LAPORAN

ALGORITMA PEMORGRAMAN

DISUSUN OLEH

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SLOT SELASA 13.30 – KELAS G

PROGRAM STUDI INFORMATIKA FAKULTAS TEKNOLOGI INDUSTRI

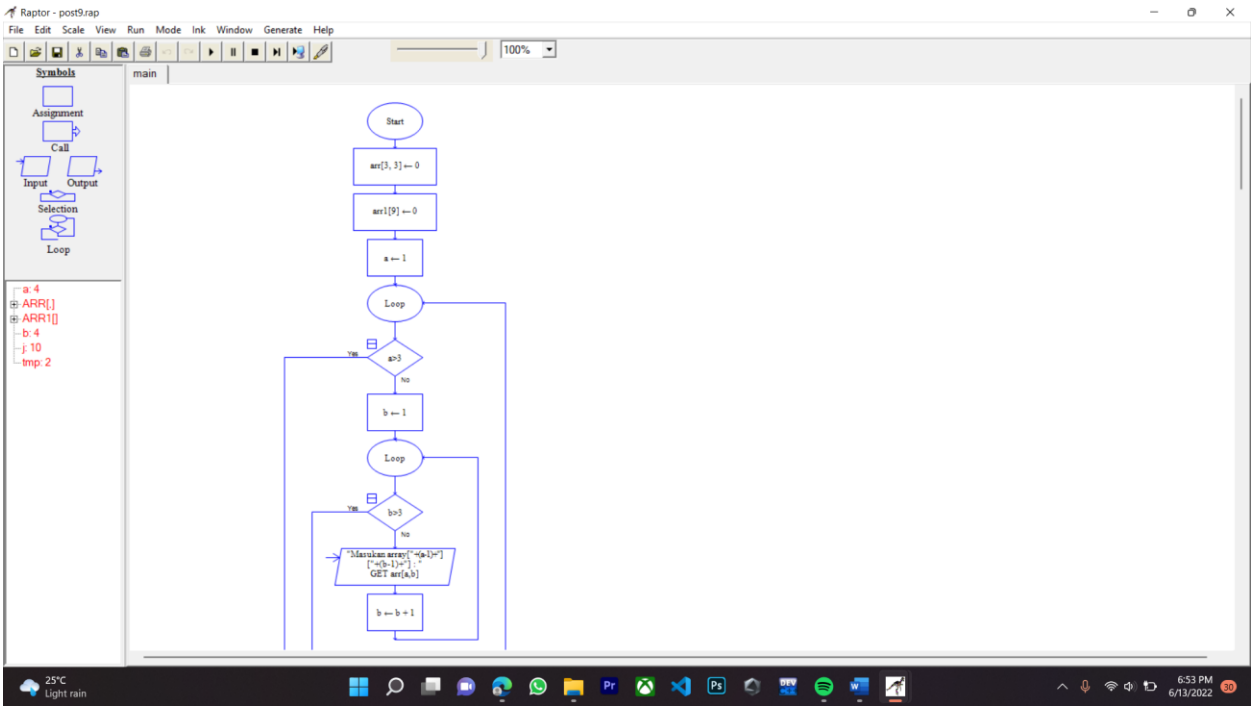
UNIVERSITAS AHMAD DAHLAN

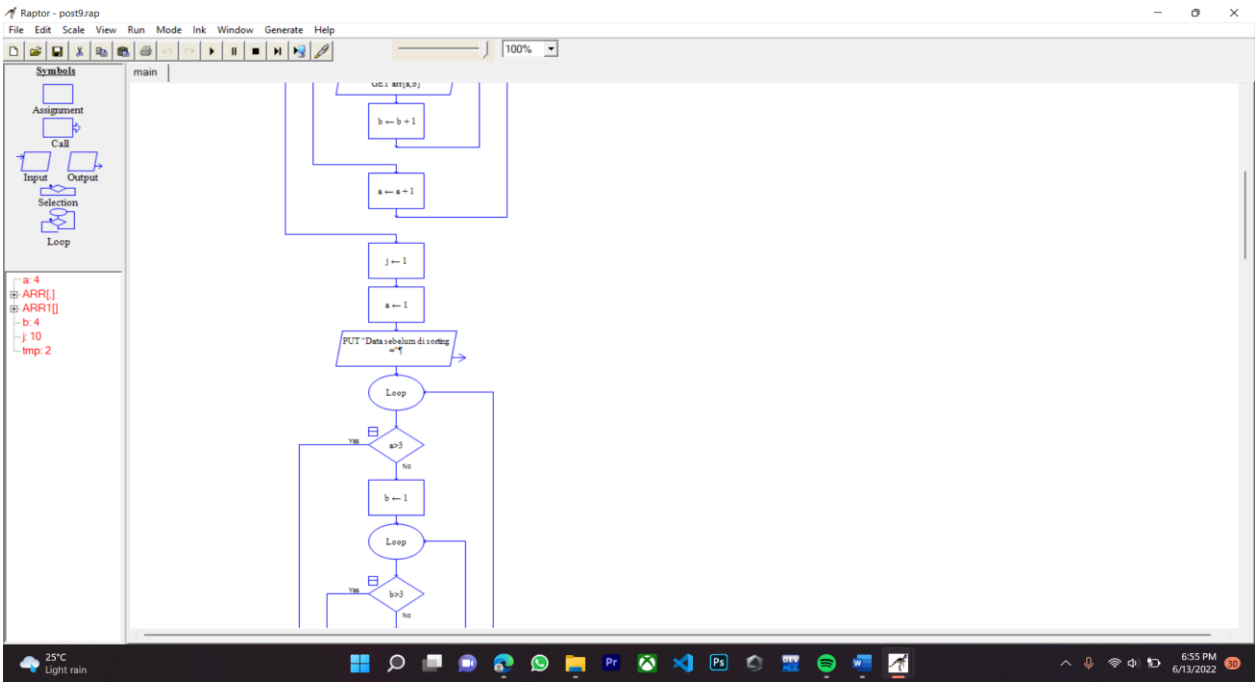
TAHUN AJARAN 2021/2022

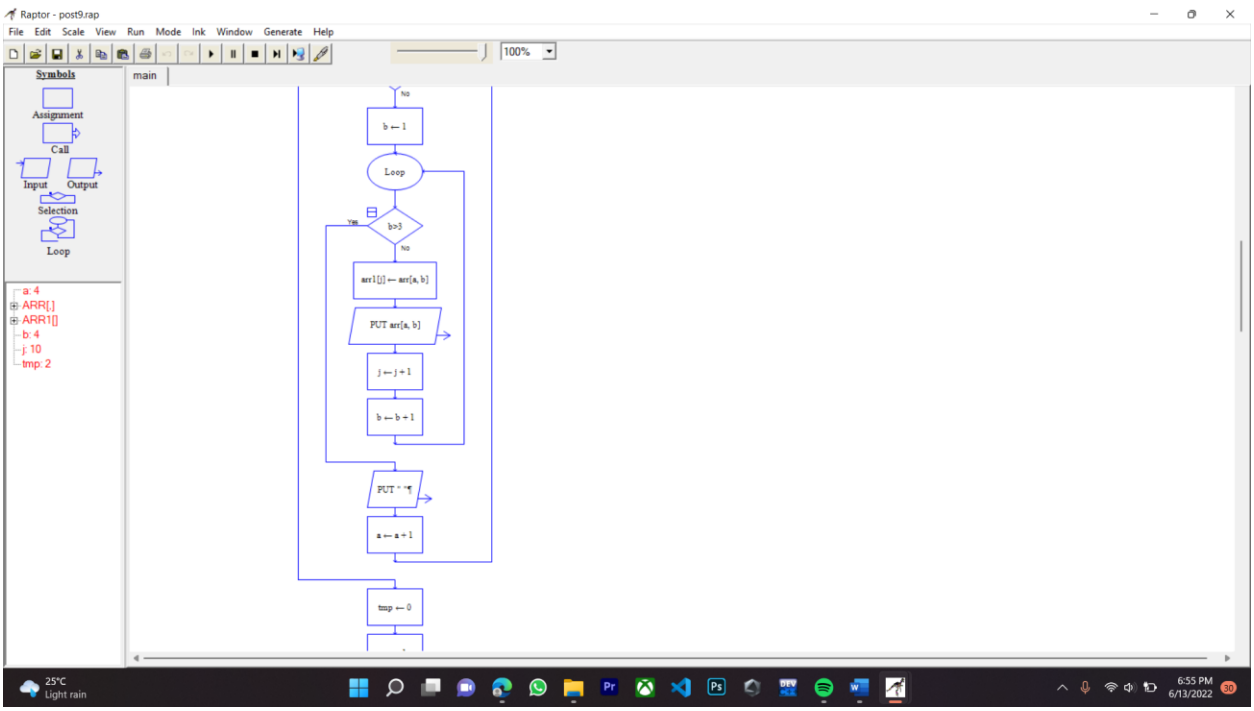
POSTEST PRAKTIKUM 9 : ARRAY 1-2 DIMENSI

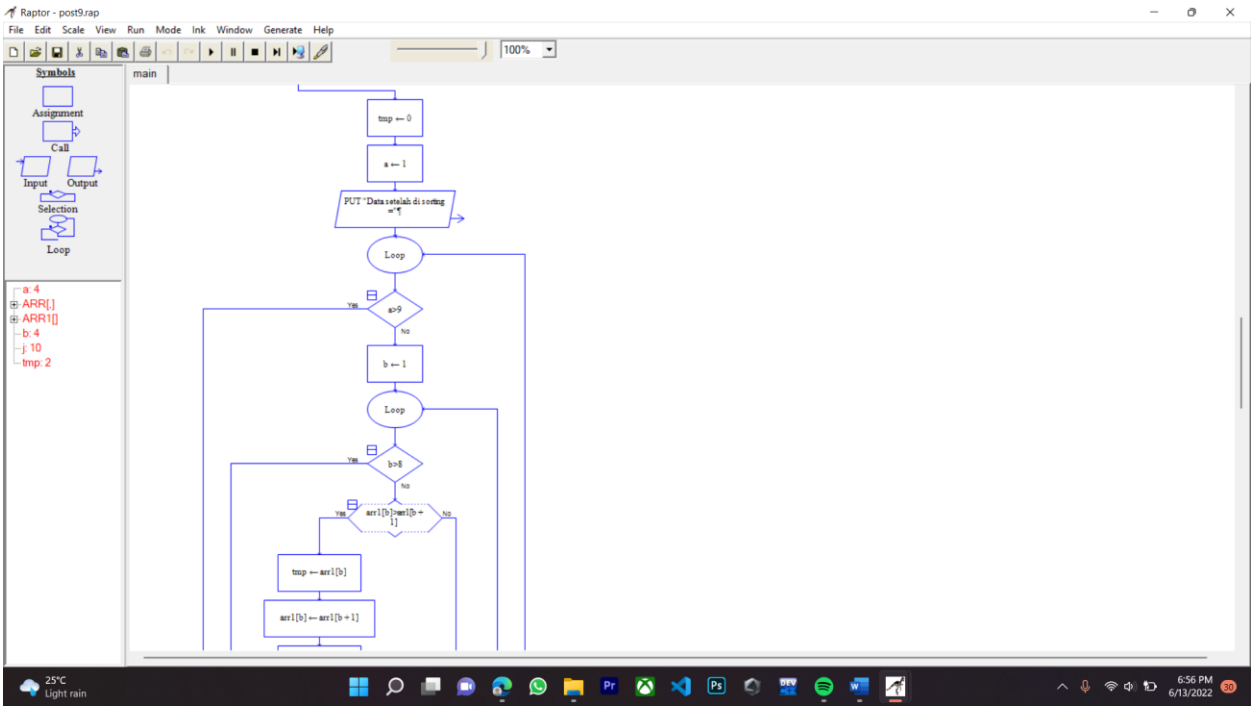
1. Buat lah flowchart untuk mengurutkan data array 2 dimensi berukuran 3x3 dengan menggunakan algoritma bubble sort.

