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1. Diketahui 2 buah array 2 dimensi 3×3 . Gabungkan 2 array menjadi satu dimensi kemudian lakukan pengurutan di mulai dari yang terkecil. Buatlah algoritma hingga program C++-nya.

= Algoritma

→ Analisis = Menggabungkan 2 array 2 dimensi ordo 3×3 menjadi 1 dimensi. lalu, masukkan data dalam array dan lakukan pengurutan dari data terkecil ke data terbesar.

→ Deskripsi Deklarasi =

$k = 0, b = 9, temp, i, j$: integer

C : array $[1 \dots 50]$ of integer

data : array $[1 \dots 50][1 \dots 50]$ of integer

→ Deskripsi

for $i \leftarrow 0$ to 3 do

for $j \leftarrow 0$ to 3 do

write('masukkan data ke $[i][j]$ ')

read(data $[i][j]$)

end for

end for

for $i \leftarrow 0$ to 3 do

for $j \leftarrow 0$ to 3 do

read (data [i][j])

end for

endfor

for i ← 3 to 6 do

write ("data ke-[i-3][j-3])

read (data [i][j])

endfor

endfor

for i ← 3 to 6 do

for j ← 3 to 6 do

read (data [i][j])

endfor

endfor

for i ← 0 to 3 do

for j ← 0 to 3 do

c[k] ← data [i][j]

k ← k+1

end for

end for

for i ← 3 to 6 do

for j ← 3 to 6 do

c[b] ← data [i][j]

b ← b+1

end for

end for

for i ← 0 to 18 do

write (c[i])

{ Data Setelah digabungkan }

end for

i ← 0

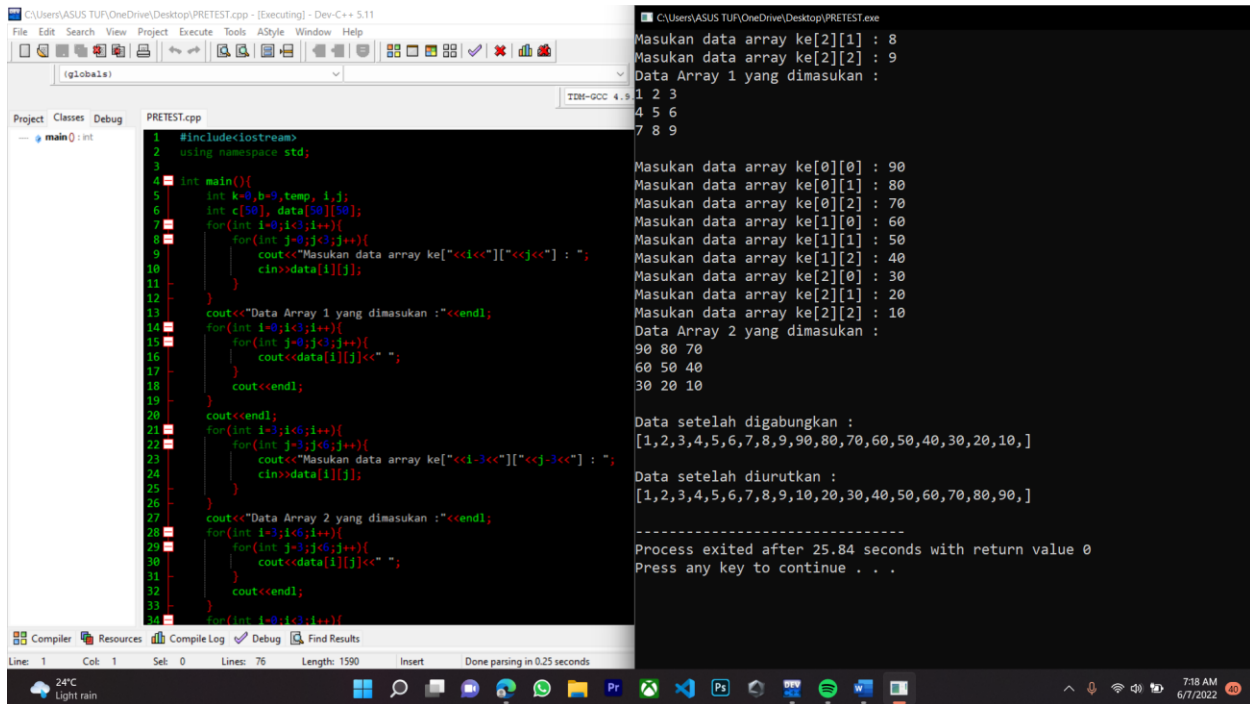
while (1)

```

if (i > 17)
break;
j ← 0
while (! (j > 16))
    if (c[j] > c[j+1])
        temp ← c[j]
        c[j] ← c[j+1]
        c[j+1] ← temp
    else
        endif
    j ← j+1
i ← i+1
write ("Data Setelah diurutkan")
for i ← 0 to 18 do
    write (c[i])
end for

