

## Diff:

### Differences between given skeleton and solution

In order to make the sample solution easier to understand, the differences between it and the given skeleton source code were highlighted with the help of the program `diff`.

### Legend:

- Gray: unchanged text (only excerpts).
- Green: new lines
- Yellow: changed lines
- Red: deleted lines

Note: Files not listed have not been changed.

This document was created with the help of [diff2html](#) erstellt.

```
diff -u ../course08-performance-optimization/exercise/code/01_task1.py ../course08-performance-optimization/exercise/solution/01_task1.py
```

../course08-performance-optimization/exercise/code/01_task1.py	../course08-performance-optimization/exercise/solution/01_task1.py
:	:
	1
	2
1 # adapted from source: <a href="http://numba.pydata.org/numba-doc/dev/user/examples.html">http://numba.pydata.org/numba-doc/dev/user/examples.html</a>	3 # adapted from source: <a href="http://numba.pydata.org/numba-doc/dev/user/examples.html">http://numba.pydata.org/numba-doc/dev/user/examples.html</a>
2	4
3 from matplotlib.pyplot import imshow, show, cm, savefig	5 from matplotlib.pyplot import imshow, show, cm, savefig
	6 import matplotlib.pyplot as plt
4 import numpy as np	7 import numpy as np
5	8
	9 import time
	10
6	11
7 def mandel(x, y, max_iters):	12 def mandel(x, y, max_iters):
8 """	13 """
:	:
36	41
37 return image	42 return image
38	43
39 resx = 500	44 dt_results = []
40 resy = 500	45 for r in range(1, 6):
41	46 res = r*100
42 image = np.zeros((resx, resy), dtype=np.uint8)	47 image = np.zeros((res, res), dtype=np.uint8)
43	48
44 xmin, xmax, ymin, ymax = -2.0, 1.0, -1.0, 1.0	49 xmin, xmax, ymin, ymax = -2.0, 1.0, -1.0, 1.0
45	50
46 create_fractal(xmin, xmax, ymin, ymax, image, 255)	51 t0 = time.time()
	52 create_fractal(xmin, xmax, ymin, ymax, image, 255)
	53 dt = time.time()-t0
	54 print("res = {}; Time needed: {}".format(res, dt))
	55 dt_results.append((res, dt))
	56
	57 # Time to create the image is not included in the calculation
	58 plt.figure()
	59 # set special colormap
	60 imshow(image, extent=(xmin, xmax, ymin, ymax), cmap=cm.plasma)
	61
	62 # conversion from [(1, a), (2, b), (3, c), ...] to [[1, 2, 3, ...], [a, b, c, ...]]
	63 # siehe <a href="https://docs.python.org/3/library/functions.html#zip">https://docs.python.org/3/library/functions.html#zip</a>
	64 res_list, dt_list = zip(*dt_results)
	65 plt.figure()
	66 plt.plot(res_list, dt_list, 'b.-')
	67 plt.xlabel("resolution")
	68 plt.ylabel("computation time")
47	69
48 # set special colormap	
49 imshow(image, extent=(xmin, xmax, ymin, ymax), cmap=cm.plasma)	
50 show()	70 show()

```
Nur in ../course08-performance-optimization/exercise/solution/: 02_task2.py.
```

```
Nur in ../course08-performance-optimization/exercise/solution/: build.
```

```
Nur in ../course08-performance-optimization/exercise/solution/: .directory.
```

```
Nur in ../course08-performance-optimization/exercise/solution/: .gitignore.
```

```
Nur in ../course08-performance-optimization/exercise/solution/: mandelcy.cpython-38-x86_64-linux-gnu.so.
```

```
Nur in ../course08-performance-optimization/exercise/solution/: mandel-cython.c.
```

```
Nur in ../course08-performance-optimization/exercise/solution/: mandel-cython-main.py.
```

```
Nur in ../course08-performance-optimization/exercise/solution/: mandel-cython.png.
```

```
Nur in ../course08-performance-optimization/exercise/solution/: mandel-cython.pyx.
```

```
Nur in ../course08-performance-optimization/exercise/solution/: mandel-cython-setup.py.
```