Instructions 04/03

In his lecture, we continue to investigate numerical integration schemes.

To do List

1. Last time I asked you to implement the midpoint method. Watch the video on my implementation of the midpoint method. Compare to your implementation and make sure you get similar results. If you cannot fix your code, I have provided the files.

2. Watch the videos on Simpsons method and the conclusion.

3. Modify your implementation of the midpoint method to create

   - An implementation of the Trapeziodal method

     ```
     approx_int = trapeziodal_method(f,a,b,n)
     ```

   - An implementation of the Trapeziodal method

     ```
     approx_int = simpsons_method(f,a,b,n)
     ```

   Your functions should be vectorized as illustrated in my midpoint method implementation

4. Test your functions following my `run_mid_point.m`, i.e. run your code for an increasing number of intervals and compute the ratio of the errors.

Objectives

By the end of this lecture you should have a working version of the Trapeziodal and Simpsons method implementations.