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Kelas : TI-24-PA

Matkul : Desain Analisis Algoritma

## Bubble Sort Descending

```
bubblesort_dsc.cpp
1 #include <iostream>
2 using namespace std;
3
4 void bubblesort(int arr[], int n){
5     int i, j, tmp;
6     for (i = 0; i < n; i++){
7         for (j = 0; j < n - i - 1; j++){
8             if (arr[j] < arr[j + 1]){
9                 tmp = arr[j];
10                arr[j] = arr[j + 1];
11                arr[j + 1] = tmp;
12            }
13        }
14    }
15 }
16
17 int main (){
18     int array [100], n, i, j;
19     cout<<"masukan banyak elemen: ";
20     cin>>n;
21
22     for (i = 0; i < n; i++){
23         cout<<"masukan nilai: ";
24         cin>>array[i];
25     }
26
27     bubblesort(array, n);
28     cout<<"hasil pengurutan dengan algoritma bubblesort:\n";
29
30     for (i = 0; i < n; i++){
31         cout<<array[i]<<" ";
32     }
33     cout<<"\n";
34 }
```

```
C:\Users\User\Documents\Algo smt 2\Pertemuan 1\Tugas\bubbles...
masukan nilai: 42
masukan nilai: 32
hasil pengurutan dengan algoritma bubblesort:
42 32 11

-----
Process exited after 7.897 seconds with return value 0
Press any key to continue . . .
```

## Insertion Sort Descending

```
InsertionSort_dsc.cpp
1 #include <iostream>
2 using namespace std;
3
4 int main (){
5     int y;
6
7     cout << "Masukan banyak array: ";
8     cin >> y;
9     cout << endl;
10
11     int x[y];
12
13     for (int i = 0; i < y; i++){
14         cout << "Masukan angka ke-" << i + 1 << ": ";
15         cin >> x[i];
16     }
17
18     for (int i = 1; i < y; i++){
19         int key = x[i];
20         int j = i - 1;
21         while (j >= 0 && x[j] < key){
22             x[j + 1] = x[j];
23             j--;
24         }
25         x[j + 1] = key;
26         cout << "Proses dalam penyortiran" << endl;
27         for (int m = 0; m < y; m++){
28             cout << x[m] << " ";
29         }
30         cout << endl;
31     }
32
33     cout << "Output:" << endl;
34     for (int m = 0; m < y; m++){
35         cout << x[m] << " ";
36     }
37
38     return 0;
39 }
```

```
C:\Users\User\Documents\Algo smt 2\Pertemuan 1\Tugas\InsertionS...
Masukan angka ke-1: 53
Masukan angka ke-2: 44
Masukan angka ke-3: 12
Masukan angka ke-4: 32
Proses dalam penyortiran
53 44 12 32
Proses dalam penyortiran
53 44 12 32
Proses dalam penyortiran
53 44 32 12
Output:
53 44 32 12

-----
Process exited after 6.335 seconds with return value 0
Press any key to continue . . .
```

## Selection Sort Descending

SelectionSort\_dsc.cpp

```
1  #include <iostream>
2  using namespace std;
3
4  void selectionSort(int arr[], int n);
5
6  int main (){
7      int n, i;
8      cout << "Masukan jumlah elemen : ";
9      cin >> n;
10     int arr[n];
11
12     cout<<endl;
13
14     for (i = 0; i < n; i++){
15         cout << "Masukan nilai elemen : ";
16         cin >> arr[i];
17     }
18
19     cout << "\nData sebelum sorting : ";
20     for (i = 0; i < n; i++){
21         cout << arr[i] << " ";
22     }
23     cout << endl;
24     selectionSort (arr, n);
25     cout << "Data setelah sorting : ";
26     for (i = 0; i < n; i++){
27         cout << arr[i] << " ";
28     }
29     return 0;
30 }
31
```

