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1. **Soal A**

For j=1 to n-1

K = j

For I = j+1 to n

If a[i] < a[k] then

k = i

endif

endfor

tm = a[j]

a[j] = a[k]

a[k] = tm

endfor

Kompleksitas

|  |  |
| --- | --- |
| k = j | n - 1 kali |
| If a[i] < a[k] then  k = 1 | 2 x |
| tm = a[j] | n - 1 kali |
| a[j] = a[k] | n - 1 kali |
| a[k] = tm | n - 1 kali |
|  |  |
| Tmax(n) |  |

n0 = 1

**Soal B**

For i = 0 to n-1

For j = 0 to n-1

c[I,j]=0

for k=0 to n-1 cij = d[I,k] and b[k,j]

c[i,j] = c[i,j] or cij

endfor

endfor

endfor

Kompleksitas

|  |  |
| --- | --- |
| c[I,j] | n\*n |
| cij = d[I,k] and b[k,j] | n\*n\*n |
| n[i,j] = c[i,j] or cij | n\*n\*n |
|  |  |
|  |  |
|  |  |
|  |  |
| Tmax(n) |  |

n0 = 1

1. **Soal A**

A)

ada = 0;

kx = 1;

input br;

for(i = 1; i < n+1; i++){

if(a[i]==br&&(!ada))

ada = 1;

kx = I;

i = n+1;

}

}

Kompleksitas

|  |  |
| --- | --- |
| ada = 0 | 1 kali |
| kx = 1 | 1 kali |
| if(a[i] == br && (!ada)) | n kali |
| ada = 1; | 1 kali |
| kx = i; | 1 kali |
| i = n+1; | 1 kali |
| Tmax(n) |  |

≤ C

n0 = 1

1 + 5 ≤ C

C ≥ 6

B)

L = 1;

R = n;

Ada = 0;

Input br;

While((L <= R)&&(!ada)){  
 m = (L+R) div 2;

If(a[m]==br)

ada = 1;

else if (br < a[m])

R = m-1;

else

L = m+1

}

Kompleksitas

|  |  |
| --- | --- |
| L = 1 | 1 kali |
| R = n | 1 kali |
| ada = 0 | 1 kali |
| m = (L+R) div 2 | log n |
| if(a[m] == br) | log n |
| ada = 1 | 1 kali |
| else if (br < a[m]) | 2(log n -1) |
| Tmax(n) |  |

≤ C

≤ C

n0 = 2

4 + 2 ≤ C

C ≥ 6

**Soal B**

Komputer A mengeksekusi intruksi / detik

Jumlah data =

Kompleksitas = O(n)

Komputer B mengeksekusi intruksi / detik

Jumlah data =

Kompleksitas = O(log n)

Algoritma yang lebih baik adalah algoritma B karena running timenya lebih cepat