Design dan Analisis Algoritma

Nama Lengkap   : RIFANDY ARNAS

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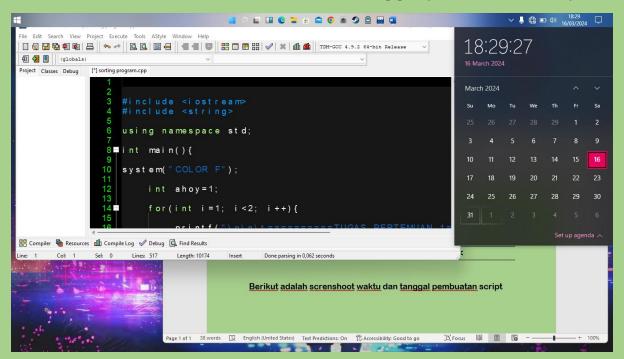Kelas   : TI – 23 – PA (Lab 2)

Matkul   : Design dan Analisis Algoritma
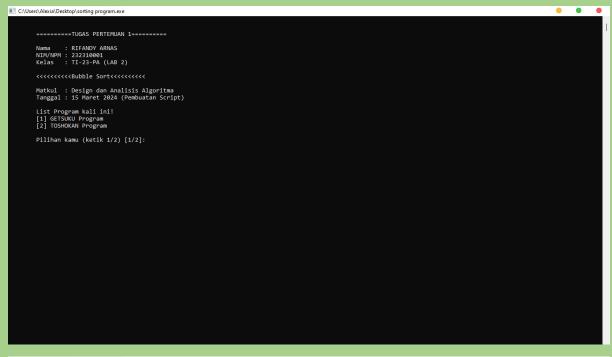

PERTEMUAN I

[TUGAS]

>>>>>>>>>>Bubble Sort<<<<<<<<<<

Berikut adalah screenshoot waktu dan tanggal pembuatan script

Berikut adalah screnshoot Output dari pembuatan program kali ini

```
==========TUGAS PERTEMUAN 1==========

Nama     : RIFANDY ARNAS
NIM/NPM : 232310001
Kelas    : TI-23-PA (LAB 2)

<<<<<<<<<<Bubble Sort<<<<<<<<<<

Matkul  : Design dan Analisis Algoritma
Tanggal : 15 Maret 2024 (Pembuatan Script)

List Program kali ini!
[1] GETSUKU Program
[2] TOSHOKAN Program

Pilihan kamu (ketik 1/2) [1/2]:
```

```
/////////////////////GETSUKU/////////////////////

Selamat datang di program GETSUKU!

Program ini akan mensortir angka yang kamu mau!
Selamat Mencoba!

--------------------------------------------
Ketik jumlah angka yang mau di sortir:
```

```
///////////////////GETSUKU////////////////////

Selamat datang di program GETSUKU!

Program ini akan mensortir angka yang kamu mau!
Selamat Mencoba!

----------------------------------------
Ketik jumlah angka yang mau di sortir: 12
----------------------------------------

----------------------------------------
Ketik [angka bebas] dan tidak melebihi 10000!

Angka ke-1: 6758
Angka ke-2: 6859
Angka ke-3: 4356
Angka ke-4: 2319
Angka ke-5: 3886
Angka ke-6: 9845
Angka ke-7: 7483
Angka ke-8: 1372
Angka ke-9: 8732
Angka ke-10: 2934
Angka ke-11: 4574
Angka ke-12: 2342_
```

```
----------------------------------------
Ketik [angka bebas] dan tidak melebihi 10000!

