑ πϖ ρϱ σς ϕφ|ΑΩαω θϑ πϱ ρϖ σς ϕφ|ΑΩαω θϑ πϱ ρϖ σς ϕφ|ΑΩαω θϑ πϱ ρϖ σς ϕφ

ΑΩαω θϑ πϖ ρϱ σς ϕφ|ΑΩαω θϑ πϖ ρϱ σς ϕφ|ΑΩαω θϑ πϖ ρϱ σς ϕφ|ΑΩαω θϑ πϖ ρϱ σς ϕφ

09AZaz−09AZaz−AZaz−AZaz