CSC 340.02 - Fall 2021 - Assignment 05
Due: 12/1/2021 11:55pm
Grade: 150pt - 15%

Guidelines for the assignment submissions:

What to submit?

- One zip/tar.gz file:
  - Name: `<First Name><Last Name>-Assignment-##.zip`
  - PDF file for question 1
  - Source code should include only files that we create and edit (*.cpp and/or *.h) for question 2

How to submit?

iLearn, Assignment Submission section

1. Trace the exchange sort (15pt), selection sort (15pt), bubble sort (15pt), insertion sort (15pt) and merge sort (30pt) as they sort the following array into ascending order: (90pt)

   12 23 5 10 34 7

   You can do this assignment on paper, then organize the snapshots of your work into a single pdf file. Or use Google Sheets, Google Drawings… to illustrate the steps. Provide an explanation as you go through the steps of sorting to show that you understand these algorithms.

2. Implementation (60pt)

   Mark and Jane are very happy after having their first child. Their son loves toys, so Mark wants to buy some. There are a number of different toys lying in front of him, tagged with their prices. Mark has only a certain amount to spend, and he wants to maximize the number of toys he buys with this money. Given a list of toy prices and an amount to spend, determine the maximum number of toys he can buy. Note each toy can be purchased only once.

   Input:
   Enter the dollar amount Mark can spend: 50
   Enter the number of items: 7
   Enter the toy prices: 1 12 5 111 200 1000 10

   Output:
   Maximum number of items Mark can buy: 4

   NOTES: you're not allowed to use standard library functions in your solution.