




# COLOR BY STUDENTNUMBER (/12)

In this exercise, you will convert you student number (7 ordered numbers) to a 14x14 matrix of numbers in which you “hide” your number, to then afterwards convert said matrix to a picture.

Note: you only need to do this for your own student number! We will not give any further input. The concrete explanation can be found below.

Three examples are:

r7654321	r8041254	r9452555
<pre># studentnumber_7654321.txt 1 0 14 28 42 56 70 84 98 112 126 140 154 168 182 2 1 15 29 43 57 71 85 99 113 127 141 155 169 183 3 2 16 30 44 58 72 86 100 114 128 142 156 170 184 4 3 17 31 45 59 73 87 101 115 129 143 157 171 185 5 4 18 32 46 60 74 88 102 116 130 144 158 172 186 6 5 19 33 47 61 75 89 103 117 131 145 159 173 187 7 6 20 34 48 62 76 90 104 118 132 146 160 174 188 8 7 21 35 49 63 77 91 105 119 133 147 161 175 189 9 8 22 36 50 64 78 92 106 120 134 148 162 176 190 10 9 23 37 51 65 79 93 107 121 135 149 163 177 191 11 10 24 38 52 66 80 94 108 122 136 150 164 178 192 12 11 25 39 53 67 81 95 109 123 137 151 165 179 193 13 12 26 40 54 68 82 96 110 124 138 152 166 180 194 14 13 27 41 55 69 83 97 111 125 139 153 167 181 195 15</pre> 	<pre># studentnumber_8041254.txt 1 0 14 28 42 56 70 84 98 112 126 140 154 168 182 2 1 15 29 43 57 71 85 99 113 127 141 155 169 183 3 2 16 30 44 58 72 86 100 114 128 142 156 170 184 4 3 17 31 45 59 73 87 101 115 129 143 157 171 185 5 4 18 32 46 60 74 88 102 116 130 144 158 172 186 6 5 19 33 47 61 75 89 103 117 131 145 159 173 187 7 6 20 34 48 62 76 90 104 118 132 146 160 174 188 8 7 21 35 49 63 77 91 105 119 133 147 161 175 189 9 8 22 36 50 64 78 92 106 120 134 148 162 176 190 10 9 23 37 51 65 79 93 107 121 135 149 163 177 191 11 10 24 38 52 66 80 94 108 122 136 150 164 178 192 12 11 25 39 53 67 81 95 109 123 137 151 165 179 193 13 12 26 40 54 68 82 96 110 124 138 152 166 180 194 14 13 27 41 55 69 83 97 111 125 139 153 167 181 195 15 0 --&gt; 0 times 0</pre> 	<pre># studentnumber_9452555.txt 1 0 14 28 42 56 70 84 98 112 126 140 154 168 182 2 1 15 29 43 57 71 85 99 113 127 141 155 169 183 3 2 16 30 44 58 72 86 100 114 128 142 156 170 184 4 3 17 31 45 59 73 87 101 115 129 143 157 171 185 5 4 18 32 46 60 74 88 102 116 130 144 158 172 186 6 5 19 33 47 61 75 89 103 117 131 145 159 173 187 7 6 20 34 48 62 76 90 104 118 132 146 160 174 188 8 7 21 35 49 63 77 91 105 119 133 147 161 175 189 9 8 22 36 50 64 78 92 106 120 134 148 162 176 190 10 9 23 37 51 65 79 93 107 121 135 149 163 177 191 11 10 24 38 52 66 80 94 108 122 136 150 164 178 192 12 11 25 39 53 67 81 95 109 123 137 151 165 179 193 13 12 26 40 54 68 82 96 110 124 138 152 166 180 194 14 13 27 41 55 69 83 97 111 125 139 153 167 181 195 15</pre> 

This exercise is structured so that you can skip certain steps, and still obtain an outcome.

Obviously, this will result in the loss of marks, but it shouldn't prevent you in finishing the exercise.

For this exercise, you will make two Python scripts: **studentnumber.py** and **color.py**. The scripts need no input, you start from your own student number.

## 1. STUDENTNUMBER.PY (/5)

Convert the **7 digits of your student number** to a 14x14 matrix by following the following rules (/4):

- Each **digit** of your student numbers corresponds to **1 column** in the resulting matrix.
- Between two consecutive digits, there is **1 column** each time.
- If the **middle digit** is even, you'll start in the **first column**, otherwise you'll start in the **second column**.
- Each digit determines how often it appears consecutively in the column  
→ 0 appears 0 times, 1 appears 1 time, 2 appears 2 times, ...
- Where you start in the column is up to you.
- The rest of your matrix is filled up with random numbers from **0 till 195**.
- >

You write out your matrix to a **textfile** called studentnumber\_<number>.txt (/1)











## 2. COLOR.PY (/7)

**Read in** the textfile you made in the previous subquestion (studentnumber\_<number>.txt) (/1)

Go looking for a **Python** library with which you can make your own images, and install it. You will make an image based upon the following rules (/5):

- The **picture** measures **140 px x 140 px**.
- The **last digit** of your student number **determines the color** according to the table below.
- The **numbers in your matrix determine the intensity**. In other words: the picture will always get a gradient effect wherein the digits of your student number will be striking.

**Save your image** as <number>.jpg. (/1)

LAST DIGIT	COLOR		<i>R</i>	<i>G</i>	<i>B</i>
0		YELLOW	255	255	0
1		ORANGE	255	128	0
2		RED	255	0	0
3		PURPLE	255	0	255
4		BLUE	0	0	255
5		TURQUOISE	0	255	255
6		GREEN	0	255	0
7		DARK GREEN	0	128	0
8		BROWN	128	0	0
9		GREY	0	0	0