

PRAKTIKUM ANALISIS ALGORITMA KELAS A



Disusun oleh :
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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 2: 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 2: Insertion 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];
    }
    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 2: Selection 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];
    }
    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] << " ";
}
```