**DAY 2**

**Assignment 1:**

**Pseudocode and Flowchart for Sorting Algorithm** - Write pseudocode and create a flowchart for a bubble sort algorithm. Provide a brief explanation of how the algorithm works and a simple array of integers to demonstrate a dry run of your algorithm.

**Solution :**

start

read array a

length=n

for i in range of 0 to n-1:

for j in range of 0 to n-i-1:

if a[j]>a[j+1]

swap a[j] and a[j+1]

end for

end for

end

47 22 77 2 20 size of arr:5

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| i | current element=arr[j-1] | j=1 | arr[j] | arr[j]<current element | j<n-i | temp=arr[j] | arr[j]=arr[j-1] | arr[j-1]=temp |
| 0 | 47 | 1 | 22 | True | true | 22 | 47 | 22 |
| 0 | 47 | 2 | 77 | False |  |  |  |  |
| 0 | 77 | 3 | 2 | True | True | 2 | 77 | 2 |
| 0 | 77 | 4 | 20 | True | True | 20 | 77 | 20 |
| 1 | 22 | 1 | 47 | False |  |  |  |  |
| 1 | 47 | 2 | 2 | True | True | 2 | 47 | 2 |
| 1 | 47 | 3 | 20 | True | True | 20 | 47 | 20 |
| 2 | 22 | 1 | 2 | True | True | 2 | 22 | 2 |
| 2 | 22 | 2 | 20 | True | True | 20 | 22 | 20 |
| 3 | 2 | 1 | 20 | False |  |  |  |  |

**Finally array is sorted : 2 20 22 47 77**