Angka ke-1: 6758
Angka ke-2: 6859
Angka ke-3: 4356
Angka ke-4: 2319
Angka ke-5: 3886
Angka ke-6: 9845
Angka ke-7: 7483
Angka ke-8: 1372
Angka ke-9: 8732
Angka ke-10: 2934
Angka ke-11: 4574
Angka ke-12: 2342
----------------------------------------

----------------------------------------
Data Awal: 6758 6859 4356 2319 3886 9845 7483 1372 8732 2934 4574 2342
----------------------------------------

----------------------------------------
Sorting Process [Ascending]
----------------------------------------
1th Sorting Process: 6758 4356 2319 3886 6859 7483 1372 8732 2934 4574 2342 9845

2th Sorting Process: 4356 2319 3886 6758 6859 1372 7483 2934 4574 2342 8732 9845

3th Sorting Process: 2319 3886 4356 6758 1372 6859 2934 4574 2342 7483 8732 9845

4th Sorting Process: 2319 3886 4356 1372 6758 2934 4574 2342 6859 7483 8732 9845

5th Sorting Process: 2319 3886 1372 4356 2934 4574 2342 6758 6859 7483 8732 9845

6th Sorting Process: 2319 1372 3886 2934 4356 2342 4574 6758 6859 7483 8732 9845

7th Sorting Process: 1372 2319 2934 3886 2342 4356 4574 6758 6859 7483 8732 9845

8th Sorting Process: 1372 2319 2934 2342 3886 4356 4574 6758 6859 7483 8732 9845

9th Sorting Process: 1372 2319 2342 2934 3886 4356 4574 6758 6859 7483 8732 9845
----------------------------------------

----------------------------------------
Hasil Sorting: 1372 2319 2342 2934 3886 4356 4574 6758 6859 7483 8732 9845
----------------------------------------
```

```
                    --------------------------------------------
                    --------------------------------------------
Data Awal [Hasil sorting Ascending]: 1372 2319 2342 2934 3886 4356 4574 6758 6859 7483 8732 9845
                    --------------------------------------------

                    --------------------------------------------
Sorting Process [Descending]
                    --------------------------------------------
1th Sorting Process: 2319 2342 2934 3886 4356 4574 6758 6859 7483 8732 9845 1372

2th Sorting Process: 2342 2934 3886 4356 4574 6758 6859 7483 8732 9845 2319 1372

3th Sorting Process: 2934 3886 4356 4574 6758 6859 7483 8732 9845 2342 2319 1372

4th Sorting Process: 3886 4356 4574 6758 6859 7483 8732 9845 2934 2342 2319 1372

5th Sorting Process: 4356 4574 6758 6859 7483 8732 9845 3886 2934 2342 2319 1372

6th Sorting Process: 4574 6758 6859 7483 8732 9845 4356 3886 2934 2342 2319 1372

7th Sorting Process: 6758 6859 7483 8732 9845 4574 4356 3886 2934 2342 2319 1372

8th Sorting Process: 6859 7483 8732 9845 6758 4574 4356 3886 2934 2342 2319 1372

9th Sorting Process: 7483 8732 9845 6859 6758 4574 4356 3886 2934 2342 2319 1372

10th Sorting Process: 8732 9845 7483 6859 6758 4574 4356 3886 2934 2342 2319 1372

11th Sorting Process: 9845 8732 7483 6859 6758 4574 4356 3886 2934 2342 2319 1372
                    --------------------------------------------

                    --------------------------------------------
Hasil Sorting: 9845 8732 7483 6859 6758 4574 4356 3886 2934 2342 2319 1372
                    --------------------------------------------

Apakah mau lanjut ke program lain?
Atau mau mengulang program ini?
[1]Lanjut
[2]Mengulang
[3]Exit

Pilihan kamu [1/2/3]: 1
```

```
         ///////////////////TOSHOKAN//////////////////////

Selamat datang di program TOSHOKAN!

Program ini akan mensortir nama buku yang kamu mau!
Selamat Mencoba!

         --------------------------------------------
Ketik jumlah buku yang mau di sortir: _
```

```
Selamat datang di program TOSHOKAN!

Program ini akan mensortir nama buku yang kamu mau!
Selamat Mencoba!

----------------------------------------
Ketik jumlah buku yang mau di sortir: 8
----------------------------------------

----------------------------------------
Ketik [nama buku] dan tidak lebih 100 karakter!