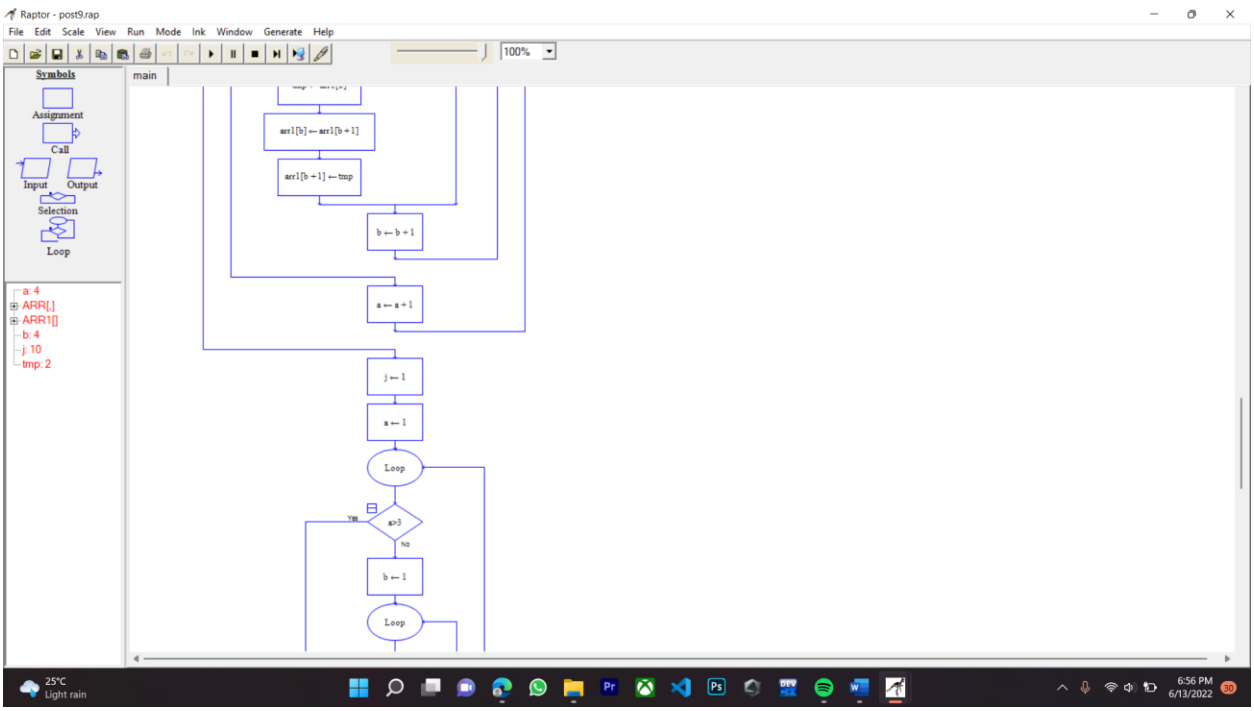
➔ Flowchart

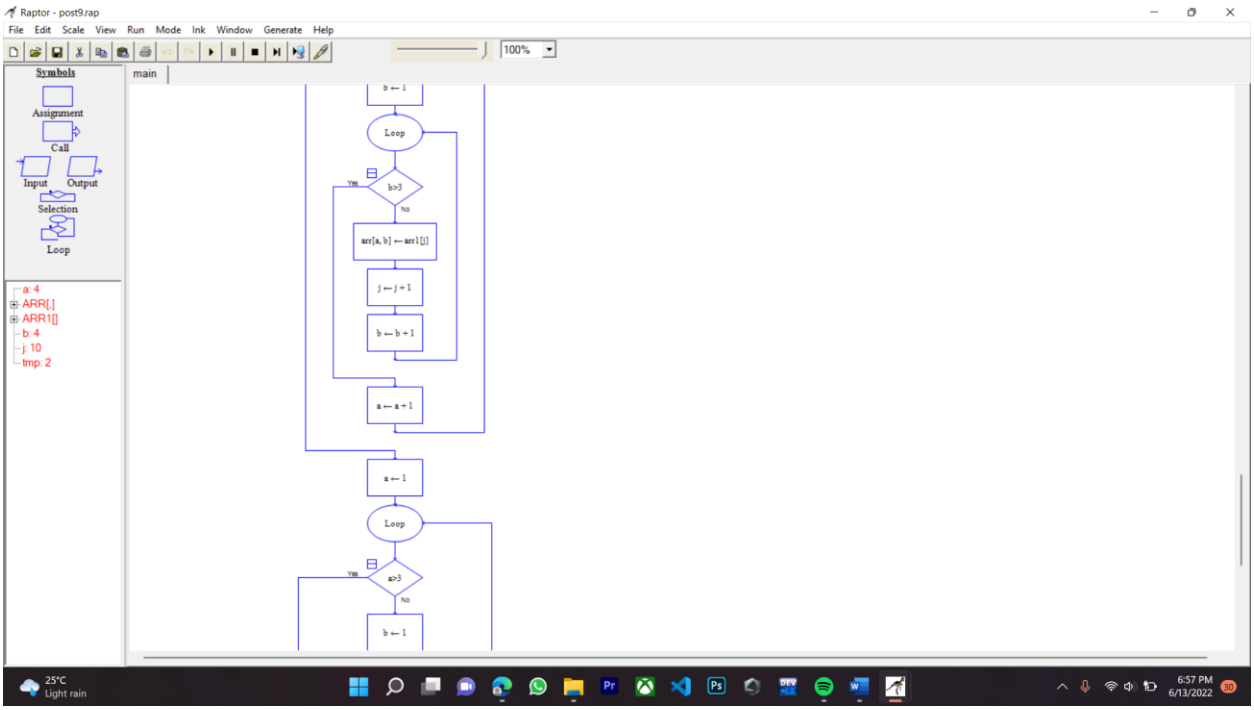


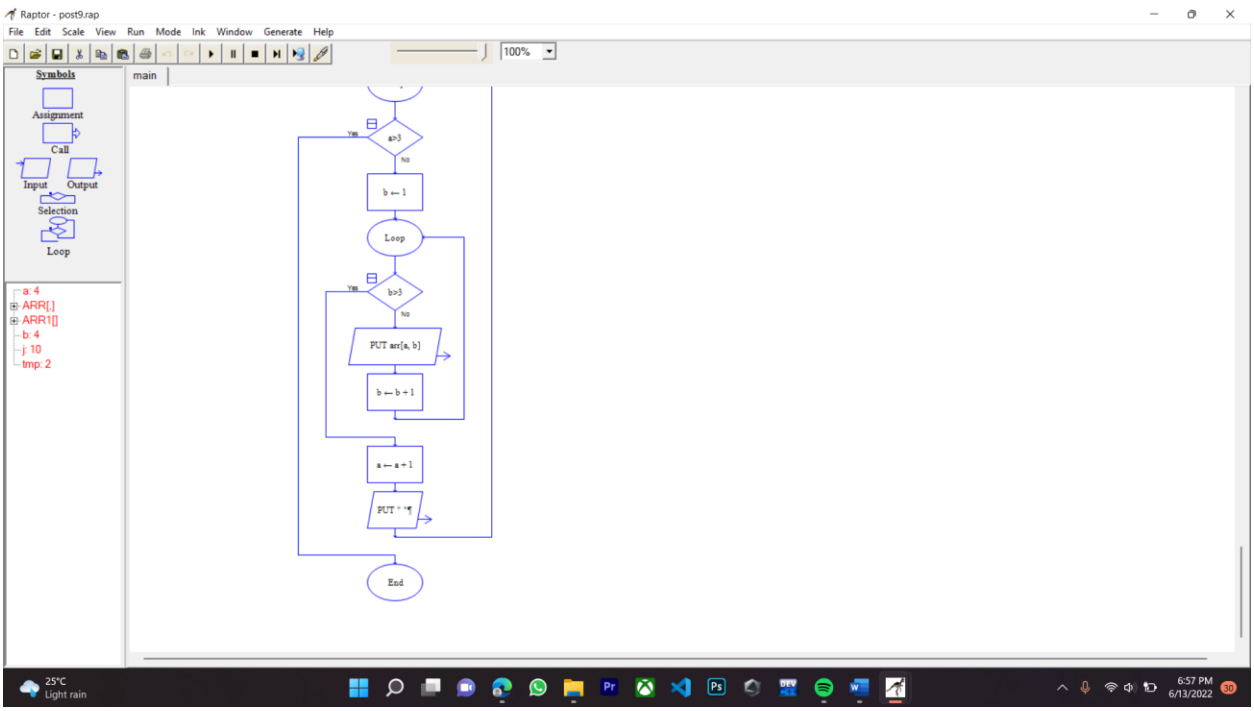



Raptor - post9.rap
File Edit Scale View Run Mode Ink Window Generate Help
100%
Symbols
Assignment
Call
Input
Output
Selection
Loop
main
a: 4
ARR[,]
ARR1[]
b: 4
j: 10
tmp: 2
b ← 1
Loop
b>3
arr1[j] ← arr[a, b]
PUT arr[a, b]
j ← j + 1
b ← b + 1
PUT " "¶
a ← a + 1
tmp ← 0
25°C
Light rain
6:55 PM
6/13/2022


Raptor - post9.rap
File Edit Scale View Run Mode Ink Window Generate Help
100%
Symbols
Assignment
Call
Input
Output
Selection
Loop
main
a: 4
ARR[,]
ARR1[]
b: 4
j: 10
tmp: 2
tmp ← 0
a ← 1
PUT "Data setelah di sorting =¶
Loop
a>9
b ← 1
Loop
b>8
arr1[b]>arr1[b + 1]
tmp ← arr1[b]
arr1[b] ← arr1[b + 1]
25°C
Light rain
6:56 PM
6/13/2022

