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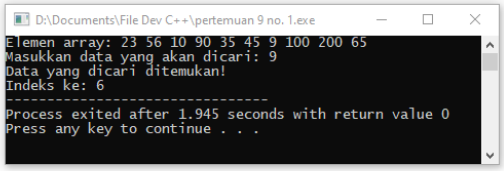
Kelas : 02TPLP023

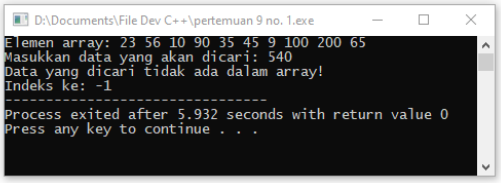
Tugas : Algoritma II – Pertemuan 9

1.

pertemuan 9 no. 1.cpp

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

void SeqSearch(int data[], int n, int x, int *idx);

int main()
{
    int data[] = {23, 56, 10, 90, 35, 45, 9, 100, 200, 65};
    int idx, x, i, jmlData = 10;

    cout<<"Elemen array: ";
    for(i = 0; i < jmlData; i++)
    {
        cout<<data[i]<<" ";
    }
    cout<<endl;

    cout<<"Masukkan data yang akan dicari: ";
    cin>>x;

    SeqSearch(data, jmlData, x, &idx);
    if(idx != -1)
    {
        cout<<"Data yang dicari ditemukan!"<<endl;
        cout<<"Indeks ke: "<<idx;
    }
    else
    {
        cout<<"Data yang dicari tidak ada dalam array!"<<endl;
        cout<<"Indeks ke: "<<idx;
    }

    return 0;

}

void SeqSearch(int data[], int n, int x, int *idx)
{
    int i = 0;
    while(i < n-1 && data[i] != x)
    {
        i++;
    }

    if(data[i] == x)
    {
        *idx = i;
    }
    else
    {
        *idx = -1;
    }
}
```





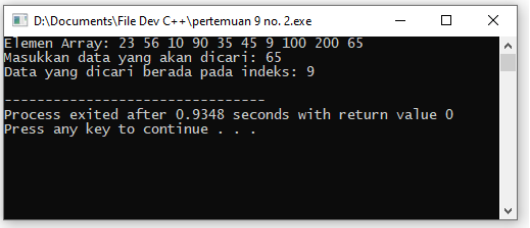
Source code:

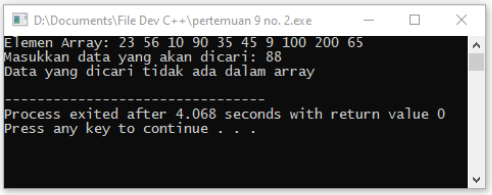
```
#include<iostream>
using namespace std;

void SeqSearch(int data[], int n, int x, int *idx);

int main()
{
	int data[] = {23, 56, 10, 90, 35, 45, 9, 100, 200, 65};
	int idx, x, i, jmlData = 10;

	cout<<"Elemen array: ";
	for(i = 0; i < jmlData; i++)
	{
		cout<<data[i]<<" ";
	}
	cout<<endl;

	cout<<"Masukkan data yang akan dicari: ";
	cin>>x;

	SeqSearch(data, jmlData, x, &idx);
	if(idx != -1)
	{
		cout<<"Data yang dicari ditemukan!"<<endl;
		cout<<"Indeks ke: "<<idx;
	}
	else
	{
		cout<<"Data yang dicari tidak ada dalam array!"<<endl;
		cout<<"Indeks ke: "<<idx;
	}

	return 0;

}

void SeqSearch(int data[], int n, int x, int *idx)
{
	int i = 0;
	while(i < n-1 && data[i] != x)
	{
		i++;
	}