Buku ke-1: Love_Story
Buku ke-2: Kimi_No_Suizou_wo_Tabetai
Buku ke-3: Tonikaku_Kawaii
Buku ke-4: The_Angel_Next_Door_Spoils_Me_Rotten
Buku ke-5: The_Dangers_in_My_Heart
Buku ke-6: Nagi_no_Asu_Kara
Buku ke-7: The_Final_Calamity
Buku ke-8: Your_Tommorow_I'm_Yesterday
----------------------------------------

----------------------------------------
Data Awal: |Love_Story| |Kimi_No_Suizou_wo_Tabetai| |Tonikaku_Kawaii| |The_Angel_Next_Door_Spoils_Me_Rotten| |The_Dangers_in_My_Heart| |Nagi_no_Asu_Kara| |The_Final_Calamity| |Your_Tommorow_I'm_Yesterday|
----------------------------------------

----------------------------------------
Sorting Process [Ascending]
----------------------------------------
1th Sorting Process: |Kimi_No_Suizou_wo_Tabetai| |Love_Story| |The_Angel_Next_Door_Spoils_Me_Rotten| |The_Dangers_in_My_Heart| |Nagi_no_Asu_Kara| |The_Final_Calamity| |Tonikaku_Kawaii| |Your_Tommorow_I'm_Yesterday|

2th Sorting Process: |Kimi_No_Suizou_wo_Tabetai| |Love_Story| |The_Angel_Next_Door_Spoils_Me_Rotten| |Nagi_no_Asu_Kara| |The_Dangers_in_My_Heart| |The_Final_Calamity| |Tonikaku_Kawaii| |Your_Tommorow_I'm_Yesterday|

3th Sorting Process: |Kimi_No_Suizou_wo_Tabetai| |Love_Story| |Nagi_no_Asu_Kara| |The_Angel_Next_Door_Spoils_Me_Rotten| |The_Dangers_in_My_Heart| |The_Final_Calamity| |Tonikaku_Kawaii| |Your_Tommorow_I'm_Yesterday|
----------------------------------------

----------------------------------------
Hasil Sorting: |Kimi_No_Suizou_wo_Tabetai| |Love_Story| |Nagi_no_Asu_Kara| |The_Angel_Next_Door_Spoils_Me_Rotten| |The_Dangers_in_My_Heart| |The_Final_Calamity| |Tonikaku_Kawaii| |Your_Tommorow_I'm_Yesterday|
----------------------------------------
```

```
          ------------------------------------------
          Data Awal [Hasil sorting Ascending]: |Kimi_No_Suizou_wo_Tabetai| |Love_Story| |Nagi_no_Asu_Kara| |The_Angel_Next_Door_Spoils_Me_Rotten| |The_Dangers_in_My_Heart
| |The_Final_Calamity| |Tonikaku_Kawaii| |Your_Tommorow_I'm_Yesterday|
          ------------------------------------------

          ------------------------------------------
          Sorting Process [Descending]
          ------------------------------------------
          1th Sorting Process: |Love_Story| |Nagi_no_Asu_Kara| |The_Angel_Next_Door_Spoils_Me_Rotten| |The_Dangers_in_My_Heart| |The_Final_Calamity| |Tonikaku_Kawaii| |Yo
ur_Tommorow_I'm_Yesterday| |Kimi_No_Suizou_wo_Tabetai|

          2th Sorting Process: |Nagi_no_Asu_Kara| |The_Angel_Next_Door_Spoils_Me_Rotten| |The_Dangers_in_My_Heart| |The_Final_Calamity| |Tonikaku_Kawaii| |Your_Tommorow_I
'm_Yesterday| |Love_Story| |Kimi_No_Suizou_wo_Tabetai|

          3th Sorting Process: |The_Angel_Next_Door_Spoils_Me_Rotten| |The_Dangers_in_My_Heart| |The_Final_Calamity| |Tonikaku_Kawaii| |Your_Tommorow_I'm_Yesterday| |Nagi
_no_Asu_Kara| |Love_Story| |Kimi_No_Suizou_wo_Tabetai|

          4th Sorting Process: |The_Dangers_in_My_Heart| |The_Final_Calamity| |Tonikaku_Kawaii| |Your_Tommorow_I'm_Yesterday| |The_Angel_Next_Door_Spoils_Me_Rotten| |Nagi
_no_Asu_Kara| |Love_Story| |Kimi_No_Suizou_wo_Tabetai|

          5th Sorting Process: |The_Final_Calamity| |Tonikaku_Kawaii| |Your_Tommorow_I'm_Yesterday| |The_Dangers_in_My_Heart| |The_Angel_Next_Door_Spoils_Me_Rotten| |Nagi
_no_Asu_Kara| |Love_Story| |Kimi_No_Suizou_wo_Tabetai|