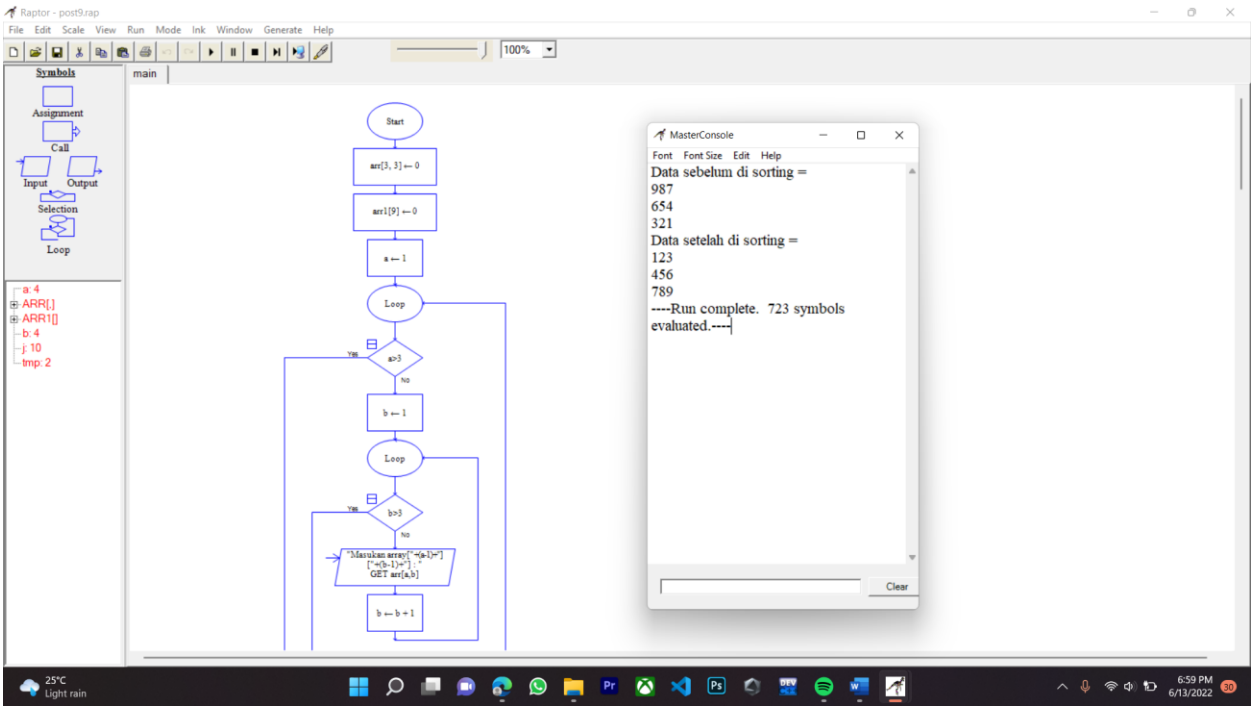

Raptor - post9.rap
File Edit Scale View Run Mode Ink Window Generate Help
100%
Symbols
Assignment
Call
Input Output
Selection
Loop
main
arr1[b] ← arr1[b + 1]
arr1[b + 1] ← tmp
b ← b + 1
a ← a + 1
j ← 1
a ← 1
Loop
a>3
Yes
No
b ← 1
Loop
a: 4
ARR[,]
ARR1[]
b: 4
j: 10
tmp: 2
25°C
Light rain
6:56 PM
6/13/2022


Raptor - post9.rap
File Edit Scale View Run Mode Ink Window Generate Help
100%
Symbols
Assignment
Call
Input Output
Selection
Loop
main
b ← 1
Loop
b>3
Yes
No
arr[a, b] ← arr1[j]
j ← j + 1
b ← b + 1
a ← a + 1
a ← 1
Loop
a>3
Yes
No
b ← 1
a: 4
ARR[,]
ARR1[]
b: 4
j: 10
tmp: 2
25°C
Light rain
6:57 PM
6/13/2022

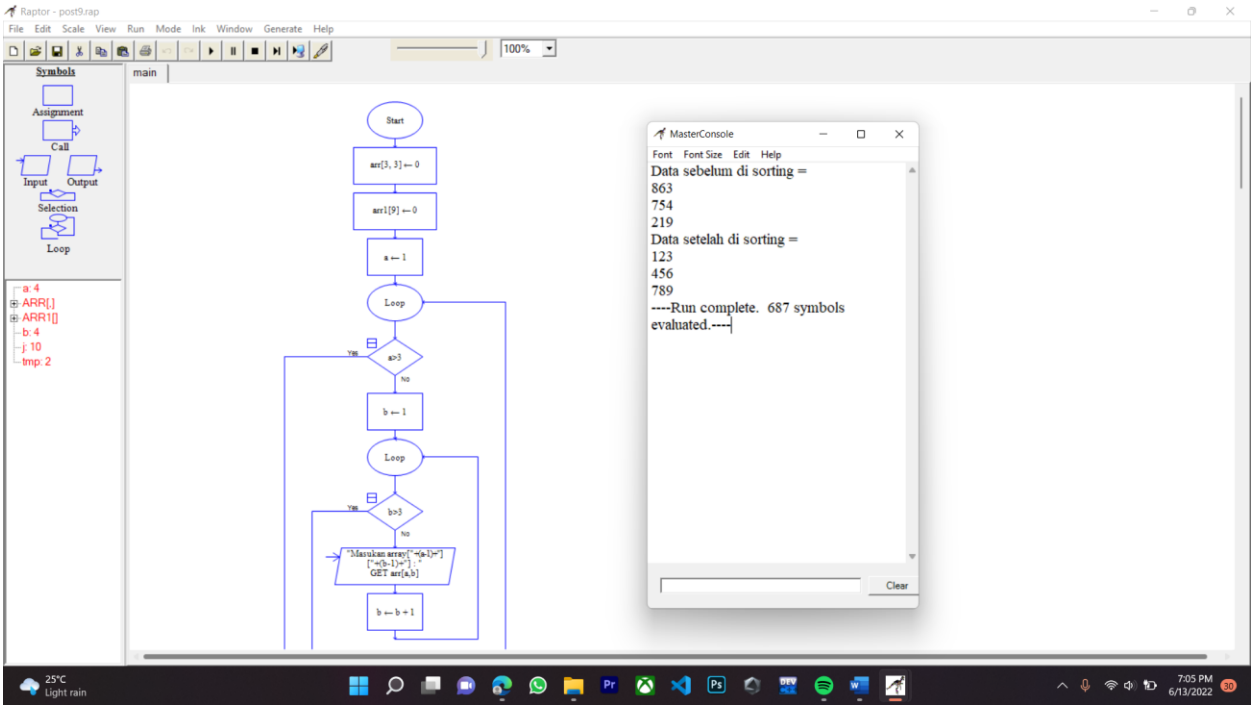


➔ Ketika flowchart pada raptor dijalankan

⇨ Percobaan 1



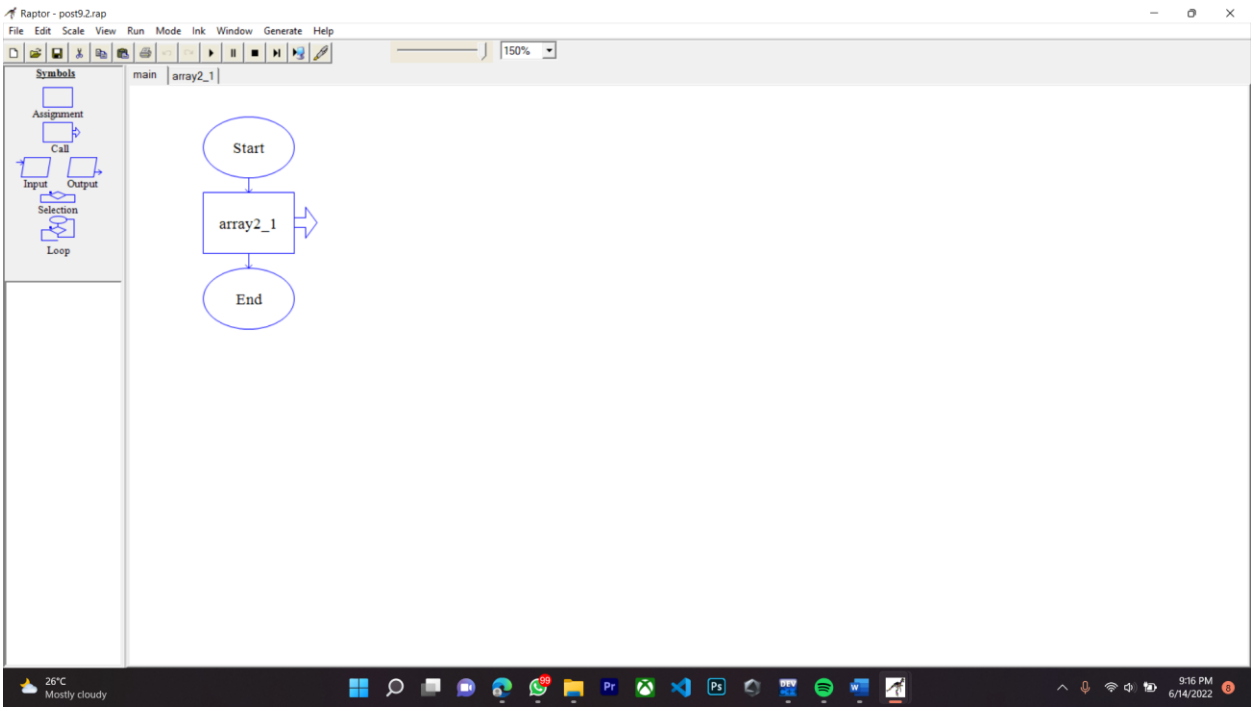
⇨ Percobaan 2



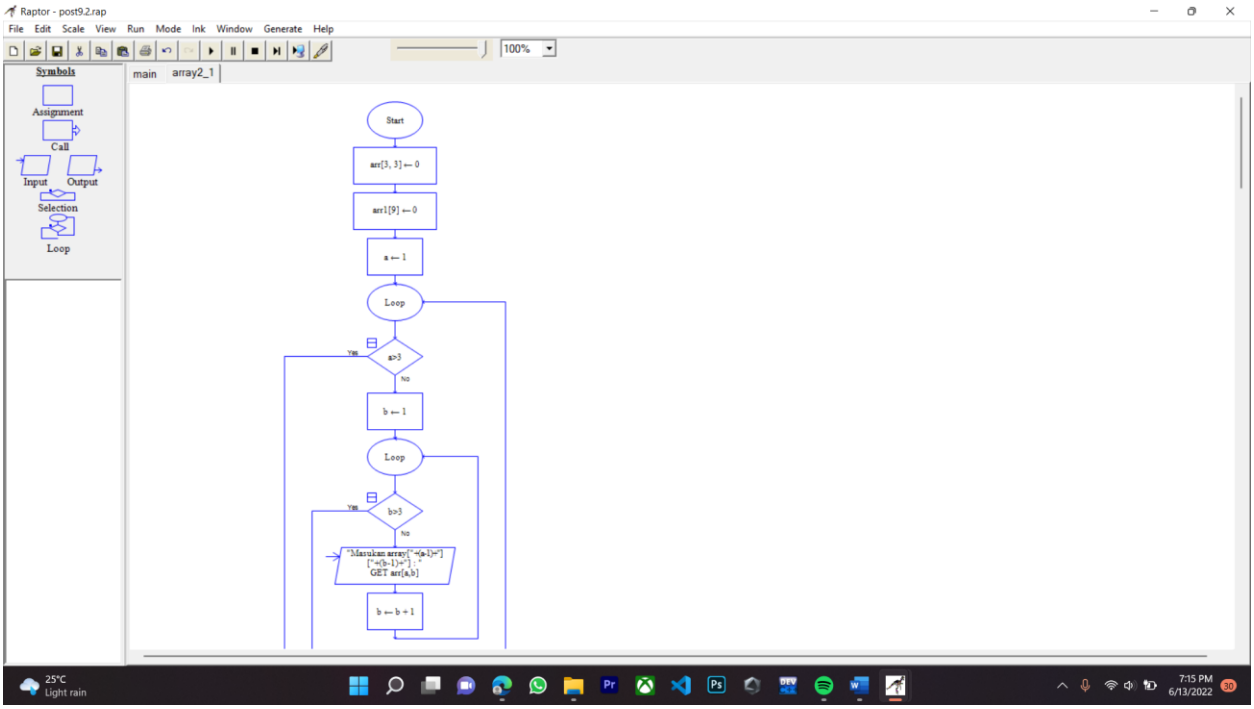
2. Seperti nomor 1, gunakan subprogam dalam flowchart untuk mengurutkan data array 2 dimensi berukuran 3x3 dengan menggunakan algoritma bubble sort.

