

### STUDENT ACTIVITY 3.3: SORTING PRACTICE

MTA Course: Software Development Fundamentals

Topic: Understand algorithms and data structures.

File name: SoftDevFund\_SA\_3.3

#### **Lesson Objective:**

**3.3:** Understand algorithms and data structures.

#### **Resources, software, and additional files needed for this lesson:**

- SoftDevFund\_RL\_3.3
- SoftDevFund\_PPT\_3.3
- SoftDevFund\_SA\_3.3
- SoftDevFund\_SA\_3.3\_key

#### **Directions to the student:**

Practice sorting the data sets below using the sorting algorithms identified. Remember that the following sorts are implemented using nested *for* loops. Write the resulting sequence of integers for each value of the outer-loop control variable after the inner loop has been completed.

**Content:****1. Bubble Sort**

<i>outer</i>	84	50	62	82	83	15
0	_____	_____	_____	_____	_____	_____
1	_____	_____	_____	_____	_____	_____
2	_____	_____	_____	_____	_____	_____
3	_____	_____	_____	_____	_____	_____
4	_____	_____	_____	_____	_____	_____

**2. Selection Sort**

<i>outer</i>	20	2	10	34	83	29
0	_____	_____	_____	_____	_____	_____
1	_____	_____	_____	_____	_____	_____
2	_____	_____	_____	_____	_____	_____
3	_____	_____	_____	_____	_____	_____
4	_____	_____	_____	_____	_____	_____

**3. Insertion Sort.**

<i>outer</i>	83	95	44	37	38	72
1	_____	_____	_____	_____	_____	_____
2	_____	_____	_____	_____	_____	_____
3	_____	_____	_____	_____	_____	_____
4	_____	_____	_____	_____	_____	_____
5	_____	_____	_____	_____	_____	_____