          6th Sorting Process: |Tonikaku_Kawaii| |Your_Tommorow_I'm_Yesterday| |The_Final_Calamity| |The_Dangers_in_My_Heart| |The_Angel_Next_Door_Spoils_Me_Rotten| |Nagi
_no_Asu_Kara| |Love_Story| |Kimi_No_Suizou_wo_Tabetai|

          7th Sorting Process: |Your_Tommorow_I'm_Yesterday| |Tonikaku_Kawaii| |The_Final_Calamity| |The_Dangers_in_My_Heart| |The_Angel_Next_Door_Spoils_Me_Rotten| |Nagi
_no_Asu_Kara| |Love_Story| |Kimi_No_Suizou_wo_Tabetai|
          ------------------------------------------

          ------------------------------------------
          Hasil Sorting: |Your_Tommorow_I'm_Yesterday| |Tonikaku_Kawaii| |The_Final_Calamity| |The_Dangers_in_My_Heart| |The_Angel_Next_Door_Spoils_Me_Rotten| |Nagi_no_As
u_Kara| |Love_Story| |Kimi_No_Suizou_wo_Tabetai|
          ------------------------------------------

          Apakah mau exit atau mengulang program ini?
          Atau mau mengulang program sebelumnya?
          [1]Mengulang GETSUKU
          [2]Mengulang TOSHOKAN
          [3]Exit

          Pilihan kamu [1/2/3]:
```

```
          Selamat datang di program GETSUKU!

          Program ini akan mensortir angka yang kamu mau!
          Selamat Mencoba!

          ------------------------------------------
          Ketik jumlah angka yang mau di sortir: 10
          ------------------------------------------

          ------------------------------------------
          Ketik [angka bebas] dan tidak melebihi 10000!

          Angka ke-1: 4
          Angka ke-2: 7
          Angka ke-3: 1
          Angka ke-4: 9
          Angka ke-5: 3
          Angka ke-6: 6
          Angka ke-7: 2
          Angka ke-8: 8
          Angka ke-9: 5
          Angka ke-10: 10
          ------------------------------------------

          ------------------------------------------
          Data Awal: 4 7 1 9 3 6 2 8 5 10
          ------------------------------------------

          ------------------------------------------
          Sorting Process [Ascending]
          ------------------------------------------
          1th Sorting Process: 4 1 7 3 6 2 8 5 9 10

          2th Sorting Process: 1 4 3 6 2 7 5 8 9 10

          3th Sorting Process: 1 3 4 2 6 5 7 8 9 10

          4th Sorting Process: 1 3 2 4 5 6 7 8 9 10

          5th Sorting Process: 1 2 3 4 5 6 7 8 9 10
          ------------------------------------------

          ------------------------------------------
          Hasil Sorting: 1 2 3 4 5 6 7 8 9 10
          ------------------------------------------
```

```
-----------------------------------------
-----------------------------------------
Data Awal [Hasil sorting Ascending]: 1 2 3 4 5 6 7 8 9 10
-----------------------------------------

-----------------------------------------
Sorting Process [Descending]
-----------------------------------------
1th Sorting Process: 2 3 4 5 6 7 8 9 10 1

2th Sorting Process: 3 4 5 6 7 8 9 10 2 1

3th Sorting Process: 4 5 6 7 8 9 10 3 2 1

4th Sorting Process: 5 6 7 8 9 10 4 3 2 1

5th Sorting Process: 6 7 8 9 10 5 4 3 2 1

6th Sorting Process: 7 8 9 10 6 5 4 3 2 1

7th Sorting Process: 8 9 10 7 6 5 4 3 2 1

8th Sorting Process: 9 10 8 7 6 5 4 3 2 1

9th Sorting Process: 10 9 8 7 6 5 4 3 2 1
-----------------------------------------

-----------------------------------------
Hasil Sorting: 10 9 8 7 6 5 4 3 2 1
-----------------------------------------

Apakah mau lanjut ke program lain?
