Nama   : Muh. Nur Afrizal

No / NIM   : 24 / 222212738

Kelas   : 1KS3

Praktikum 10A

- Source Code

```pascal
Program Praktikum10A;


Var

    A: array[0..9] of Real;

    B: array[-10..20] of String;

    C: array['a'..'j'] of Boolean;

    X : array[1..10] of Integer;


begin

    X[1] := 10;

    X[2] := X[1] - 5;

    X[3] := X[2] + X[1];

    Writeln(X[3]);

    Writeln(X[13]);

    Writeln(A[10]);
end.
```

- Output

```
Compiling Praktikum10A.pas
Praktikum10A.pas(16,15) Warning: range check error while evaluating constants (13 must be between 1 and 10)
Praktikum10A.pas(17,15) Warning: range check error while evaluating constants (10 must be between 0 and 9)
Praktikum10A.pas(17,13) Warning: Variable "A" does not seem to be initialized
Praktikum10A.pas(5,5) Note: Local variable "B" not used
Praktikum10A.pas(6,5) Note: Local variable "C" not used
Linking Praktikum10A.exe
17 lines compiled, 0.2 sec, 37280 bytes code, 2484 bytes data
3 warning(s) issued
2 note(s) issued
15
0
 3.1830098764850570E-313
```

Penjelasan : Walaupun program bisa berjalan di compiler yang saya pakai, namun muncul warning *out of index* pada line 16 dan 17 karena di line 16 menggunakan index ke 13 padahal array hanya berisi 10 index dan di line 16 menggunakan index ke 10 padahal array hanya berisi 9 index.

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Praktikum 10B

- Source Code

```pascal
Program Praktikum10B;


Var

    X : array[1..10] of Integer;

    Terbesar: Integer;

    i : Integer;


Begin

    For i:=1 to 10 do Begin

        Write('Input data ke-', i,'= ');

        Readln(X[i]);

    End;

    Terbesar := X[1];

    For i:=2 to 10 do Begin

        If X[i] > Terbesar then Terbesar := X[i];

    End;

    Writeln(Terbesar);

    Readln;

End.
```

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- Output

```
Compiling Praktikum10B.pas
Linking Praktikum10B.exe
18 lines compiled, 0.1 sec, 30800 bytes code, 1332 bytes data
Input data ke-1= 7
Input data ke-2= 5
Input data ke-3= 8
Input data ke-4= 4
Input data ke-5= 3
Input data ke-6= 6
Input data ke-7= 18
Input data ke-8= 19
Input data ke-9= 4
Input data ke-10= 5
19
```

Penjelasan :

Program berjalan dengan menganggap elemen index pertama dari array sebagai bilangan terbesar, lalu dibandingkan dengan elemen setelahnya. Jika elemen index pertama lebih besar dari elemen index setelahnya, maka variabel terbesar masih diisi dengan elemen pertama. Tetapi, jika elemen pertema lebih kecil dari elemen index setelahnya, maka variabel terbesar diisi dengan elemen setelahnya. Begitu seterusnya sampai index ke 10.

Praktikum 10C

- Source Code

```pascal
Program penjum_matriks;


var
    a,b,c: array[1..3, 1..3] of integer;
    i,j: integer;


begin
    writeln('buat matriks A');
    for i:=1 to 3 do
        for j:=1 to 3 do begin
            write('[',i,',',j,']=');
            readln(a[i,j]);
        end;
    writeln('buat matriks B');
    for i:=1 to 3 do
        for j:=1 to 3 do begin
            write('[',i,',',j,']=');
            readln(b[i,j]);
        end;
    writeln('Matriks A');
    for i:=1 to 3 do begin
        for j:=1 to 3 do
            write(a[i,j]:3,' ');
```

```pascal
            writeln;
        end;
    writeln('Matriks B');
    for i:=1 to 3 do begin
        for j:=1 to 3 do
            write(b[i,j]:3,' ');
        writeln;
    end;
    writeln('Matriks C');
    for i := 1 to 3 do begin
        for j := 1 to 3 do begin
            c[i][j] := a[i][j] + b[i][j];
            write(c[i, j]:3, ' ');
        end;
        writeln;
    end;
    readln;
end.
```

