

CHARACTER CODES

These escape sequences can occur in strings (for example, "\n") and characters (for example, '\'). However, the \u escape sequences should only be used inside strings that have an encoding prefix, such as

```
string message = u8"San Jos\u0000\u00e9 \u0001f684";
```

A string is a sequence of bytes. In the UTF-8 encoding, bytes between 0 and 127 correspond to the ASCII character range (see Table 2). Other Unicode characters are encoded into multiple bytes, where the first byte is ≥ 192 , and subsequent bytes are between 128 and 191. Table 3 shows the encoding.

Table 1 Escape Sequences

| Escape Sequence | Description |
|--|--|
| \n | Newline |
| \r | Carriage return |
| \t | Tab |
| \v | Vertical tab |
| \b | Backspace |
| \f | Form feed |
| \a | Alert |
| \\ | Backslash |
| \" | Double quote |
| \' | Single quote |
| \? | Question mark |
| \uh ₄ h ₃ h ₂ h ₁ h ₀ | A Unicode character, which will be encoded into a sequence of bytes determined by a character encoding |

Table 2 ASCII Code Table

| Dec. Code | Hex Code | Char- acter | Dec. Code | Hex Code | Char- acter | Dec. Code | Hex Code | Char- acter | Dec. Code | Hex Code | Char- acter |
|--------------|-------------|----------------|--------------|-------------|----------------|--------------|-------------|----------------|--------------|-------------|----------------|
| 0 | 00 | \0 | 32 | 20 | Space | 64 | 40 | @ | 96 | 60 | ' |
| 1 | 01 | | 33 | 21 | ! | 65 | 41 | A | 97 | 61 | a |
| 2 | 02 | | 34 | 22 | " | 66 | 42 | B | 98 | 62 | b |
| 3 | 03 | | 35 | 23 | # | 67 | 43 | C | 99 | 63 | c |
| 4 | 04 | | 36 | 24 | \$ | 68 | 44 | D | 100 | 64 | d |
| 5 | 05 | | 37 | 25 | % | 69 | 45 | E | 101 | 65 | e |
| 6 | 06 | | 38 | 26 | & | 70 | 46 | F | 102 | 66 | f |
| 7 | 07 | \a | 39 | 27 | ' | 71 | 47 | G | 103 | 67 | g |
| 8 | 08 | \b | 40 | 28 | (| 72 | 48 | H | 104 | 68 | h |
| 9 | 09 | \t | 41 | 29 |) | 73 | 49 | I | 105 | 69 | i |
| 10 | 0A | \n | 42 | 2A | * | 74 | 4A | J | 106 | 6A | j |
| 11 | 0B | \v | 43 | 2B | + | 75 | 4B | K | 107 | 6B | k |
| 12 | 0C | \f | 44 | 2C | , | 76 | 4C | L | 108 | 6C | l |
| 13 | 0D | \r | 45 | 2D | - | 77 | 4D | M | 109 | 6D | m |
| 14 | 0E | | 46 | 2E | . | 78 | 4E | N | 110 | 6E | n |
| 15 | 0F | | 47 | 2F | / | 79 | 4F | O | 111 | 6F | o |
| 16 | 10 | | 48 | 30 | 0 | 80 | 50 | P | 112 | 70 | p |
| 17 | 11 | | 49 | 31 | 1 | 81 | 51 | Q | 113 | 71 | q |
| 18 | 12 | | 50 | 32 | 2 | 82 | 52 | R | 114 | 72 | r |
| 19 | 13 | | 51 | 33 | 3 | 83 | 53 | S | 115 | 73 | s |
| 20 | 14 | | 52 | 34 | 4 | 84 | 54 | T | 116 | 74 | t |
| 21 | 15 | | 53 | 35 | 5 | 85 | 55 | U | 117 | 75 | u |
| 22 | 16 | | 54 | 36 | 6 | 86 | 56 | V | 118 | 76 | v |
| 23 | 17 | | 55 | 37 | 7 | 87 | 57 | W | 119 | 77 | w |
| 24 | 18 | | 56 | 38 | 8 | 88 | 58 | X | 120 | 78 | x |
| 25 | 19 | | 57 | 39 | 9 | 89 | 59 | Y | 121 | 79 | y |
| 26 | 1A | | 58 | 3A | : | 90 | 5A | Z | 122 | 7A | z |
| 27 | 1B | | 59 | 3B | ; | 91 | 5B | [| 123 | 7B | { |
| 28 | 1C | | 60 | 3C | < | 92 | 5C | \ | 124 | 7C | |
| 29 | 1D | | 61 | 3D | = | 93 | 5D |] | 125 | 7D | } |
| 30 | 1E | | 62 | 3E | > | 94 | 5E | ^ | 126 | 7E | ~ |
| 31 | 1F | | 63 | 3F | ? | 95 | 5F | _ | 127 | 7F | |

| Table 3 UTF-8 Encoding | |
|---|-----------------------------------|
| UTF-8 | Unicode |
| 0 00000000 | 000000 0000000000 0 00000000 |
| 110 000000 10 000000 | 000000 000000 0000 00000000 |
| 1110 0000 10 000000 10 000000 | 000000 0000 0000 0000 00000000 |
| 11110 000 10 000000 10 000000 10 000000 | 0000 0000 0000 0000 0000 00000000 |