Atau mau mengulang program ini?
[1]Lanjut
[2]Mengulang
[3]Exit

Pilihan kamu [1/2/3]: 2
```

```
Program ini akan mensortir nama buku yang kamu mau!
Selamat Mencoba!

-----------------------------------------
Ketik jumlah buku yang mau di sortir: 10
-----------------------------------------

-----------------------------------------
Ketik [nama buku] dan tidak lebih 100 karakter!

Buku ke-1: yabai
Buku ke-2: nani
Buku ke-3: kimi
Buku ke-4: erlangga
Buku ke-5: notu
Buku ke-6: kanji
Buku ke-7: hiragana
Buku ke-8: katakana
Buku ke-9: romaji
Buku ke-10: rapor
-----------------------------------------

-----------------------------------------
Data Awal: |yabai| |nani| |kimi| |erlangga| |notu| |kanji| |hiragana| |katakana| |romaji| |rapor|
-----------------------------------------

-----------------------------------------
Sorting Process [Ascending]
-----------------------------------------
1th Sorting Process: |nani| |kimi| |erlangga| |notu| |kanji| |hiragana| |katakana| |romaji| |rapor| |yabai|

2th Sorting Process: |kimi| |erlangga| |nani| |kanji| |hiragana| |katakana| |notu| |rapor| |romaji| |yabai|

3th Sorting Process: |erlangga| |kimi| |kanji| |hiragana| |katakana| |nani| |notu| |rapor| |romaji| |yabai|

4th Sorting Process: |erlangga| |kanji| |hiragana| |katakana| |kimi| |nani| |notu| |rapor| |romaji| |yabai|

5th Sorting Process: |erlangga| |hiragana| |kanji| |katakana| |kimi| |nani| |notu| |rapor| |romaji| |yabai|
-----------------------------------------

-----------------------------------------
Hasil Sorting: |erlangga| |hiragana| |kanji| |katakana| |kimi| |nani| |notu| |rapor| |romaji| |yabai|
-----------------------------------------

-----------------------------------------
```

```
Hasil Sorting: |erlangga| |hiragana| |kanji| |katakana| |kimi| |nani| |notu| |rapor| |romaji| |yabai|
-----------------------------------------

-----------------------------------------
Data Awal [Hasil sorting Ascending]: |erlangga| |hiragana| |kanji| |katakana| |kimi| |nani| |notu| |rapor| |romaji| |yabai|
-----------------------------------------

-----------------------------------------
Sorting Process [Descending]
-----------------------------------------
1th Sorting Process: |hiragana| |kanji| |katakana| |kimi| |nani| |notu| |rapor| |romaji| |yabai| |erlangga|

2th Sorting Process: |kanji| |katakana| |kimi| |nani| |notu| |rapor| |romaji| |yabai| |hiragana| |erlangga|

3th Sorting Process: |katakana| |kimi| |nani| |notu| |rapor| |romaji| |yabai| |kanji| |hiragana| |erlangga|

4th Sorting Process: |kimi| |nani| |notu| |rapor| |romaji| |yabai| |katakana| |kanji| |hiragana| |erlangga|

5th Sorting Process: |nani| |notu| |rapor| |romaji| |yabai| |kimi| |katakana| |kanji| |hiragana| |erlangga|

6th Sorting Process: |notu| |rapor| |romaji| |yabai| |nani| |kimi| |katakana| |kanji| |hiragana| |erlangga|

7th Sorting Process: |rapor| |romaji| |yabai| |notu| |nani| |kimi| |katakana| |kanji| |hiragana| |erlangga|

8th Sorting Process: |romaji| |yabai| |rapor| |notu| |nani| |kimi| |katakana| |kanji| |hiragana| |erlangga|

9th Sorting Process: |yabai| |romaji| |rapor| |notu| |nani| |kimi| |katakana| |kanji| |hiragana| |erlangga|
-----------------------------------------

-----------------------------------------
Hasil Sorting: |yabai| |romaji| |rapor| |notu| |nani| |kimi| |katakana| |kanji| |hiragana| |erlangga|
-----------------------------------------

Apakah mau exit atau mengulang program ini?