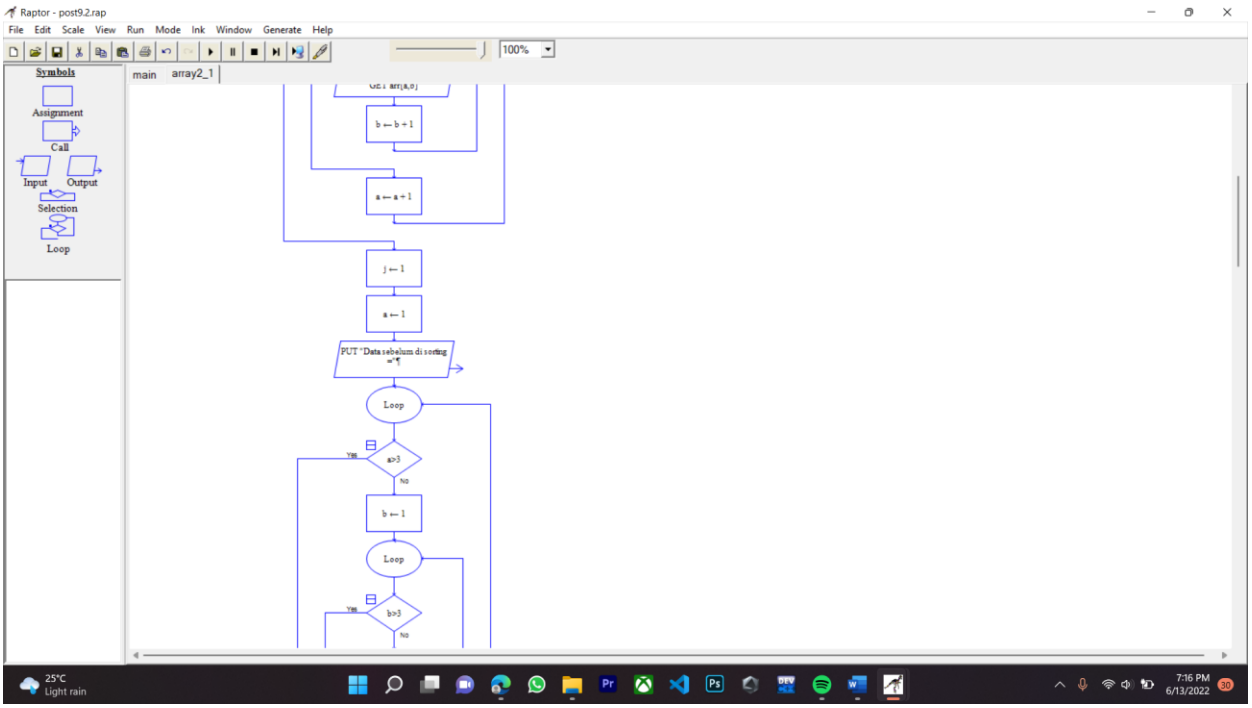
➔ Flowchart

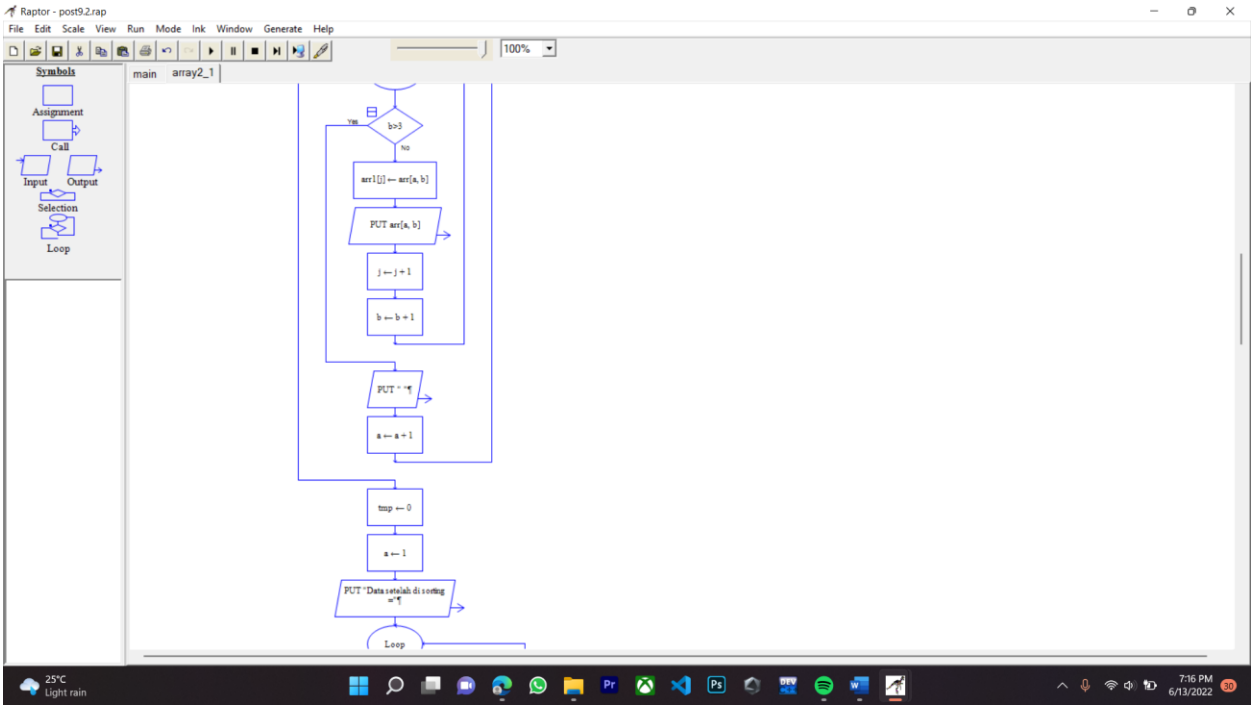
⇨ Main

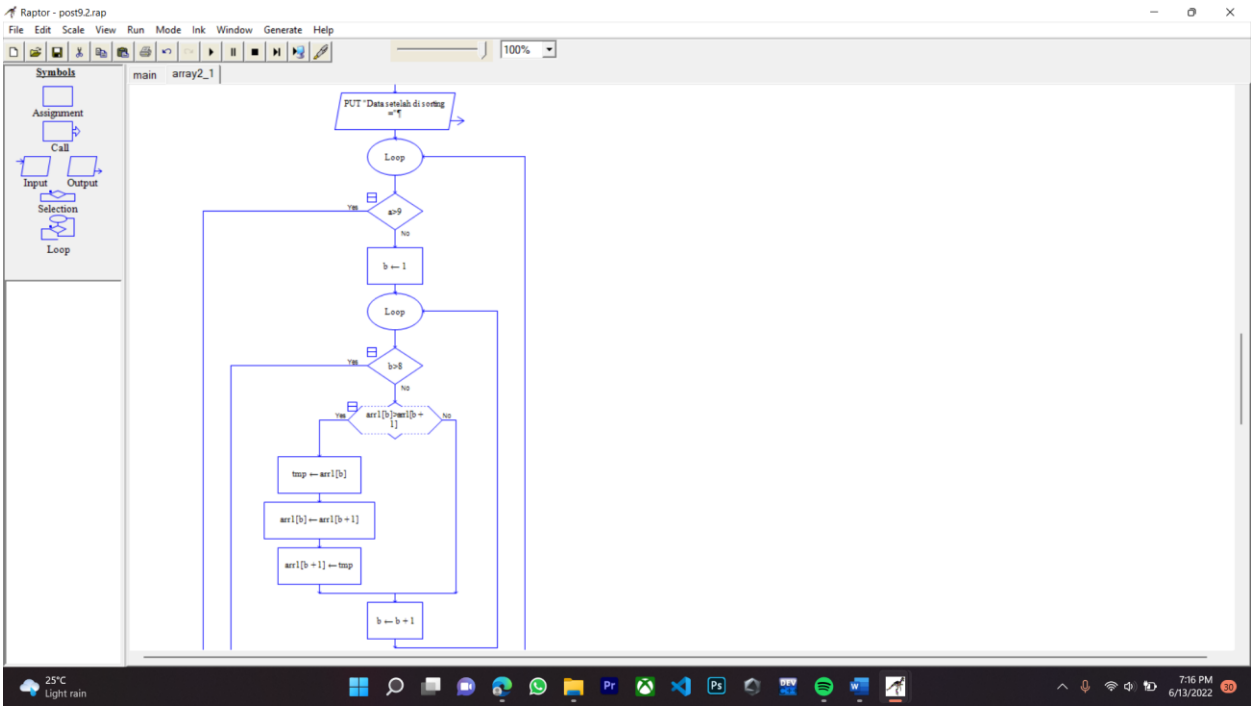


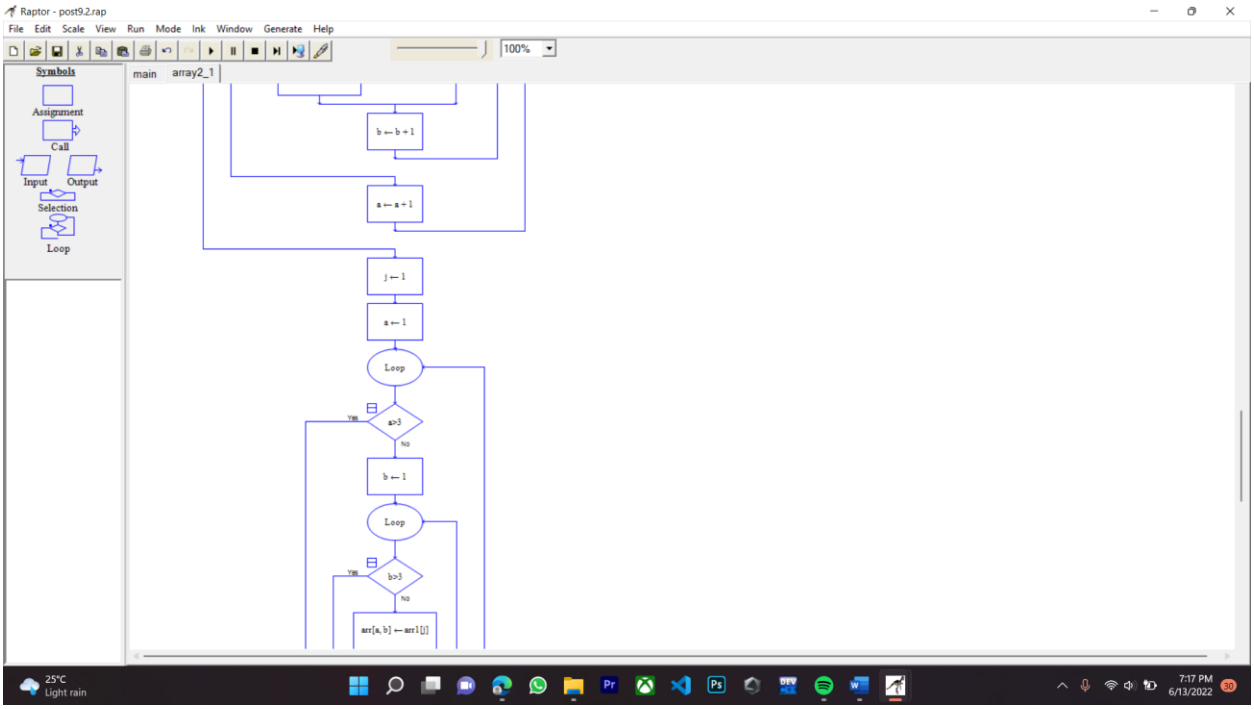
⇨ Subprogram

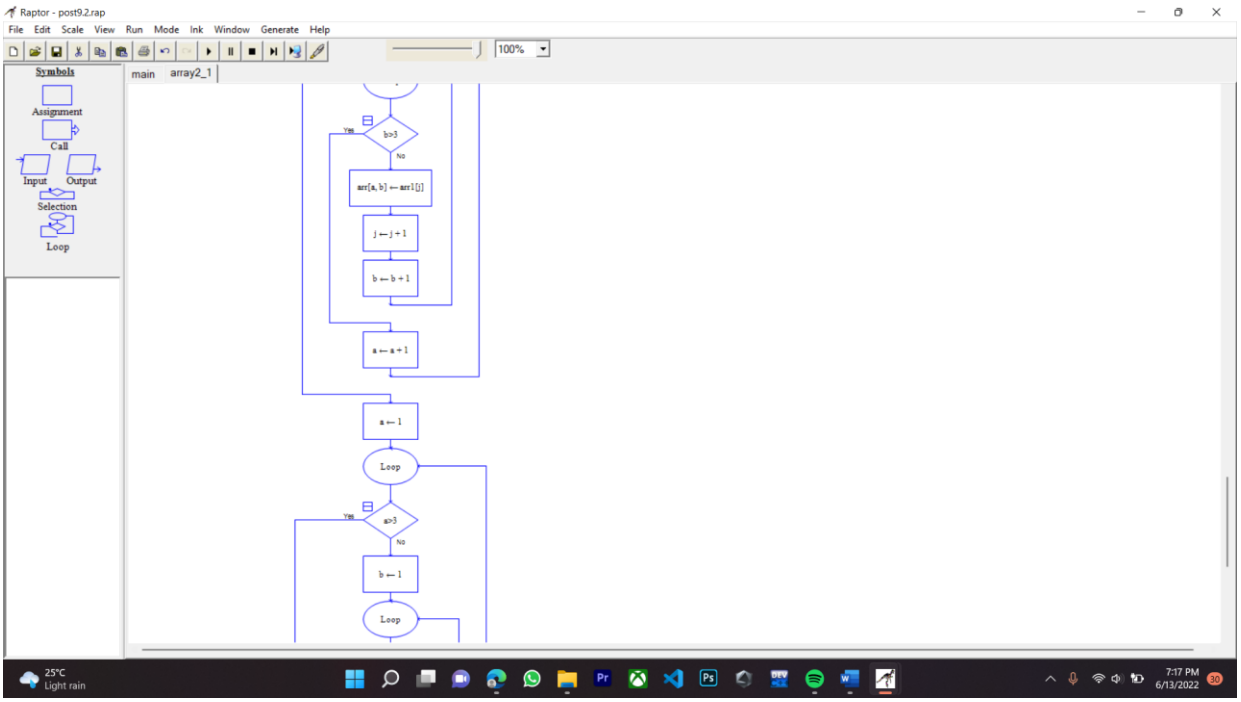

Raptor - post9.2.rap
File Edit Scale View Run Mode Ink Window Generate Help
Symbols
Assignment
Call
Input
Output
Selection
Loop
main
array2_1
Start
arr[3, 3] ← 0
arr1[9] ← 0
a ← 1
Loop
a>3
Yes
No
b ← 1
Loop
b>3
"Masukan array["+(a-1)+"]["+(b-1)+"] : "
GET arr[a,b]
b ← b + 1

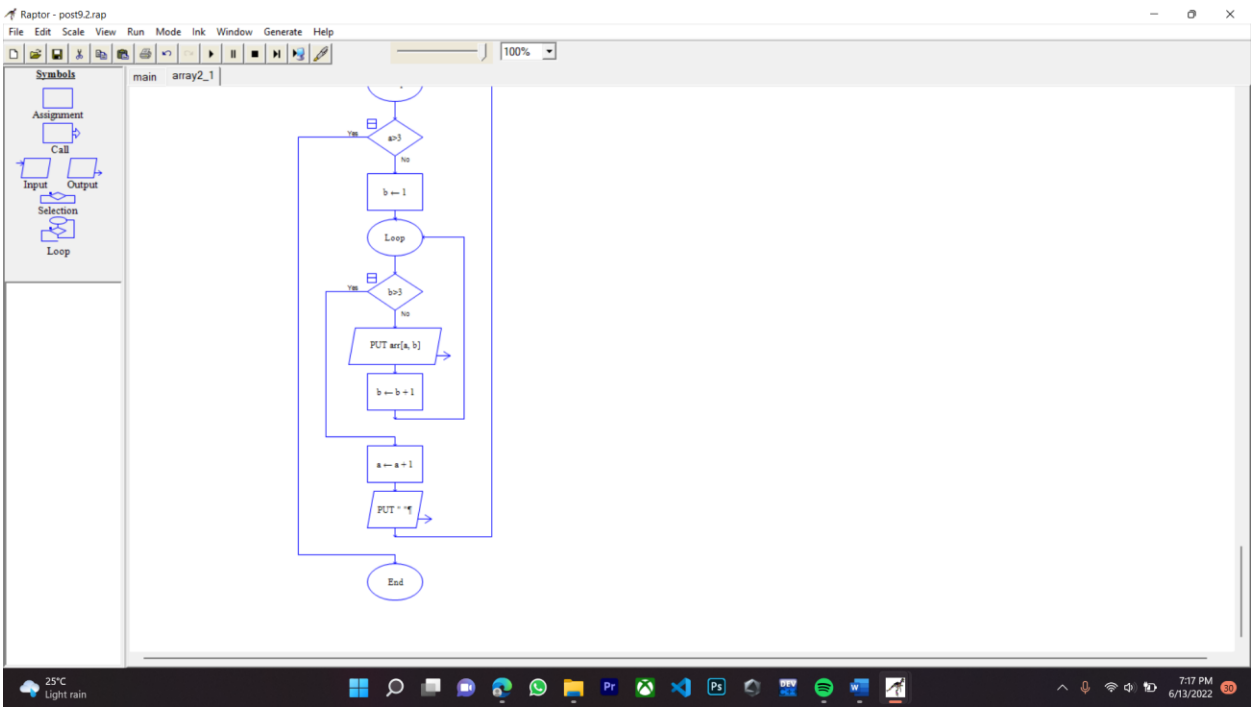

Raptor - post9.2.rap
File Edit Scale View Run Mode Ink Window Generate Help
Symbols
Assignment
Call
Input
Output
Selection
Loop
main
array2_1
b ← b + 1
a ← a + 1
j ← 1
a ← 1
