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Sorting Algorithms Exercise #1

Lab overview:

Scenario

You are working on a project which requires you to become familiar with sorting algorithms suitable for sorting a small amount of data. In this lab, you will implement an Insertion Sort and a Quick Sort.

Objectives:

After completing this lab, you will be able to:

1. [Implement an Insertion Sort in Python](#)
2. Implement a Quick Sort in Python

Setup:

Before you begin this lab, you must complete the following steps:

1. [Go to jupyter.org](#)
2. On the Jupyter homepage, scroll down and click **Try it in your browser**.
3. On the Try Jupyter page, click **Try Classic Notebook**.

Exercise 1:

In this exercise, you will implement an [Insertion Sort](#)

Task 1: Creating an Insertion Sort

1. On the Jupyter Index page, click **File > New Notebook > Python 3**.
2. Copy the following code into the notebook

```
def insertion_sort(array):  
  
    for i in range(1, len(array)):  
  
        #current number to be compared  
  
        curNum = array[i]  
  
        #compare curNum with the sorted part of the array and insert curNum  
  
        while i>0 and array[i-1] > curNum:  
  
            array[i] = array[i-1]  
  
            i = i-1  
  
            array[i] = curNum  
  
array=[16,23,43,1,31,8]  
  
print('Unsorted array')  
  
print(array)  
  
print('_')  
  
insertion_sort(array)  
print(' ')  
  
print('Sorted array')  
  
print(array)
```

1. To run the code, click **Run**.
2. View the results.
3. Has the array been sorted correctly?



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