## Homework 1

- No "Collaborative" effort allowed. Students are expected to work themselves.
- Its okay to discuss, but not okay to share code or ask others to code for you!!!
- Penalty for late submissions.
- Severe penalty for academic dishonesty.
- 1. Consider a function f(x) = sin(x) in the interval  $[0, \pi]$ . Write serial and OpenMP parallel codes to numerically integrate the function using the
  - (a) Trapezoidal Rule
  - (b) Montecarlo Method
- 2. Perform a convergence study, using different numbers of divisions (or sampling points), by comparing the integral obtained the numerical method with the analytical integral.
- 3. Perform a timing study using 2,4,6 and 8 OpenMP threads. Be sure to report average times of at least 5 runs of the code.
- 4. Write a report of results obtained. Only PDF copies of report and codes are to be submitted on moodle in a single zip / tar file.