PUT "Data sebelum di sorting
Loop
a>3
b ← 1
Loop
b>3


Raptor - post9.2.rap
File Edit Scale View Run Mode Ink Window Generate Help
100%
Symbols
Assignment
Call
Input
Output
Selection
Loop
main
array2_1
b>3
Yes
No
arr1[j] ← arr[a, b]
PUT arr[a, b]
j ← j + 1
b ← b + 1
PUT " "¶
a ← a + 1
tmp ← 0
a ← 1
PUT "Data setelah di sorting ="¶
Loop
25°C
Light rain
7:16 PM
6/13/2022

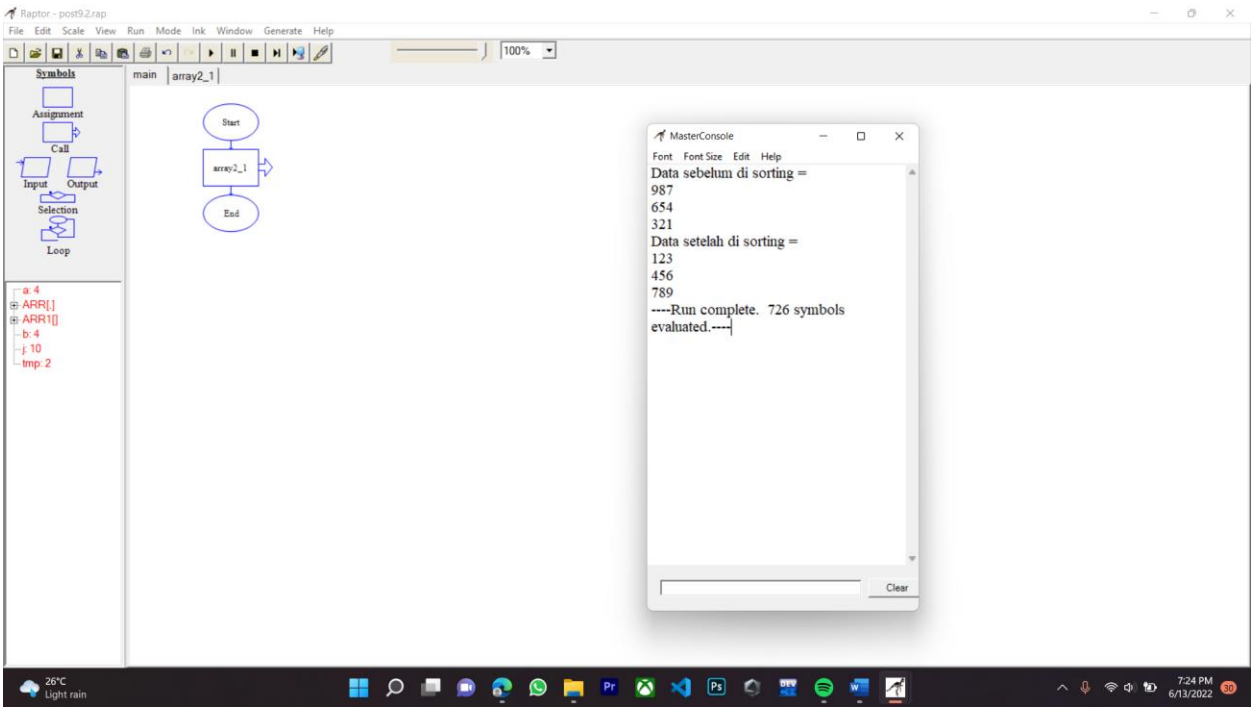

Raptor - post9.2.rap
File Edit Scale View Run Mode Ink Window Generate Help
100%
Symbols
Assignment
Call
Input
Output
Selection
Loop
main
array2_1
PUT "Data setelah di sorting ="¶
Loop
a>9
Yes
No
b ← 1
Loop
b>8
arr1[b]>arr1[b + 1]
tmp ← arr1[b]
arr1[b] ← arr1[b + 1]
arr1[b + 1] ← tmp
b ← b + 1
25°C
Light rain
7:16 PM
6/13/2022