- Output

```
Compiling Praktikum10C.pas
Linking Praktikum10C.exe
40 lines compiled, 0.1 sec, 32048 bytes code, 1332 bytes data
buat matriks A
[1,1]=1
[1,2]=2
[1,3]=3
[2,1]=4
[2,2]=5
[2,3]=6
[3,1]=7
[3,2]=8
[3,3]=9
buat matriks B
[1,1]=2
[1,2]=3
[1,3]=4
[2,1]=5
[2,2]=6
[2,3]=7
[3,1]=8
[3,2]=9
[3,3]=10
Matriks A
   1   2   3
   4   5   6
   7   8   9
Matriks B
   2   3   4
   5   6   7
   8   9  10
Matriks C
   3   5   7
   9  11  13
  15  17  19
```

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Praktikum 10D

- Source Code

```pascal
Program penjum_matriks;

var
    a, b, c: array[1..3, 1..3, 1..3] of integer;
    i, j, k: integer;

begin
    writeln('buat matriks A');
    for i:=1 to 3 do
        for j:=1 to 3 do
            for k := 1 to 3 do begin
                write('[', i, ', ', j, ', ', k, '] =
');
                readln(a[i,j,k]);
            end;
    writeln('buat matriks B');
    for i:=1 to 3 do
        for j:=1 to 3 do
            for k := 1 to 3 do begin
                write('[', i, ', ', j, ', ', k, '] =
');
                readln(b[i,j,k]);
            end;
```

```pascal
    writeln('Matriks A');
    for i := 1 to 3 do
        for j := 1 to 3 do
            for k := 1 to 3 do
                writeln('A[', i, ', ', j, ', ', k, ']
= ', a[i,j,k]);
    writeln('Matriks B');
    for i:=1 to 3 do
        for j:=1 to 3 do
            for k := 1 to 3 do
                writeln('B[', i, ', ', j, ', ', k, ']
= ', b[i,j,k]);
    writeln('Matriks C');
    for i := 1 to 3 do
        for j := 1 to 3 do
            for k := 1 to 3 do begin
                c[i][j][k] := a[i][j][k] + b[i][j][k];
                writeln('C[', i, ', ', j, ', ', k, ']
= ', c[i,j,k]);
            end;
    readln;
end.
```

- Output

```
Compiling Praktikum10D.pas
Linking Praktikum10D.exe
39 lines compiled, 0.1 sec, 32864 bytes code, 1332 bytes data
buat matriks A
[1, 1, 1] = 1
[1, 1, 2] = 2
[1, 1, 3] = 3
[1, 2, 1] = 4
[1, 2, 2] = 5
[1, 2, 3] = 6
[1, 3, 1] = 7
[1, 3, 2] = 8
[1, 3, 3] = 9
[2, 1, 1] = 10
[2, 1, 2] = 11
[2, 1, 3] = 12
[2, 2, 1] = 13
[2, 2, 2] = 14
[2, 2, 3] = 15
[2, 3, 1] = 16
[2, 3, 2] = 17
[2, 3, 3] = 18
[3, 1, 1] = 19
[3, 1, 2] = 20
[3, 1, 3] = 21
[3, 2, 1] = 22
[3, 2, 2] = 23
[3, 2, 3] = 24
[3, 3, 1] = 25
[3, 3, 2] = 26
[3, 3, 3] = 27
```

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```
buat matriks B
[1, 1, 1] = 2
[1, 1, 2] = 3
[1, 1, 3] = 4
[1, 2, 1] = 5
[1, 2, 2] = 6
[1, 2, 3] = 7
[1, 3, 1] = 8
[1, 3, 2] = 9
[1, 3, 3] = 10
[2, 1, 1] = 11
[2, 1, 2] = 12
[2, 1, 3] = 13
[2, 2, 1] = 14
[2, 2, 2] = 15
[2, 2, 3] = 16
[2, 3, 1] = 17
[2, 3, 2] = 18
[2, 3, 3] = 19
[3, 1, 1] = 20
[3, 1, 2] = 21
[3, 1, 3] = 22
[3, 2, 1] = 23
[3, 2, 2] = 24
[3, 2, 3] = 25
[3, 3, 1] = 26
[3, 3, 2] = 27
[3, 3, 3] = 28
```

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```
Matriks A
A[1, 1, 1] = 1
A[1, 1, 2] = 2
A[1, 1, 3] = 3
A[1, 2, 1] = 4
A[1, 2, 2] = 5
A[1, 2, 3] = 6
A[1, 3, 1] = 7
A[1, 3, 2] = 8
A[1, 3, 3] = 9
A[2, 1, 1] = 10
A[2, 1, 2] = 11
A[2, 1, 3] = 12
A[2, 2, 1] = 13
A[2, 2, 2] = 14
A[2, 2, 3] = 15
A[2, 3, 1] = 16
A[2, 3, 2] = 17
A[2, 3, 3] = 18
A[3, 1, 1] = 19
A[3, 1, 2] = 20
A[3, 1, 3] = 21
A[3, 2, 1] = 22
A[3, 2, 2] = 23
A[3, 2, 3] = 24
A[3, 3, 1] = 25
A[3, 3, 2] = 26
A[3, 3, 3] = 27
```

```
Matriks B
B[1, 1, 1] = 2
B[1, 1, 2] = 3
B[1, 1, 3] = 4
B[1, 2, 1] = 5
B[1, 2, 2] = 6
B[1, 2, 3] = 7
B[1, 3, 1] = 8
B[1, 3, 2] = 9
B[1, 3, 3] = 10
B[2, 1, 1] = 11
B[2, 1, 2] = 12
B[2, 1, 3] = 13
B[2, 2, 1] = 14
B[2, 2, 2] = 15
B[2, 2, 3] = 16
B[2, 3, 1] = 17
B[2, 3, 2] = 18
B[2, 3, 3] = 19
B[3, 1, 1] = 20
B[3, 1, 2] = 21
B[3, 1, 3] = 22
B[3, 2, 1] = 23
B[3, 2, 2] = 24
B[3, 2, 3] = 25
B[3, 3, 1] = 26
B[3, 3, 2] = 27
B[3, 3, 3] = 28
```

