

A1

- .mp3 FF FB

standardisierte Komprimierung

- .wav 52 43 46 46 ?? ?? ?? ?? 57 41 56 45

unkomprimierte Rohdaten, Speicherung von Audiodaten

- .flac 66 4C 61 43

wie Zip-Datei für Audio,

Original kann wiederhergestellt werden

- .class CA FE BA BE

- UTF-8 EF BB BF

- UTF-16 FE FF FF FE
BE LE

A2

UTF-8

U + 00 41 (A) → 1 Byte → 0¹⁰⁰ _{xxx} ⁰⁰⁰¹ _{xxxx} → 41

U + 00 F6 (ö) → 2 Byte → 10⁰ _{xx} ⁰⁰¹¹ _{xxxx} 10¹¹ _{xx} ⁰¹¹⁰ _{xxxx} → C3 B6

U + 42 10 (Han-chin. Schr.z.) → 3 Byte → 1110 _{xx} ¹⁰⁰ _{xxx}

10⁰⁰ _{xx} ¹⁰⁰⁰ _{xxx}

10⁰¹ _{xx} ⁰⁰⁰⁰ _{xxx}

→ E4 88 90

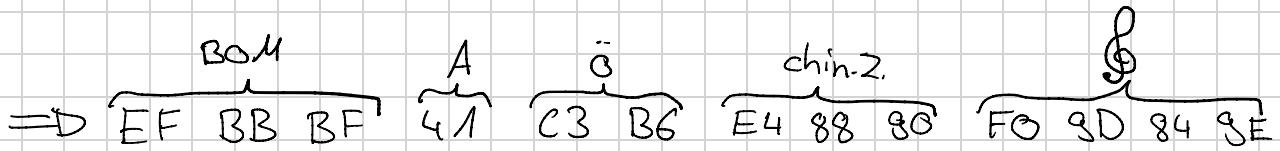
$U + 1D11 E$ (Violinschlüssel) \rightarrow 4 Byte $\rightarrow 1111 0\overset{000}{xx}$

$10\overset{01}{xx} \overset{1101}{xxxx}$

$10\overset{00}{xx} \overset{0100}{xxxx}$

$10\overset{01}{xx} \overset{1110}{xxxx}$

$\rightarrow F0 9D 84 9E$



UTF-16

(A) $U+0041 \rightarrow 0000 0000 0100 0001 \rightarrow 00 41$

(G) $U+00F6 \rightarrow 0000 0000 1111 0110 \rightarrow 00 F6$

(ch) $U+4210 \rightarrow 0100 0010 0001 0000 \rightarrow 42 10$

(G) $U+1D11E \rightarrow 0001 1101 0001 0001 1110$

$- \quad 1 \ 0000 \ 0000 \ 0000 \ 0000$

$0000 \quad 1101 \quad 0001 \quad 0001 \quad 1110$

High-Surrogate:

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A3 a)

Situation 1:

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	Adressen
p 04 Vector2D	q 06 Vector2D	r 04 Vector2D	x 1.0 float	y 30.9 float	x -7.1 float	y 10.5 float										

Situation 2:

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	Adressen
p 04 Vector2D	q 06 Vector2D	r 06 Vector2D	x 1.0 float	y 30.9 float	x 22.2 float	y 10.5 float										

Situation 3:

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	Adressen
p 04 Vector2D	q 06 Vector2D	r 8 Vector2D	x 1.0 float	y 30.9 float	x 22.2 float	y 10.5 float	x 0.0 float	y 0.0 float								

b) In Situation 1 sind p und r alias zueinander.

In Situation 2 sind es q und r, die alias zueinander sind.

In Situation 3 bekommt r eigenen Speicherplatz zugewiesen und referenziert nun nicht mehr auf den Speicher von q.