Atau mau mengulang program sebelumnya?
[1]Mengulang GETSUKU
[2]Mengulang TOSHOKAN
[3]Exit

Pilihan kamu [1/2/3]: 3
```

```
--------------------------------
Process exited after 84.86 seconds with return value 0
Press any key to continue . . .
```

Berikut adalah kode script yang saya buat

```cpp
#include <iostream>
#include <string>

using namespace std;

int main(){

system("COLOR F");

    int ahoy=1;

    for(int i=1; i<2; i++){

            printf("\n\n\t==========TUGAS PERTEMUAN 1==========\n\n");

                string nama("RIFANDY ARNAS");
                string nim("232310001");
                string kelas("TI-23-PA");

                kelas.append(" (LAB 2)");

                    cout<<"\tNama\t: "<<nama;
                    cout<<"\n\tNIM/NPM\t: "<<nim;
                    cout<<"\n\tKelas\t: "<<kelas;
```

```cpp
			ahoy++;
		}

	if(ahoy==2){

		printf("\n\n\t<<<<<<<<<Bubble Sort<<<<<<<<<\n\n");

			string matkul("Design dan Analisis Algoritma");
			string tanggal("15 Maret 2024");

			tanggal.append(" (Pembuatan Script)");

				cout<<"\tMatkul\t: "<<matkul;
				cout<<"\n\tTanggal\t: "<<tanggal;

		}

	printf("\n\n\tList Program kali ini!");
	printf("\n\t[1] GETSUKU Program");
	printf("\n\t[2] TOSHOKAN Program");

		int pilihan;

				cout<<"\n\n\tPilihan kamu (ketik 1/2) [1/2]: ";
cin>>pilihan;

					if(pilihan==1){
```

```cpp
                    goto getsuku;

        }

        else if(pilihan==2){

                goto toshokan;

        }

        else{

                system("cls");

                        cout<<"\n\n\n\tPilihan yang kamu pilih
ga ada!";

                cout<<"\n\n\tBye!! [Sistem Exit]";

        cout<<endl<<endl<<endl<<endl<<endl<<endl<<endl;

        cout<<endl<<endl<<endl<<endl<<endl<<endl<<endl;

                exit(0);

        }

getsuku:
```

```cpp
system("cls");

system("COLOR 9");

printf("\n\n\t////////////////////GETSUKU////////////////////\n\n");

printf("\tSelamat datang di program GETSUKU!");
printf("\n\n\tProgram ini akan mensortir angka yang kamu mau!");
printf("\n\tSelamat Mencoba!\n\n");


int sort[10000];
int sort_size;


cout<<"\t----------------------------------------";
cout<<"\n\tKetik jumlah angka yang mau di sortir: ";


cin>>sort_size;


cout<<"\t----------------------------------------";


cout<<"\n\n\t----------------------------------------";
cout<<"\n\tKetik [angka bebas] dan tidak melebihi 10000!";


cout<<endl<<endl;
```

```cpp
        for(int i=0; i<sort_size; i++){

                cout<<"\tAngka ke-"<<i+1<<": ";

                cin>>sort[i];

        }

    cout<<"\t----------------------------------------";

    cout<<"\n\n\t----------------------------------------";
    cout<<"\n\tData Awal: ";

        for(int i=0; i<sort_size; i++){

                cout<<sort[i]<<" ";

        }

    cout<<"\n\t----------------------------------------";

    cout<<"\n\n\t----------------------------------------";
    cout<<"\n\tSorting Process [Ascending]";
    cout<<"\n\t----------------------------------------";
```

```c
int backup;

for(int i=0; i<sort_size; i++){

    int marine=1;

    for (int j=0; j<sort_size-1; j++){

        if(sort[j]>sort[j+1]){

            backup=sort[j];