```


PERCOBAAN 1 :



The screenshot shows a C++ IDE with the file `PRETEST.cpp` open. The code defines a 5x5 array `c` and prompts the user to input data for it. It then prints the array. The execution window shows the program running, with the user inputting values for the array. The output shows the array as entered.

```
1 #include<iostream>
2 using namespace std;
3
4 int main()
5 {
6     int k=0,b=0,temp,i,j;
7     int c[50],data[50][50];
8     for(int i=0;i<5;i++){
9         for(int j=0;j<5;j++){
10             cout<<"Masukan data array ke["<<i<<"]["<<j<<"] : ";
11             cin>>data[i][j];
12         }
13     }
14     cout<<"Data Array 1 yang dimasukan : "<<endl;
15     for(int i=0;i<5;i++){
16         for(int j=0;j<5;j++){
17             cout<<data[i][j]<<" ";
18         }
19     }
20     cout<<endl;
21     for(int i=3;i<6;i++){
22         for(int j=3;j<6;j++){
23             cout<<"Masukan data array ke["<<i<<"]["<<j<<"] : ";
24             cin>>data[i][j];
25         }
26     }
27     cout<<"Data Array 2 yang dimasukan : "<<endl;
28     for(int i=3;i<6;i++){
29         for(int j=3;j<6;j++){
30             cout<<data[i][j]<<" ";
31         }
32     }
33     cout<<endl;
34     for(int i=0;i<5;i++){
```

Execution Output:

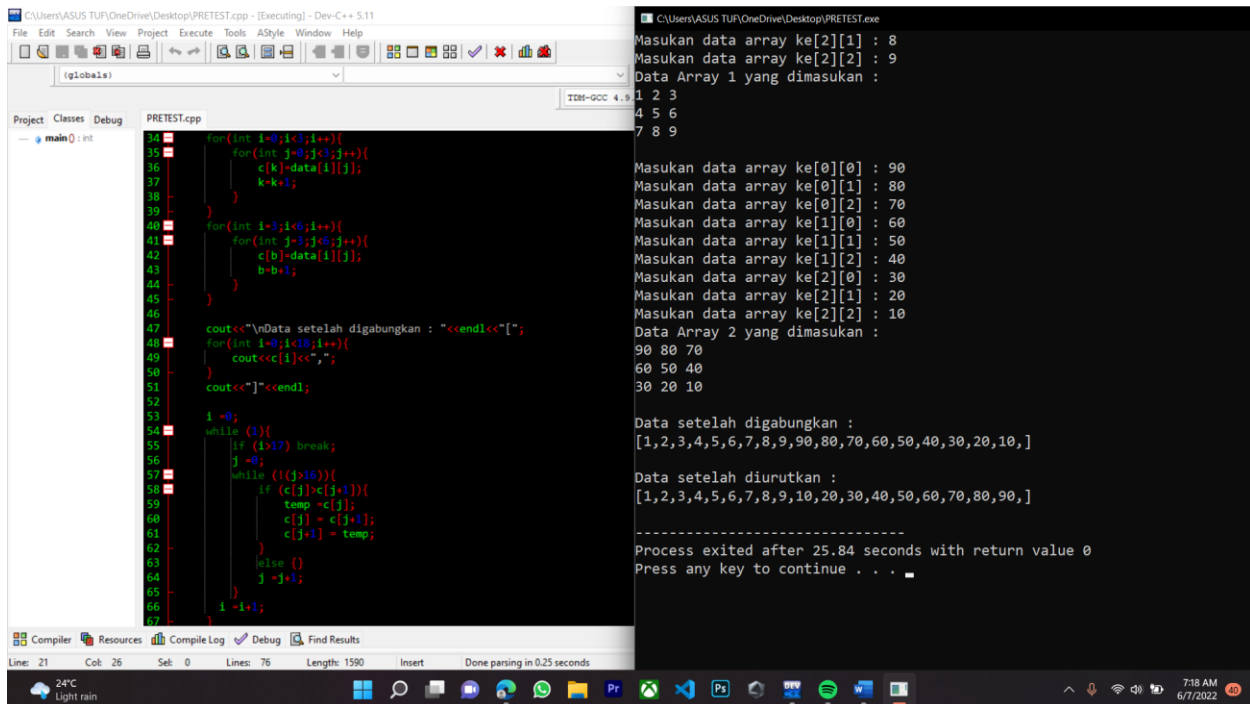
```
Masukan data array ke[2][1] : 8
Masukan data array ke[2][2] : 9
Data Array 1 yang dimasukan :
1 2 3
4 5 6
7 8 9

Masukan data array ke[0][0] : 90
Masukan data array ke[0][1] : 80
Masukan data array ke[0][2] : 70
Masukan data array ke[1][0] : 60
Masukan data array ke[1][1] : 50
Masukan data array ke[1][2] : 40
Masukan data array ke[2][0] : 30
Masukan data array ke[2][1] : 20
Masukan data array ke[2][2] : 10
Data Array 2 yang dimasukan :
90 80 70
60 50 40
30 20 10

Data setelah digabungkan :
[1,2,3,4,5,6,7,8,9,90,80,70,60,50,40,30,20,10,]

Data setelah diurutkan :
[1,2,3,4,5,6,7,8,9,10,20,30,40,50,60,70,80,90,]

-----
Process exited after 25.84 seconds with return value 0
Press any key to continue . . .
```



The screenshot shows the same C++ IDE with the file `PRETEST.cpp` open. The code is modified to include a sorting algorithm (Bubble Sort) and a loop to print the array after sorting. The execution window shows the program running, with the user inputting values for the array. The output shows the array after sorting.

```
34     for(int i=0;i<5;i++){
35         for(int j=0;j<5;j++){
36             c[k]=data[i][j];
37             k=k+1;
38         }
39     }
40     for(int i=3;i<6;i++){
41         for(int j=3;j<6;j++){
42             c[b]=data[i][j];
43             b=b+1;
44         }
45     }
46
47     cout<<"\nData setelah digabungkan : "<<endl<<";
48     for(int i=0;i<18;i++){
49         cout<<c[i]<<" ";
50     }
51     cout<<" "<<endl;
52
53     i = 0;
54     while (1){
55         if (i>17) break;
56         j = 0;
57         while (1){
58             if (c[j]>c[j+1]){
59                 temp = c[j];
60                 c[j] = c[j+1];
61                 c[j+1] = temp;
62             }
63             else {
64                 j = j+1;
65             }
66             i = i+1;
67         }
```

