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Searching Algorithms Exercise #1

Lab overview:

Scenario

You are working on a project which requires you to search a small array for a specific piece of data. In this lab, you will implement a Linear Search and a Binary Search.

Objectives:

After completing this lab, you will be able to:

1. Implement a Linear Search in Python.
2. Implement a Binary Search 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:

Scenario

In this exercise, you will implement a Linear Search.

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 search_linear(array, target):  
  
    for i in range (len(array)):  
  
        if (array[i] == target):  
  
            return i  
  
    return None  
  
target = 5  
  
array = [1, 0, 4, 2, 3, 5]  
  
result = search_linear(array, target)  
  
if result is not None:  
  
    print('Value {} found at position {} using linear search'.format(target, result+1))  
  
else: print('Not found')
```

1. To run the code, click **Run**.
2. View the results.
3. At what position was the target value found?

Task 2: Search for a different target value

1. The seventh line of code reads **target = 5**
2. Change the target value from **5** to **8**
3. To run the code, click **Run**.
4. View the results.
5. Was the target value found?



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