            sort[j]=sort[j+1];

            sort[j+1]=backup;

            marine++;

        }

    }

    if(marine==1){

        break;

    }
```

```cpp
                cout<<"\n\t"<<i+1<<"th Sorting Process: ";

                for(int k=0; k<sort_size; k++){

                    cout<<sort[k]<<" ";

                }

                cout<<endl;

        }

    cout<<"\t----------------------------------------";

    cout<<"\n\n\t----------------------------------------";
    cout<<"\n\tHasil Sorting: ";

        for(int i=0; i<sort_size; i++){

            cout<<sort[i]<<" ";

        }
    cout<<"\n\t----------------------------------------";

    cout<<"\n\n\t----------------------------------------";
    cout<<"\n\tData Awal [Hasil sorting Ascending]: ";
```

```cpp
	for(int i=0; i<sort_size; i++){

		cout<<sort[i]<<" ";

	}




	cout<<"\n\t----------------------------------------";




	cout<<"\n\n\t-----------------------------------------";
	cout<<"\n\tSorting Process [Descending]";
	cout<<"\n\t----------------------------------------";

int backup1;

		for(int i=0; i<sort_size; i++){

			int hoshou_marine=1;

			for(int j=0; j<sort_size-1; j++){

				if(sort[j]<sort[j+1]){

					backup1=sort[j];
```

```cpp
                                sort[j]=sort[j+1];

                                sort[j+1]=backup1;

                                hoshou_marine++;

                        }

                }

                if(hoshou_marine==1){

                        break;

                }

                cout<<"\n\t"<<i+1<<"th Sorting Process:
";

                        for(int k=0; k<sort_size; k++){

                                cout<<sort[k]<<" ";

                        }

                cout<<endl;

        }
```

```cpp
		cout<<"\t-------------------------------------";

		cout<<"\n\n\t----------------------------------------";
		cout<<"\n\tHasil Sorting: ";

			for(int i=0; i<sort_size; i++){

				cout<<sort[i]<<" ";

			}
		cout<<"\n\t-----------------------------------------";

	int yoshi_ichi;

		cout<<"\n\n\tApakah mau lanjut ke program lain?";
		cout<<"\n\tAtau mau mengulang program ini?";
		cout<<"\n\t[1]Lanjut";
		cout<<"\n\t[2]Mengulang";
		cout<<"\n\t[3]Exit";

		cout<<"\n\n\tPilihan kamu [1/2/3]: ";
	cin>>yoshi_ichi;

			if(yoshi_ichi==1){

				goto toshokan;
```

```cpp
			}

				else if(yoshi_ichi==2){

					goto getsuku;

				}

				else{

					system("cls");


	cout<<endl<<endl<<endl<<endl<<endl<<endl<<endl;

	cout<<endl<<endl<<endl<<endl<<endl<<endl<<endl;

					exit(0);

				}

toshokan:

	system("cls");

	system("COLOR E");

	printf("\n\n\t/////////////////////TOSHOKAN/////////////////////\n\n");
```

```cpp
printf("\tSelamat datang di program TOSHOKAN!");
printf("\n\n\tProgram ini akan mensortir nama buku yang kamu mau!");
printf("\n\tSelamat Mencoba!\n\n");


string bukusrt[100];

int bukusrt_size;


cout<<"\t----------------------------------------";
cout<<"\n\tKetik jumlah buku yang mau di sortir: ";


cin>>bukusrt_size;


cout<<"\t----------------------------------------";


cout<<"\n\n\t----------------------------------------";
cout<<"\n\tKetik [nama buku] dan tidak lebih 100 karakter!";


cout<<endl<<endl;


