# PRAKTIKUM ANALISIS ALGORITMA
# KELAS A


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## Studi Kasus 1: Pencarian Nilai Maksimal

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

int main()
{
	int n;
	int x[10];
	cout << "Masukkan n : ";
	cin >> n;
	for (int i = 0; i < n; i++)
	{
		cout << "Masukkan Data ke - " << i+1 << " : ";
		cin >> x[i];
	}

	int max = x[0];
	int i = 1;
	while (i <= n)
	{
		if (x[i] > max)
			max = x[i];
		i++;
	}
	cout << "Data terbesar: " << max << endl;

	return 0;
}
```

## Studi Kasus 2: *Sequential Search*

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

int main()
{
	int n;
	int x[10];
	cout << "Masukkan n : ";
	cin >> n;
	for (int i = 0; i < n; i++)
	{
		cout << "Masukkan Data ke - " << i+1 << " : ";
		cin >> x[i];
	}

	int y;
	cout << "Masukkan yang dicari : ";
	cin >> y;

	int i = 0;
	bool found = false;
	int idx;
	while ((i < n) && (!found))
	{
		if (x[i] == y)
			found = true;
		else
			i++;
	}
	if (found)
		idx = i+1;
	else
		idx = 0;

	cout << "Yang dicari berada di urutan : " << idx << endl;

	return 0;
}
```

## Studi Kasus 3: *Binary Search*

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

int main()
{
	int n;
	int x[10];
	cout << "Masukkan n : ";
	cin >> n;
	for (int i = 0; i < n; i++)
	{
		cout << "Masukkan Data ke - " << i+1 << " : ";
		cin >> x[i];
	}

	int y;
	cout << "Masukkan yang dicari : ";
	cin >> y;

	int i = 0;
	int j = n-1;
	bool found = false;
	int idx;
	int mid;
	while ((i <= j) && (!found))
	{
		mid = (i + j)/2;
		if (x[mid] == y)
			found = true;
		else
		{
			if (x[mid] < y)
				i = mid + 1;
			else
				j = mid - 1;
		}

	}

	if (found)
		idx = mid+1;
	else
		idx = 0;

	cout << "Yang dicari berada di urutan : " << idx << endl;

	return 0;
}
```

## Studi Kasus 4: Insertion Sort

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

int main()
{
	int n;
	int x[10];
	cout << "Masukkan n : ";
	cin >> n;
	for (int i = 0; i < n; i++)
	{
		cout << "Masukkan Data ke - " << i+1 << " : ";
		cin >> x[i];
	}
	cout << "Data Sebelum di Sorting : ";
	for (int i = 0; i < n; i++)
		cout << x[i] << " ";
	cout << endl;

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

	cout << "Data setelah di Sorting : ";
	for (int i = 0; i < n; i++)
		cout << x[i] << " ";

	return 0;
}
```

## Studi Kasus 5: Selection Sort

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

int main()
{
	int n;
	int x[10];
	cout << "Masukkan n : ";
	cin >> n;
	for (int i = 0; i < n; i++)
	{
		cout << "Masukkan Data ke - " << i+1 << " : ";
		cin >> x[i];
	}
	cout << "Data Sebelum di Sorting : ";
	for (int i = 0; i < n; i++)
		cout << x[i] << " ";
	cout << endl;

	int imax;
	int temp;
	for (int i = n-1; i >= 1; i--)
	{
		imaks = 0;
		for (int j = 1; j <= i; j++)
		{
			if (x[j] > x[imax])
				imax = j;
		}
		temp = x[i];
		x[i] = x[imax];
		x[imax] = temp;
	}

	cout << "Data setelah di Sorting : ";
	for (int i = 0; i < n; i++)
		cout << x[i] << " ";
```