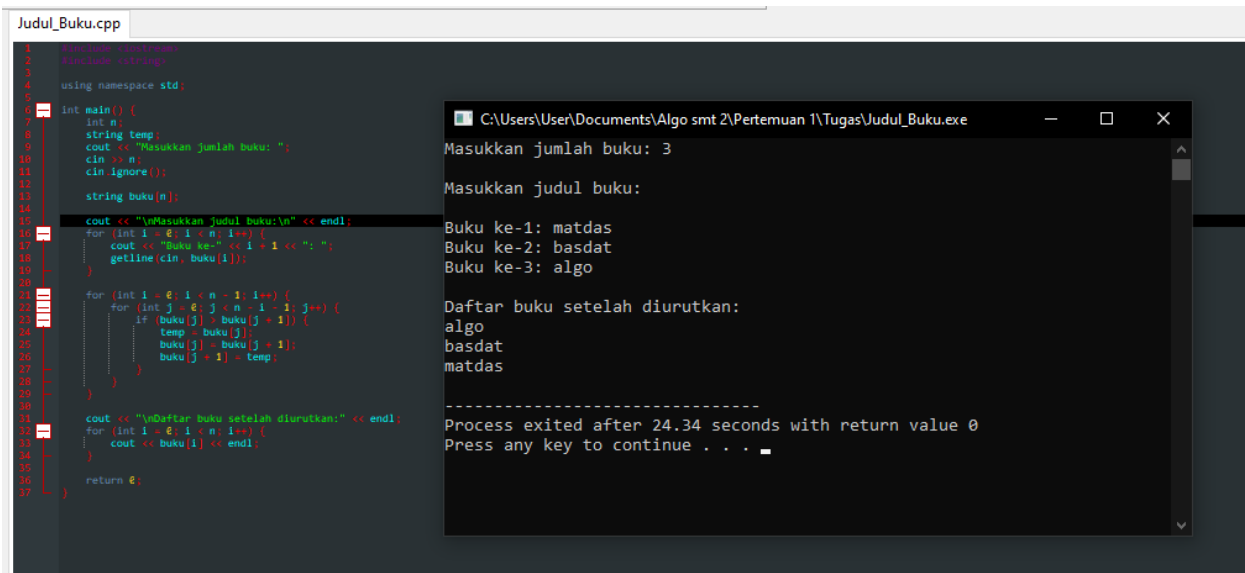
SelectionSort\_dsc.cpp

```
30 }
31
32 void selectionSort (int arr[], int n) {
33     int i, j, Indeks_Terbesar, temp;
34     for (i = 0; i < n-1; i++){
35         Indeks_Terbesar = i;
36         for (j = i+1; j < n; j++){
37             if (arr[j] > arr[Indeks_Terbesar]) {
38                 Indeks_Terbesar = j;
39             }
40         }
41         temp = arr[Indeks_Terbesar];
42         arr[Indeks_Terbesar] = arr[i];
43         arr[i] = temp;
44         cout << "Iterasi ke-" << i+1 << " : ";
45         for (int k = 0; k < n; k++){
46             cout << arr[k] << " ";
47         }
48         cout << endl;
49     }
50 }
51
```

```
C:\Users\User\Documents\Algo smt 2\Pertemuan 1\Tugas\SelectionSort_dsc...
Masukan jumlah elemen : 3
Masukan nilai elemen : 22
Masukan nilai elemen : 53
Masukan nilai elemen : 11

Data sebelum sorting : 22 53 11
Iterasi ke-1: 53 22 11
Iterasi ke-2: 53 22 11
Data setelah sorting : 53 22 11
-----
Process exited after 20.44 seconds with return value 0
Press any key to continue . . .
```

## Tugas No.02 (Buku)



The image shows a C++ program in a text editor and its execution in a command prompt window.

**Code (Judul\_Buku.cpp):**

```
1 #include <iostream>
2 #include <string>
3
4 using namespace std;
5
6 int main() {
7     int n;
8     string temp;
9     cout << "Masukkan jumlah buku: ";
10    cin >> n;
11    cin.ignore();
12
13    string buku[n];
14
15    cout << "\nMasukkan judul buku:\n" << endl;
16    for (int i = 0; i < n; i++) {
17        cout << "Buku ke-" << i + 1 << ": ";
18        getline(cin, buku[i]);
19    }
20
21    for (int i = 0; i < n - 1; i++) {
22        for (int j = 0; j < n - i - 1; j++) {
23            if (buku[j] > buku[j + 1]) {
24                temp = buku[j];
25                buku[j] = buku[j + 1];
26                buku[j + 1] = temp;
27            }
28        }
29    }
30
31    cout << "\nDaftar buku setelah diurutkan:" << endl;
32    for (int i = 0; i < n; i++) {
33        cout << buku[i] << endl;
34    }
35
36    return 0;
37 }
```

**Execution Output:**

```
C:\Users\User\Documents\Algo smt 2\Pertemuan 1\Tugas\Judul_Buku.exe
Masukkan jumlah buku: 3
Masukkan judul buku:
Buku ke-1: matdas
Buku ke-2: basdat
Buku ke-3: algo

Daftar buku setelah diurutkan:
algo
basdat
matdas

-----
Process exited after 24.34 seconds with return value 0
Press any key to continue . . .
```