Raptor - post9.2.rap
File Edit Scale View Run Mode Ink Window Generate Help
100%
Symbols
Assignment
Call
Input
Output
Selection
Loop
main
array2_1
b ← b + 1
a ← a + 1
j ← 1
a ← 1
Loop
a>3
Yes
No
b ← 1
Loop
b>3
Yes
No
arr[a, b] ← arr1[j]
25°C
Light rain
7:17 PM
6/13/2022


Raptor - post9.2.rap
File Edit Scale View Run Mode Ink Window Generate Help
100%
Symbols
Assignment
Call
Input
Output
Selection
Loop
main
array2_1
b>3
Yes
No
arr[a, b] ← arr1[j]
j ← j + 1
b ← b + 1
a ← a + 1
a ← 1
Loop
a>3
Yes
No
b ← 1
Loop
25°C
Light rain
7:17 PM
6/13/2022



⇨ Ketika flowchart pada raptor dijalankan



3. Konversikan hasil dari flowchart nomor 1 dan 2 menjadi progam C++.

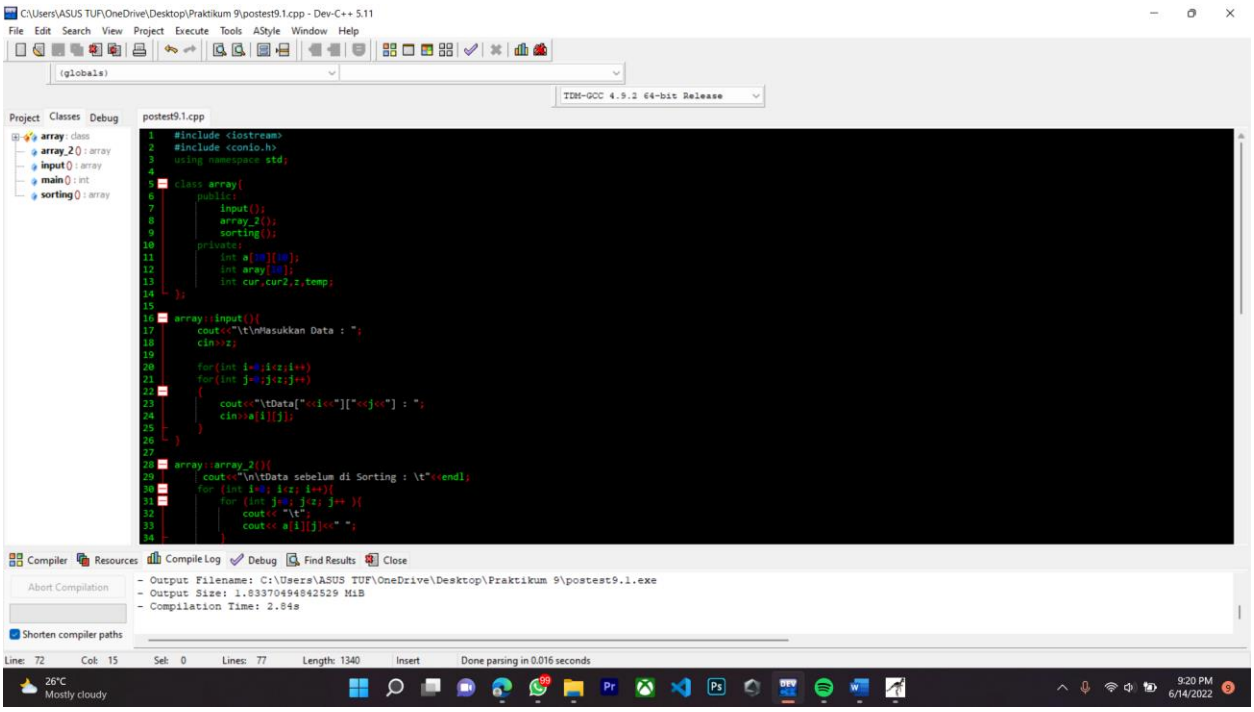
➔ Nomor 1

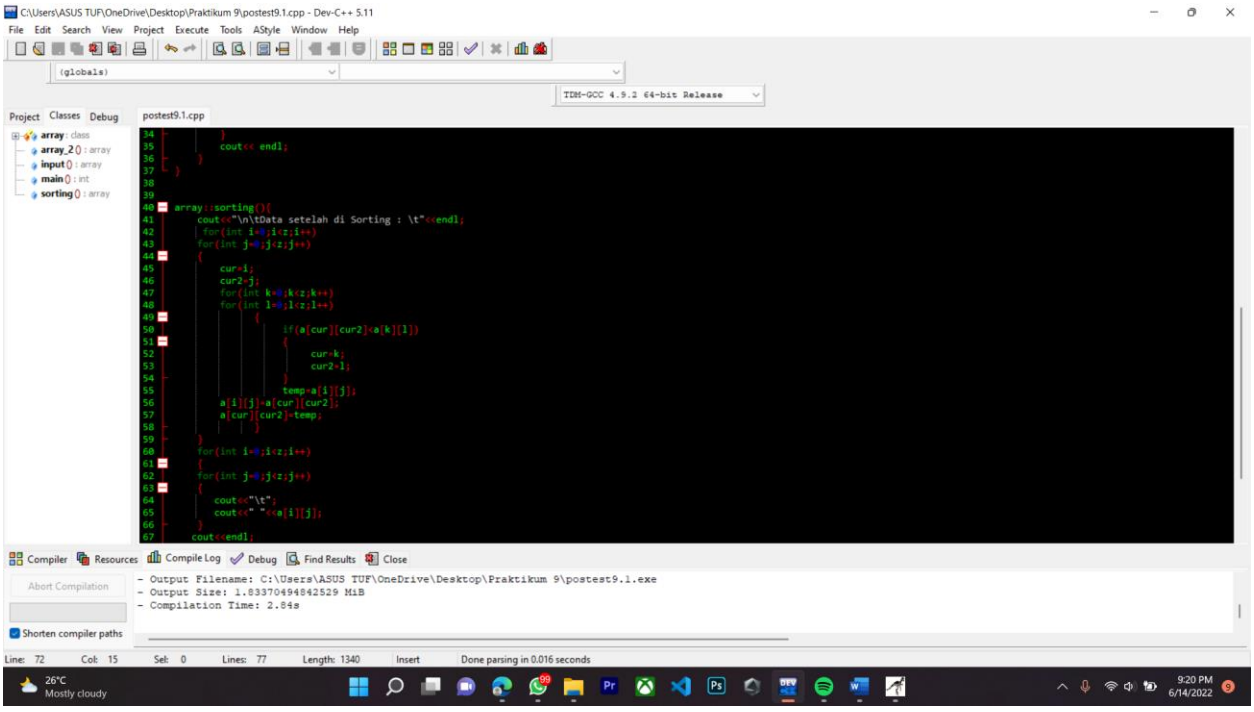
⇨ Source Code:

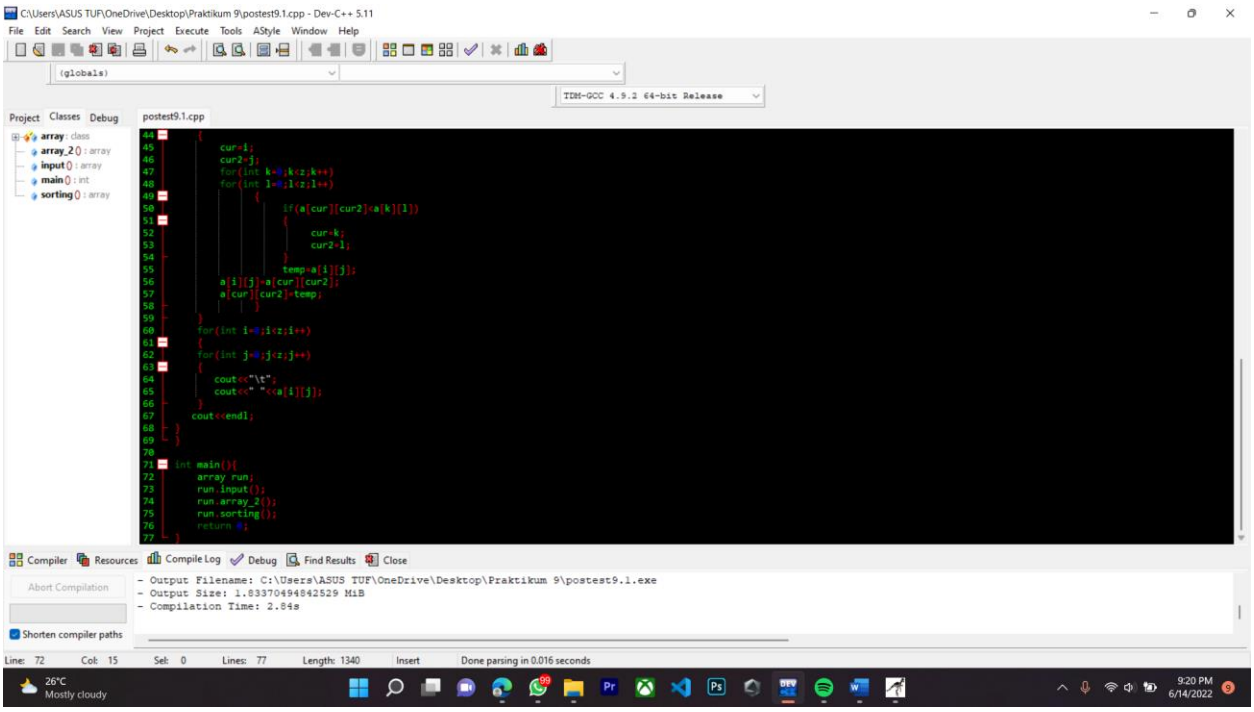
```
#include <iostream>
#include <conio.h>
using namespace std;

class array{
	public:
		input();
		array_2();
		sorting();
	private:
		int a[10][10];
		int aray[10];
		int cur,cur2,z,temp;
};

array::input(){
	cout<<"\t\nMasukkan Data : ";
	cin>>z;

	for(int i=0;i<z;i++)
	for(int j=0;j<z;j++)
	{
		cout<<"\tData["<<i<<"]["<<j<<"] : ";
		cin>>a[i][j];
	}
}

array::array_2(){
	 cout<<"\n\tData sebelum di Sorting : \t"<<endl;
	for (int i=0; i<z; i++){
		for (int j=0; j<z; j++ ){
			cout<< "\t";
			cout<< a[i][j]<<" ";
		}
		cout<< endl;
	}
}


array::sorting(){
	cout<<"\n\tData setelah di Sorting : \t"<<endl;
```

```
            for(int i=0;i<z;i++)
    for(int j=0;j<z;j++)
    {
        cur=i;
        cur2=j;
        for(int k=0;k<z;k++)
        for(int l=0;l<z;l++)
             {
                 if(a[cur][cur2]<a[k][l])
                 {
                     cur=k;
                     cur2=l;
                 }
                 temp=a[i][j];
        a[i][j]=a[cur][cur2];
        a[cur][cur2]=temp;
             }
    }
    for(int i=0;i<z;i++)
    {
    for(int j=0;j<z;j++)
    {
       cout<<"\t";
       cout<<" "<<a[i][j];
    }
   cout<<endl;
}
}

int main(){
          array run;
          run.input();
          run.array_2();
          run.sorting();
          return 0;
}
```