Execution Output:

```
Masukan data array ke[2][1] : 8
Masukan data array ke[2][2] : 9
Data Array 1 yang dimasukan :
1 2 3
4 5 6
7 8 9

Masukan data array ke[0][0] : 90
Masukan data array ke[0][1] : 80
Masukan data array ke[0][2] : 70
Masukan data array ke[1][0] : 60
Masukan data array ke[1][1] : 50
Masukan data array ke[1][2] : 40
Masukan data array ke[2][0] : 30
Masukan data array ke[2][1] : 20
Masukan data array ke[2][2] : 10
Data Array 2 yang dimasukan :
90 80 70
60 50 40
30 20 10

Data setelah digabungkan :
[1,2,3,4,5,6,7,8,9,90,80,70,60,50,40,30,20,10,]

Data setelah diurutkan :
[1,2,3,4,5,6,7,8,9,10,20,30,40,50,60,70,80,90,]

-----
Process exited after 25.84 seconds with return value 0
Press any key to continue . . .
```

```
C:\Users\ASUS TUF\OneDrive\Desktop\PRETEST.cpp - [Executing] - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
(global)
Project Classes Debug PRETEST.cpp
main() : int
44 }
45 }
46 }
47 cout<<"\nData setelah digabungkan : "<<endl<< "[";
48 for(int i=0; i<10; i++){
49     cout<<c[i]<<",";
50 }
51 cout<<"]"<<endl;
52
53 i=0;
54 while (1){
55     if (i>7) break;
56     j=0;
57     while ((j<10)){
58         if (c[j]>c[j+1]){
59             temp=c[j];
60             c[j]=c[j+1];
61             c[j+1]=temp;
62         }
63         j=j+1;
64     }
65     i=i+1;
66 }
67
68 cout<<"\nData setelah diurutkan : "<<endl;
69 cout<< "[";
70 for(int i=0; i<10; i++){
71     cout<<c[i]<<",";
72 }
73 cout<<"]"<<endl;
74
75 return 0;
76 }

Compiler Resources Compile Log Debug Find Results
Line: 21 Col: 26 Sek: 0 Lines: 76 Length: 1590 Insert Done parsing in 0.23 seconds
24°C Light rain 7:19 AM 6/7/2022
```

```
C:\Users\ASUS TUF\OneDrive\Desktop\PRETEST.exe
Masukan data array ke[2][1] : 8
Masukan data array ke[2][2] : 9
Data Array 1 yang dimasukan :
1 2 3
4 5 6
7 8 9

Masukan data array ke[0][0] : 90
Masukan data array ke[0][1] : 80
Masukan data array ke[0][2] : 70
Masukan data array ke[1][0] : 60
Masukan data array ke[1][1] : 50
Masukan data array ke[1][2] : 40
Masukan data array ke[2][0] : 30
Masukan data array ke[2][1] : 20
Masukan data array ke[2][2] : 10
Data Array 2 yang dimasukan :
90 80 70
60 50 40
30 20 10

Data setelah digabungkan :
[1,2,3,4,5,6,7,8,9,90,80,70,60,50,40,30,20,10,]

Data setelah diurutkan :
[1,2,3,4,5,6,7,8,9,10,20,30,40,50,60,70,80,90,]

-----
Process exited after 25.84 seconds with return value 0
Press any key to continue . . .
```