	if(data[i] == x)
	{
		*idx = i;
	}
	else
	{
		*idx = -1;
	}
}
```

2.

pertemuan 9 no. 2.cpp

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

void SeqSearch(int data[], int n, int x, int *idx);

int main()
{
    int data[] = {23, 56, 10, 90, 35, 45, 9, 100, 200, 65};
    int idx, x, i, jmlData = 10;

    cout<<"Elemen Array: ";
    for(i = 0; i < jmlData; i++)
    {
        cout<<data[i]<<" ";
    }
    cout<<endl;

    cout<<"Masukkan data yang akan dicari: ";
    cin>>x;

    SeqSearch(data, jmlData, x, &idx);

    if(idx != -1)
    {
        cout<<"Data yang dicari berada pada indeks: "<<idx<<endl;
    }
    else
    {
        cout<<"Data yang dicari tidak ada dalam array"<<endl;
    }
}

void SeqSearch(int data[], int n, int x, int *idx)
{
    int i = 0;
    bool ketemu = false;

    while(i < n && !ketemu)
    {
        if(data[i] == x)
        {
            ketemu = true;
        }
        else
        {
            i++;
        }
    }

    if(ketemu)
    {
        *idx = i;
    }
    else
    {
        *idx = -1;
    }
}
```





Source Code:

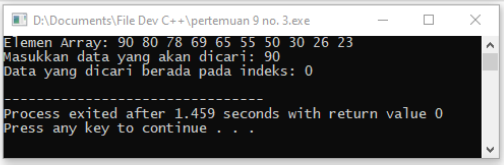
```
#include<iostream>
using namespace std;

void SeqSearch(int data[], int n, int x, int *idx);

int main()
{
	int data[] = {23, 56, 10, 90, 35, 45, 9, 100, 200, 65};
	int idx, x, i, jmlData = 10;

	cout<<"Elemen Array: ";
	for(i = 0; i < jmlData; i++)
	{
		cout<<data[i]<<" ";
	}
	cout<<endl;

	cout<<"Masukkan data yang akan dicari: ";
	cin>>x;

	SeqSearch(data, jmlData, x, &idx);

	if(idx != -1)
	{
		cout<<"Data yang dicari berada pada indeks: "<<idx<<endl;
	}
	else
	{
		cout<<"Data yang dicari tidak ada dalam array"<<endl;
	}
}

void SeqSearch(int data[], int n, int x, int *idx)
{
```

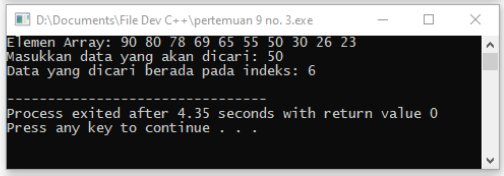
```
	int i = 0;
	bool ketemu = false;

	while(i < n && !ketemu)
	{
		if(data[i] == x)
		{
			ketemu = true;
		}
		else
		{
			i++;
		}
	}

	if(ketemu)
	{
		*idx = i;
	}
	else
	{
		*idx = -1;
	}
}
```

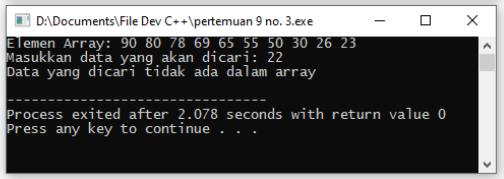
3.

pertemuan 9 no. 3.cpp

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

void SeqSearch(int data[], int n, int x, int *idx);

int main()
{
    int data[] = {90, 80, 78, 69, 65, 55, 50, 30, 26, 23};
    int idx, x, i, jmlData = 10;

    cout<<"Elemen Array: ";
    for(i = 0; i < jmlData; i++)
    {
        cout<<data[i]<<" ";
    }
    cout<<endl;

    cout<<"Masukkan data yang akan dicari: ";
    cin>>x;

    SeqSearch(data, jmlData, x, &idx);
    if(idx != -1)
    {
        cout<<"Data yang dicari berada pada indeks: "<<idx<<endl;
    }
    else
    {
        cout<<"Data yang dicari tidak ada dalam array"<<endl;
    }

}

void SeqSearch(int data[], int n, int x, int *idx)
{
    int i = 0;
    while(i < n - 1 && data[i] > x)
    {
        i++;
    }

    if(data[i] == x)
    {
        *idx = i;
    }
    else
    {
        *idx = -1;
    }
}
```







Source Code:

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

void SeqSearch(int data[], int n, int x, int *idx);

int main()
{
	int data[] = {90, 80, 78, 69, 65, 55, 50, 30, 26, 23};
	int idx, x, i, jmlData = 10;

	cout<<"Elemen Array: ";
	for(i = 0; i < jmlData; i++)
	{
		cout<<data[i]<<" ";
	}
	cout<<endl;

	cout<<"Masukkan data yang akan dicari: ";
	cin>>x;

	SeqSearch(data, jmlData, x, &idx);
	if(idx != -1)
	{
		cout<<"Data yang dicari berada pada indeks: "<<idx<<endl;
	}
	else
	{
		cout<<"Data yang dicari tidak ada dalam array"<<endl;
	}

}

void SeqSearch(int data[], int n, int x, int *idx)
{
```

```
	int i = 0;
	while(i < n - 1 && data[i] > x)
	{
		i++;
	}

	if(data[i] == x)
	{
		*idx = i;
	}
	else
	{
		*idx = -1;
	}
}
```

