Mandelbrot Set – Part 3  
Numerical Scientific Computing Mini-Project

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**Course:** Numerical Scientific Computing

# Docstrings and Doctests (3 cases), see mandelbrot\_vectorized.py

Graphical user interface, text

Description automatically generated

Text

Description automatically generated

A screenshot of a computer

Description automatically generated with medium confidence

# OpenCL with defined memory types for all variables

\_\_global memory data type for the input and output data.

\_\_private memory data type for data that is only relevant for workers within the function.

Text

Description automatically generated

# Benchmarking results for grid-sizes across computation parameters

# Extra features

* Zoom Animation
  + Code: mandelbrot\_iteration\_animation.py
    - GitHub: <https://github.com/LukasKristensen/Mandelbrot-Python/blob/main/Iterations%20Animation/mandelbrot_iteration_animation.py>
  + Video of output: <https://www.youtube.com/watch?v=L2zKIrriDfI>
* Iteration Animation
  + Code: mandelbrot\_animation.py
    - GitHub: <https://github.com/LukasKristensen/Mandelbrot-Python/blob/main/Zoom%20Animation/mandelbrot_animation.py>
  + Video of output: <https://www.youtube.com/watch?v=8BjqgaIuses>