PERCOBAA 2:

```
C:\Users\ASUS TUF\OneDrive\Desktop\PRETEST.cpp - [Executing] - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
(global)
Project Classes Debug PRETEST.cpp
main() : int
44 }
45 }
46 }
47 cout<<"\nData setelah digabungkan : "<<endl<< "[";
48 for(int i=0; i<18; i++){
49     cout<<c[i]<<",";
50 }
51 cout<<"]"<<endl;
52
53 i=0;
54 while (1){
55     if (i>7) break;
56     j=0;
57     while ((j<18)){
58         if (c[j]>c[j+1]){
59             temp=c[j];
60             c[j]=c[j+1];
61             c[j+1]=temp;
62         }
63         j=j+1;
64     }
65     i=i+1;
66 }
67
68 cout<<"\nData setelah diurutkan : "<<endl;
69 cout<< "[";
70 for(int i=0; i<18; i++){
71     cout<<c[i]<<",";
72 }
73 cout<<"]"<<endl;
74
75 return 0;
76 }

Compiler Resources Compile Log Debug Find Results
Line: 21 Col: 26 Sek: 0 Lines: 76 Length: 1590 Insert Done parsing in 0.234 seconds
24°C Light rain 7:29 AM 6/7/2022
```

```
C:\Users\ASUS TUF\OneDrive\Desktop\PRETEST.exe
Masukan data array ke[0][0] : 12
Masukan data array ke[0][1] : 30
Masukan data array ke[0][2] : 35
Masukan data array ke[1][0] : 10
Masukan data array ke[1][1] : 5
Masukan data array ke[1][2] : 17
Masukan data array ke[2][0] : 20
Masukan data array ke[2][1] : 25
Masukan data array ke[2][2] : 40
Data Array 1 yang dimasukan :
12 30 35
10 5 17
20 25 40

Masukan data array ke[0][0] : 9
Masukan data array ke[0][1] : 7
Masukan data array ke[0][2] : 6
Masukan data array ke[1][0] : 4
Masukan data array ke[1][1] : 3
Masukan data array ke[1][2] : 1
Masukan data array ke[2][0] : 8
Masukan data array ke[2][1] : 5
Masukan data array ke[2][2] : 2
Data Array 2 yang dimasukan :
9 7 6
4 3 1
8 5 2

Data setelah digabungkan :
[12,30,35,10,5,17,20,25,40,9,7,6,4,3,1,8,5,2,]

Data setelah diurutkan :
[1,2,3,4,5,5,6,7,8,9,10,12,17,20,25,30,35,40,]

-----
Process exited after 67.14 seconds with return value 0
Press any key to continue . . .
```

Source Code

```
#include<iostream>
using namespace std;

int main(){
    int k=0,b=9,temp, i,j;
    int c[50], data[50][50];
    for(int i=0;i<3;i++){
        for(int j=0;j<3;j++){
            cout<<"Masukan data array ke["<<i<<"]["<<j<<"] : ";
            cin>>data[i][j];
        }
        cout<<"Data Array 1 yang dimasukan : "<<endl;
    }
    for(int i=0;i<3;i++){
        for(int j=0;j<3;j++){
            cout<<data[i][j]<<" ";
        }
        cout<<endl;
    }
    cout<<endl;
    for(int i=3;i<6;i++){
        for(int j=3;j<6;j++){
            cout<<"Masukan data array ke["<<i-3<<"]["<<j-3<<"] : ";
            cin>>data[i][j];
        }
        cout<<"Data Array 2 yang dimasukan : "<<endl;
    }
    for(int i=3;i<6;i++){
        for(int j=3;j<6;j++){
            cout<<data[i][j]<<" ";
        }
        cout<<endl;
    }
    for(int i=0;i<3;i++){
        for(int j=0;j<3;j++){
            c[k]=data[i][j];
            k=k+1;
        }
    }
    for(int i=3;i<6;i++){
        for(int j=3;j<6;j++){
            c[b]=data[i][j];
            b=b+1;
        }
    }

    cout<<"\nData setelah digabungkan : "<<endl<<["";
    for(int i=0;i<18;i++){
        cout<<c[i]<<",";
    }
}
```

```

    }
    cout<<"]"<<endl;

    i =0;
    while (1){
        if (i>17) break;

        j =0;
        while (!(j>16)){
            if (c[j]>c[j+1]){
                temp =c[j];
                c[j] = c[j+1];
                c[j+1] = temp;
            }
            else { }

            j =j+1;
        }
        i =i+1;
    }
    cout << "\nData setelah diurutkan : " << endl;
    cout<<"[";
    for(int i=0;i<18;i++){
        cout<<c[i]<<",";
    }
    cout<<"]"<<endl;

    return 0;
}

```