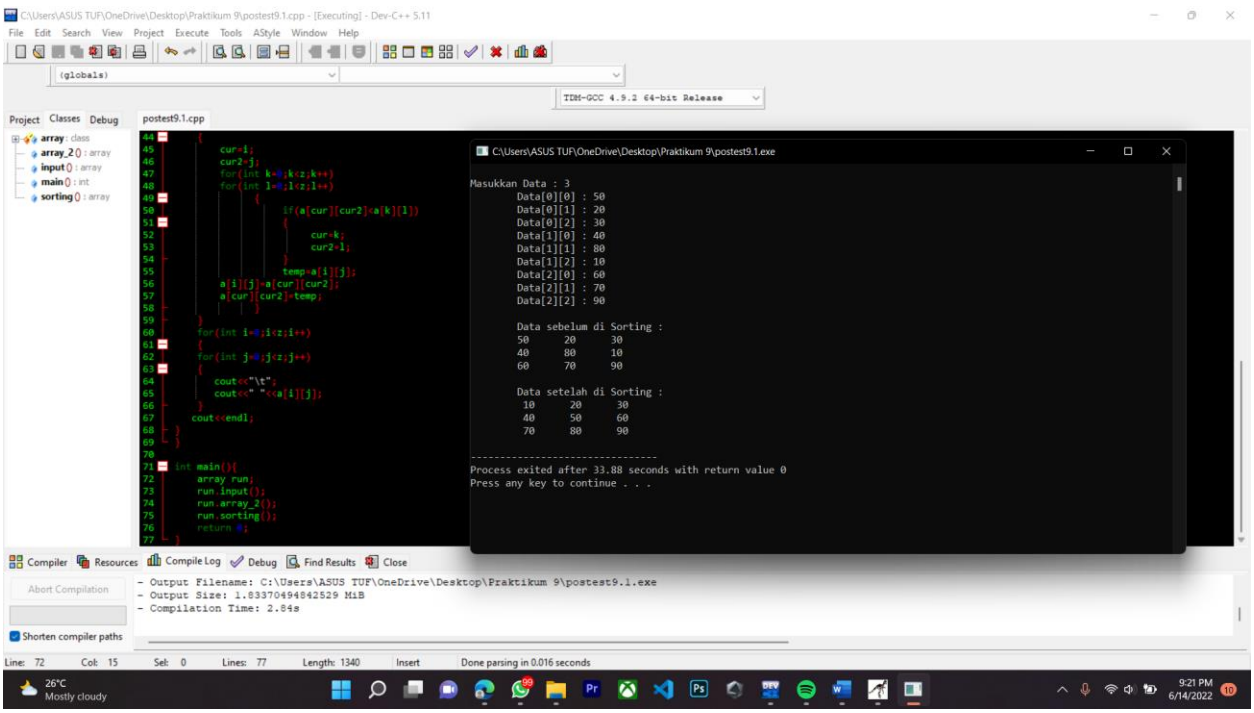
⇨ Tampilan pada Dev C++







⇨ Setelah di running



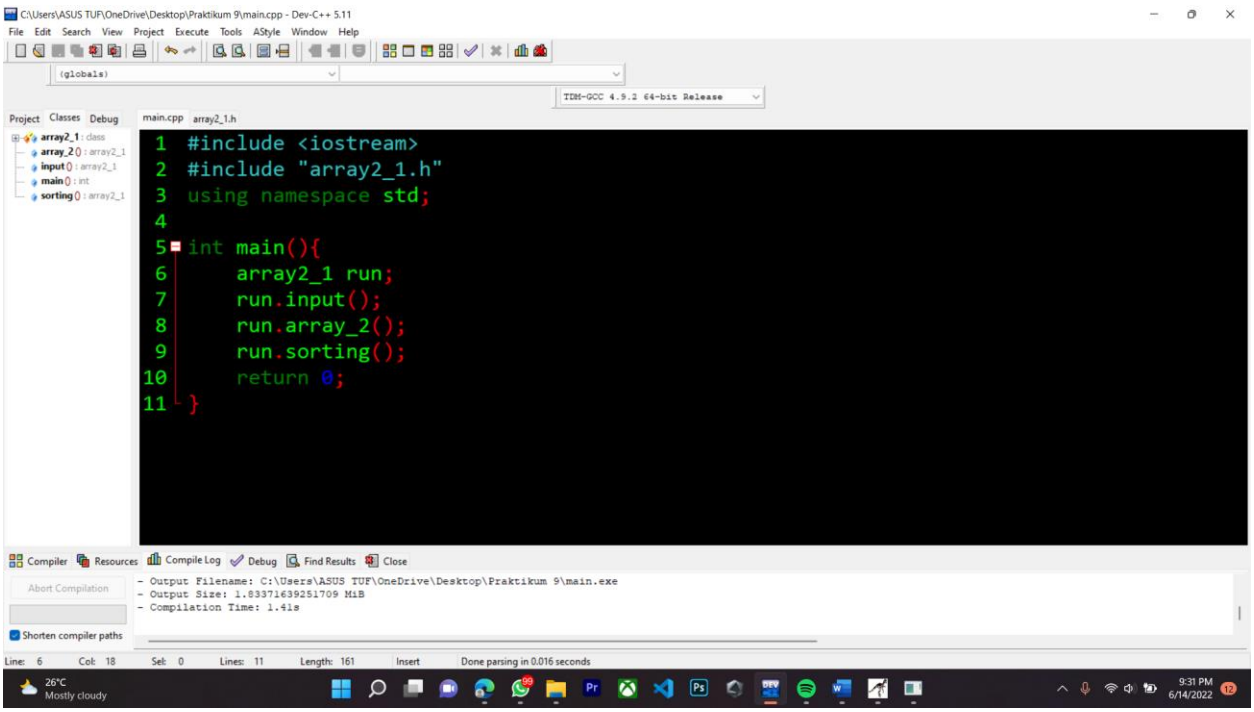
➔ Nomor 2

⇨ Source Code

Main.cpp

```
#include <iostream>
#include "array2_1.h"
using namespace std;

int main(){
	array2_1 run;
	run.input();
	run.array_2();
	run.sorting();
	return 0;
}
```

