ADVANCED PROGRAMMING FOR SCIENTIFIC COMPUTING - HMMA435 - 2020/2021

EVALUATION - FUNCTIONS AND CLASSES

les fichiers à rendre à l'issue de cette évaluation sont indiqués en rouge. *merci de respecter la dénomination demandée. Certains fichiers headers sont fournis dans le dossier* /CC1

Exercice 1. We aim at evaluating definite integrals of the form $\int_a^b f(t)\,dt$ using the trapezoidal rule, based on partitioning the interval $[a, b]$ into n subintervals, where n is a positive integer. This is *a sequel to the previous evaluation, and you can of course re-use your previous code*.

We aim at defining **a class for definite integrals** that contains:

(1) two data members for the lower and upper integral bounds, another data member as a pointer to a function for the integrand,
(2) a few function members for manipulating and evaluating the definite integral with the Trapezoidal Rule.

The complete declaration of such a class is provided in /CC2/.

↦ **define** this class, called class_definite_integral and the corresponding methods in a compilation unit called class_definite_integral.cpp.

↦ **test all methods** of your class in a main_class_integral.cpp program. Provide in a separate file the full instructions to compile and link the different compilation units (either through a Makefile or a script file).

Fin du sujet.