for(int i=0; i<bukusrt_size; i++){

    cout<<"\tBuku ke-"<<i+1<<": ";

    cin>>bukusrt[i];
```

```cpp
		}

		cout<<"\t-----------------------------------------";

		cout<<"\n\n\t-----------------------------------------";
		cout<<"\n\tData Awal: ";

			for(int i=0; i<bukusrt_size; i++){

				cout<<"|"<<bukusrt[i]<<"| ";

			}

		cout<<"\n\t-----------------------------------------";

		cout<<"\n\n\t-----------------------------------------";
		cout<<"\n\tSorting Process [Ascending]";
		cout<<"\n\t-----------------------------------------";

	string buku;

			for(int i=0; i<bukusrt_size; i++){

				int chloe=1;
```

```cpp
for (int j=0; j<bukusrt_size-1; j++){

    if(bukusrt[j]>bukusrt[j+1]){

        buku=bukusrt[j];

        bukusrt[j]=bukusrt[j+1];

        bukusrt[j+1]=buku;

        chloe++;

    }

}

if(chloe==1){

    break;

}

cout<<"\n\t"<<i+1<<"th Sorting Process:
";

    for(int k=0; k<bukusrt_size; k++){

        cout<<"|"<<bukusrt[k]<<"| ";
```

```cpp
                }

            cout<<endl;

        }


    cout<<"\t----------------------------------------";

    cout<<"\n\n\t----------------------------------------";
    cout<<"\n\tHasil Sorting: ";

        for(int i=0; i<bukusrt_size; i++){

            cout<<"|"<<bukusrt[i]<<"| ";


        }
    cout<<"\n\t----------------------------------------";

    cout<<"\n\n\t----------------------------------------";
    cout<<"\n\tData Awal [Hasil sorting Ascending]: ";

        for(int i=0; i<bukusrt_size; i++){

            cout<<"|"<<bukusrt[i]<<"| ";


        }
```

```cpp
cout<<"\n\t----------------------------------------";



cout<<"\n\n\t----------------------------------------";
cout<<"\n\tSorting Process [Descending]";
cout<<"\n\t----------------------------------------";

string buku1;

    for(int i=0; i<bukusrt_size; i++){

        int sakamata_chloe=1;

        for (int j=0; j<bukusrt_size-1; j++){

            if(bukusrt[j]<bukusrt[j+1]){

                buku1=bukusrt[j];

                bukusrt[j]=bukusrt[j+1];

                bukusrt[j+1]=buku1;

                sakamata_chloe++;
```

```cpp
				}

			}

			if(sakamata_chloe==1){

				break;

			}

			cout<<"\n\t"<<i+1<<"th Sorting Process: ";

				for(int k=0; k<bukusrt_size; k++){

					cout<<"|"<<bukusrt[k]<<"| ";

				}

			cout<<endl;

		}

	cout<<"\t----------------------------------------";

	cout<<"\n\n\t----------------------------------------";
	cout<<"\n\tHasil Sorting: ";
```

```cpp
				for(int i=0; i<bukusrt_size; i++){

					cout<<"|"<<bukusrt[i]<<"| ";

				}
			cout<<"\n\t----------------------------------------";

		int yoshi_ni;

			cout<<"\n\n\tApakah mau exit atau mengulang
program ini?";
			cout<<"\n\tAtau mau mengulang program
sebelumnya?";
			cout<<"\n\t[1]Mengulang GETSUKU";
			cout<<"\n\t[2]Mengulang TOSHOKAN";
			cout<<"\n\t[3]Exit";

			cout<<"\n\n\tPilihan kamu [1/2/3]: "; cin>>yoshi_ni;

				if(yoshi_ni==1){

					goto getsuku;

				}

				else if(yoshi_ni==2){

					goto toshokan;
```

```cpp
			}

		else{

				system("cls");


		cout<<endl<<endl<<endl<<endl<<endl<<endl<<endl;

		cout<<endl<<endl<<endl<<endl<<endl<<endl<<endl;


				exit(0);


			}



	cin.get();

	return 0;

	}
```