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```
Matriks C
C[1, 1, 1] = 3
C[1, 1, 2] = 5
C[1, 1, 3] = 7
C[1, 2, 1] = 9
C[1, 2, 2] = 11
C[1, 2, 3] = 13
C[1, 3, 1] = 15
C[1, 3, 2] = 17
C[1, 3, 3] = 19
C[2, 1, 1] = 21
C[2, 1, 2] = 23
C[2, 1, 3] = 25
C[2, 2, 1] = 27
C[2, 2, 2] = 29
C[2, 2, 3] = 31
C[2, 3, 1] = 33
C[2, 3, 2] = 35
C[2, 3, 3] = 37
C[3, 1, 1] = 39
C[3, 1, 2] = 41
C[3, 1, 3] = 43
C[3, 2, 1] = 45
C[3, 2, 2] = 47
C[3, 2, 3] = 49
C[3, 3, 1] = 51
C[3, 3, 2] = 53
C[3, 3, 3] = 55
```

Praktikum 10E

- Source Code

```pascal
Program penjum_matriks;

type
    Matrix = array[1..3, 1..3] of real;

var
    a,b,c: Matrix;
    i,j: integer;

begin
    writeln('buat matriks A');
    for i:=1 to 3 do
        for j:=1 to 3 do begin
            write('[',i,',',j,']=');
            readln(a[i,j]);
        end;
    writeln('buat matriks B');
    for i:=1 to 3 do
        for j:=1 to 3 do begin
            write('[',i,',',j,']=');
            readln(b[i,j]);
        end;
    writeln('Matriks A');
```

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```pascal
    for i:=1 to 3 do begin
        for j:=1 to 3 do
            write(a[i,j]:5:2,' ');
            writeln;
        end;
    writeln('Matriks B');
    for i:=1 to 3 do begin
        for j:=1 to 3 do
            write(b[i,j]:5:2,' ');
        writeln;
    end;
    writeln('Matriks C');
    for i := 1 to 3 do begin
        for j := 1 to 3 do begin
            c[i][j] := a[i][j] + b[i][j];
            write(c[i, j]:5:2, ' ');
        end;
        writeln;
    end;
    readln;
end.
```

- Output

```
Compiling Praktikum10E.pas
Linking Praktikum10E.exe
43 lines compiled, 0.1 sec, 42624 bytes code, 3396 bytes data
buat matriks A
[1,1]=9
[1,2]=8
[1,3]=7
[2,1]=6
[2,2]=5
[2,3]=4
[3,1]=3
[3,2]=2
[3,3]=1
buat matriks B
[1,1]=10
[1,2]=9
[1,3]=8
[2,1]=7
[2,2]=6
[2,3]=5
[3,1]=4
[3,2]=3
[3,3]=2
Matriks A
  9.00  8.00  7.00
  6.00  5.00  4.00
  3.00  2.00  1.00
Matriks B
10.00  9.00  8.00
  7.00  6.00  5.00
  4.00  3.00  2.00
Matriks C
19.00 17.00 15.00
13.00 11.00  9.00
  7.00  5.00  3.00
```