4.

pertemuan 9 no. 3.cpp | pertemuan 9 no. 4.cpp

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

void SeqSearch(int data[], int n, int x, int *idx);

int main()
{
    int data[] = {23, 26, 30, 50, 55, 65, 69, 78, 80, 90};
    int idx, x, i, jmlData = 10;

    cout<<"Elemen Array: ";
    for(i = 0; i < jmlData; i++)
    {
        cout<<data[i]<<" ";
    }
    cout<<endl;

    cout<<"Masukkan data yang akan dicari: ";
    cin>>x;

    SeqSearch(data, jmlData, x, &idx);
    if(idx != -1)
    {
        cout<<"Data yang dicari berada pada indeks: "<<idx<<endl;
    }
    else
    {
        cout<<"Data yang dicari tidak ada dalam array"<<endl;
    }

}

void SeqSearch(int data[], int n, int x, int *idx)
{
    bool ketemu = false;
    int top = n-1, bottom = 0, mid;
    int i = 0;
    while(bottom <= top && !ketemu)
    {
        mid = (top + bottom) / 2;

        if(data[mid] == x)
        {
            ketemu = true;
        }
        else
        {
            if(data[mid] > x)
            {
                top = mid - 1;
            }
            else
            {
                bottom = mid + 1;
            }
        }
    }

    if(ketemu)
    {
        *idx = mid;
    }
    else
    {
        *idx = -1;
    }
}
```

D:\Documents\File Dev C++\pertemuan 9 no. 4.exe

```
Masukkan data yang akan dicari: 30
Data yang dicari berada pada indeks: 2

--------------------------------
Process exited after 0.5256 seconds with return value 0
Press any key to continue . . .
```

D:\Documents\File Dev C++\pertemuan 9 no. 4.exe

```
Elemen Array: 23 26 30 50 55 65 69 78 80 90
Masukkan data yang akan dicari: 90
Data yang dicari berada pada indeks: 9

--------------------------------
Process exited after 1.705 seconds with return value 0
Press any key to continue . . .
```

D:\Documents\File Dev C++\pertemuan 9 no. 4.exe

```
Elemen Array: 23 26 30 50 55 65 69 78 80 90
Masukkan data yang akan dicari: 56
Data yang dicari tidak ada dalam array

--------------------------------
Process exited after 3.168 seconds with return value 0
Press any key to continue . . .
```

Source Code:

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

void SeqSearch(int data[], int n, int x, int *idx);

int main()
{
	int data[] = {23, 26, 30, 50, 55, 65, 69, 78, 80, 90};
	int idx, x, i, jmlData = 10;

	cout<<"Elemen Array: ";
	for(i = 0; i < jmlData; i++)
	{
		cout<<data[i]<<" ";
	}
	cout<<endl;

	cout<<"Masukkan data yang akan dicari: ";
	cin>>x;

	SeqSearch(data, jmlData, x, &idx);
	if(idx != -1)
	{
		cout<<"Data yang dicari berada pada indeks: "<<idx<<endl;
	}
	else
	{
		cout<<"Data yang dicari tidak ada dalam array"<<endl;
	}

}

void SeqSearch(int data[], int n, int x, int *idx)
{
```

```
	bool ketemu = false;
	int top = n-1, bottom = 0, mid;
	int i = 0;
	while(bottom <= top && !ketemu)
	{
		mid = (top + bottom) / 2;

		if(data[mid] == x)
		{
			ketemu = true;
		}
		else
		{
			if(data[mid] > x)
			{
				top = mid - 1;
			}
			else
			{
				bottom = mid + 1;
			}
		}
	}

	if(ketemu)
	{
		*idx = mid;
	}
	else
	{
		*idx = -1;
	}
}
```