Tampilan Pada Dev C++



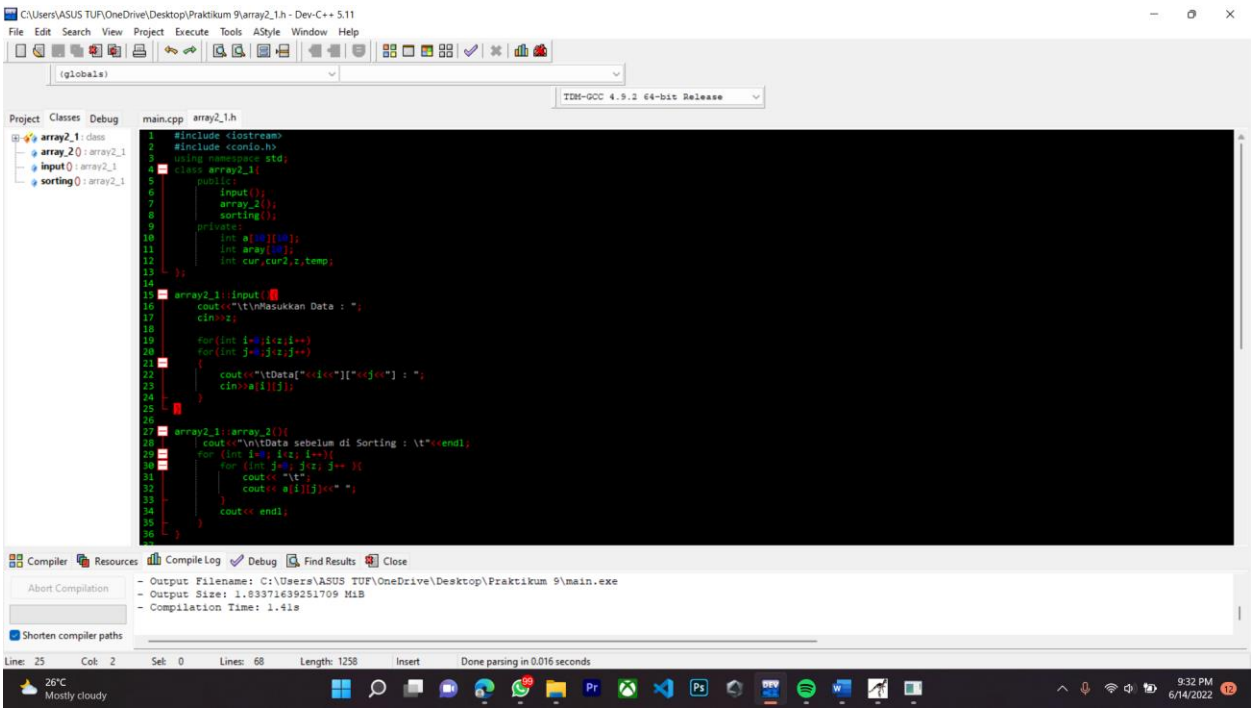
Subprogram array2_1.h

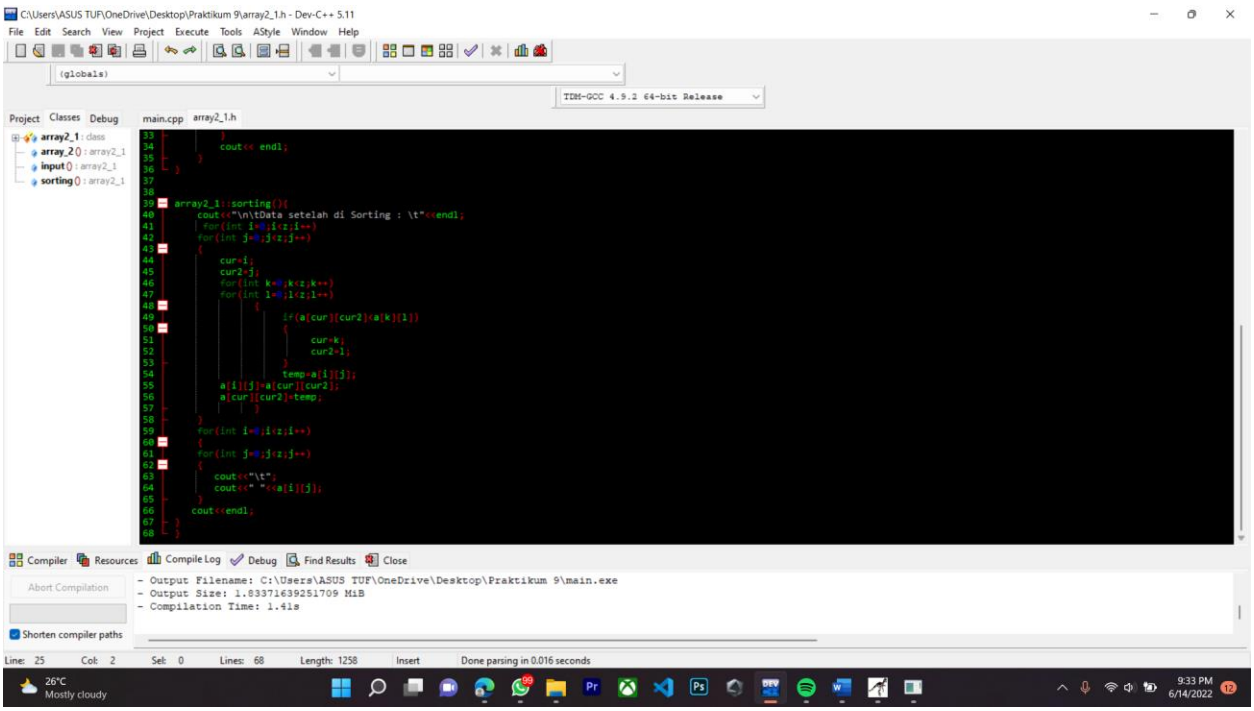
```
#include <iostream>
#include <conio.h>
using namespace std;
class array2_1{
```

```
        public:
                input();
                array_2();
                sorting();
        private:
                int a[10][10];
                int aray[10];
                int cur,cur2,z,temp;
};

array2_1::input(){
        cout<<"\t\nMasukkan Data : ";
        cin>>z;

        for(int i=0;i<z;i++)
        for(int j=0;j<z;j++)
        {
                cout<<"\tData["<<i<<"]["<<j<<"] : ";
                cin>>a[i][j];
        }
}

array2_1::array_2(){
         cout<<"\n\tData sebelum di Sorting : \t"<<endl;
        for (int i=0; i<z; i++){
                for (int j=0; j<z; j++ ){
                        cout<< "\t";
                        cout<< a[i][j]<<" ";
                }
                cout<< endl;
        }
}


array2_1::sorting(){
        cout<<"\n\tData setelah di Sorting : \t"<<endl;
         for(int i=0;i<z;i++)
   for(int j=0;j<z;j++)
   {
      cur=i;
      cur2=j;
      for(int k=0;k<z;k++)
      for(int l=0;l<z;l++)
          {
              if(a[cur][cur2]<a[k][l])
              {
```

```
                    cur=k;
                    cur2=l;
                }
                temp=a[i][j];
        a[i][j]=a[cur][cur2];
        a[cur][cur2]=temp;
            }
    }
    for(int i=0;i<z;i++)
    {
    for(int j=0;j<z;j++)
    {
      cout<<"\t";
      cout<<" "<<a[i][j];
    }
   cout<<endl;
 }
```

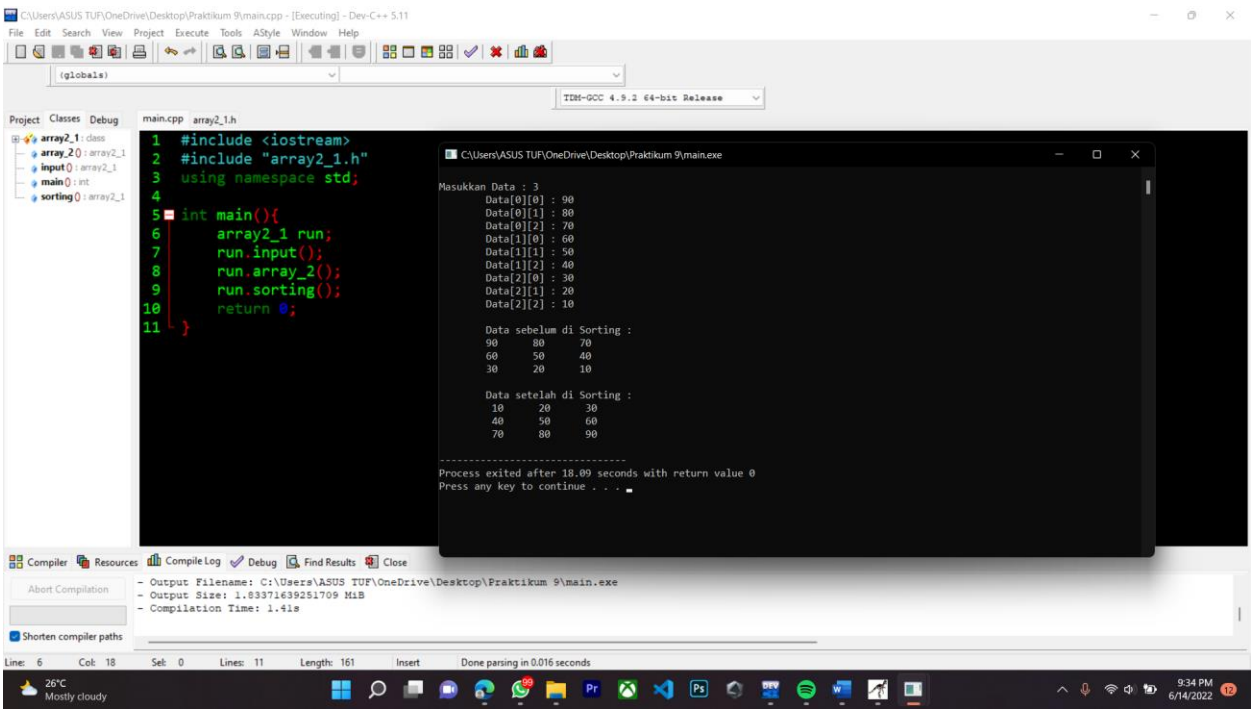
Tampilan pada Dev C++



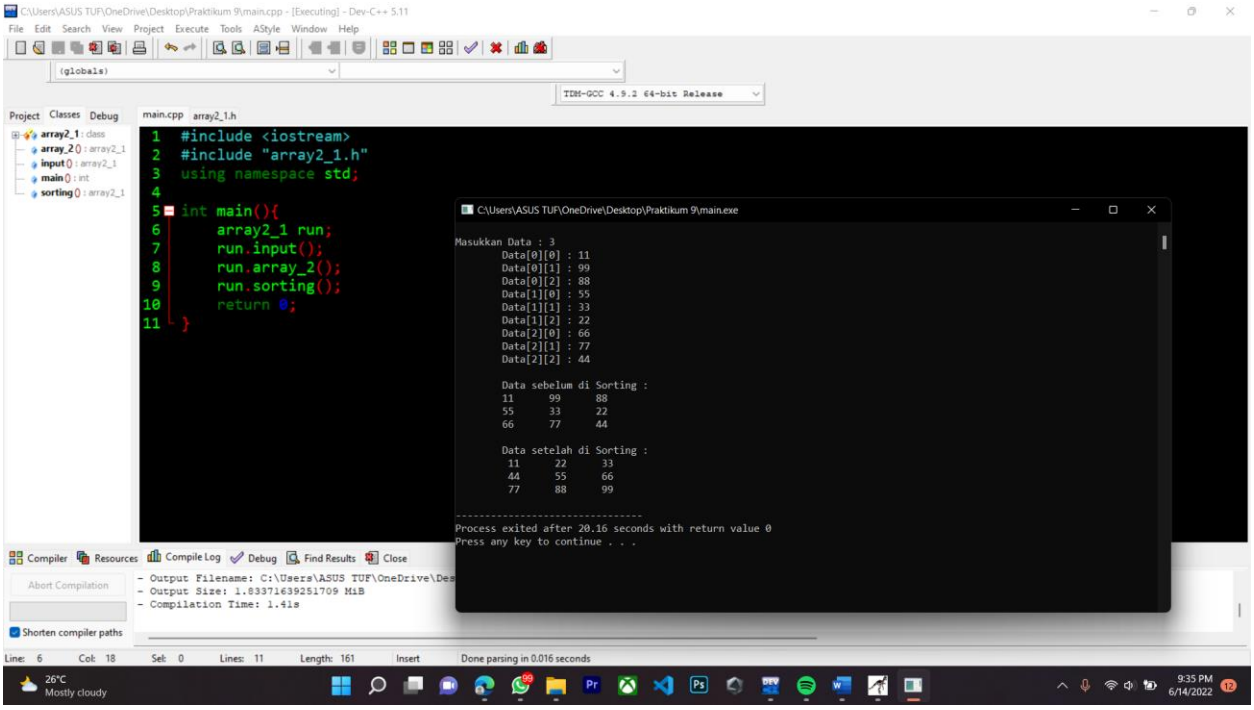


⇨ Hasil running program

Percobaan 1



Percobaan 2


C:\Users\ASUS TUF\OneDrive\Desktop\Praktikum 9\main.cpp - [Executing] - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
(globals)
TDM-GCC 4.9.2 64-bit Release
Project Classes Debug
main.cpp array2_1.h
array2_1 : class
array_2() : array2_1
input() : array2_1
main() : int
sorting() : array2_1
1 #include <iostream>
2 #include "array2_1.h"
3 using namespace std;
4
5 int main(){
6 array2_1 run;
7 run.input();
8 run.array_2();
9 run.sorting();
10 return 0;
11 }
C:\Users\ASUS TUF\OneDrive\Desktop\Praktikum 9\main.exe
Masukkan Data : 3
Data[0][0] : 11
Data[0][1] : 99
Data[0][2] : 88
Data[1][0] : 55
Data[1][1] : 33
Data[1][2] : 22
Data[2][0] : 66
Data[2][1] : 77
Data[2][2] : 44
Data sebelum di Sorting :
11 99 88
55 33 22
66 77 44
Data setelah di Sorting :
11 22 33
44 55 66
77 88 99
Process exited after 20.16 seconds with return value 0
Press any key to continue . . .
Compiler Resources Compile Log Debug Find Results Close
Abort Compilation
Shorten compiler paths
- Output Filename: C:\Users\ASUS TUF\OneDrive\Des
- Output Size: 1.83371639251709 MiB
- Compilation Time: 1.41s
Line: 6 Col: 18 Sel: 0 Lines: 11 Length: 161 Insert Done parsing in 0.016 seconds
26°C
Mostly cloudy
9:35 PM
6/14/2022