PRAKTIKUM 5.

1. **Buatlah source code Bubble Sort, Selection Sort dan Insertion Sort berikut ini (simpan dengan nama Sort1_NIM.ipynb)**
2. **Jelaskan algoritma dari metode Bubble sort, Selection Sort dan Insertion Sort berikut ini (simpan dengan nama Sort1_NIM.pdf)**

Python program for implementation of Bubble Sort

```
def bubbleSort(arr):
    n = len(arr)
    swapped = False

    for i in range(n-1):
        for j in range(0, n-i-1):
             if arr[j] > arr[j + 1]:
                swapped = True
                arr[j], arr[j + 1] = arr[j + 1], arr[j]

        if not swapped:

# Driver code to test above
arr = [64, 34, 25, 12, 22, 11, 90]

bubbleSort(arr)

print("Sorted array is:")
for i in range(len(arr)):
    print("% d" % arr[i], end=" ")
```

```
# Python program for implementation of \
# Selection Sort

import sys
A = [64, 25, 12, 22, 11]

for i in range(len(A)):
    min_idx = i
    for j in range(i+1, len(A)):
        if A[min_idx] > A[j]:
            min_idx = j

        A[i], A[min_idx] = A[min_idx], A[i]

print ("Sorted array")
for i in range(len(A)):
    print("%d" %A[i],end=" ")
```

```
# Python program for implementation of # Insertion
Sort

# Function to do insertion sort

def insertionSort(arr):

        for i in range(1, len(arr)):
          key = arr[i]
          j = i-1
        while j >= 0 and key < arr[j] :
           arr[j + 1] = arr[j]
           j -= 1
        arr[j + 1] = key

# Driver code to test above
arr = [12, 11, 13, 5, 6]
insertionSort(arr)
for i in range(len(arr)):
    print ("% d" % arr[i])
```