Deciphering the mechanics behind the **256-color-palette.sh** script

Dimitri OBEID

February 23, 2024

Contents

1 General presentation of the script

1.1 Description of the script

This script displays each color code from the XTERM palette table on the terminal background in a 6 * 40 table, with the code corresponding to each color written in three digits in the foreground.

1.2 How the script works

If the value "-h" or "–help" is passed as the first argument, a simple message summarizing the purpose of the script is displayed on the terminal, without its main code, written in the **for** loop, being executed.

This message will be displayed in the following languages, depending on the **$LANG** environment variable. It will be displayed in English if the same variable does not contain the ISO 639-1 code for one of these languages:

- German, English, Spanish, French, Indonesian, Portuguese, Russian, Ukrainian and Chinese.

for loop algorithm:

While the value of the **$i** variable, initialized at 16 (value corresponding to the start number of the non-system color code range up to number 255 in the XTERM color table) is strictly less than 256, **then** :

1. The text background color is modified according to the color code corresponding to the value of the variable **$i**, then the three-digit number corresponding to this same value is displayed.

   Here's how it works:

   - `'\e'` : This is the escape character (ASCII code 27), which marks the beginning of any ANSI escape sequence.
   - **48**: This is the code telling the Shell interpreter to change the text background color.
   - **5**: This is the code indicating the use of a custom color index.
   - **$i**: The value of this variable is used to define the XTERM color table number of the specific color to be displayed.
   - **m**: This is the end code of the ANSI control sequence.

2. Text formatting is removed using the **printf** `'\e[0m'` command.
3. **If** the current color index is not the sixth of the current row, **then** a space is displayed to prepare the next iteration of the **for** loop via the **printf** `'\n'` command.

   Else a line break is made via the **printf** `''` command to prepare a new row of six columns.

4. **End of the « if » condition**

End of the « for » loop

1.3 Displaying the XTERM palette table on the terminal

```
 2024-02-05 17:00:04 ⌚  dimob-HP-Pavilion-Gaming-Laptop-17-cd1xxx in /usr/local/lib/Bash-utils
± |unstable ✓| → ./bin/256-color-palette.sh
016 017 018 019 020 021
022 023 024 025 026 027
028 029 030 031 032 033
034 035 036 037 038 039
040 041 042 043 044 045
046 047 048 049 050 051
052 053 054 055 056 057
058 059 060 061 062 063
064 065 066 067 068 069
070 071 072 073 074 075
076 077 078 079 080 081
082 083 084 085 086 087
088 089 090 091 092 093
094 095 096 097 098 099
100 101 102 103 104 105
106 107 108 109 110 111
112 113 114 115 116 117
118 119 120 121 122 123
124 125 126 127 128 129
130 131 132 133 134 135
136 137 138 139 140 141
142 143 144 145 146 147
148 149 150 151 152 153
154 155 156 157 158 159
160 161 162 163 164 165
166 167 168 169 170 171
172 173 174 175 176 177
178 179 180 181 182 183
184 185 186 187 188 189
190 191 192 193 194 195
196 197 198 199 200 201
202 203 204 205 206 207
208 209 210 211 212 213
214 215 216 217 218 219
220 221 222 223 224 225
226 227 228 229
232 233 234 235 236 237
238 239 240 241 242 243
244 245 246 247 248 249
250 251 252 253 254 255
```