

Bahan Ajar

Chapter 6



Materi Pembelajaran

Matakuliah :

PEMROGRAMAN TERSTRUKTUR

Kode Matakuliah : SKO 21411

Prodi : **SISTEM KOMPUTER**

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The Increment and Decrement Operators

This statement simply takes the rvalue of counter, increments it by 1, and assigns the new value back into the rvalue of counter.

```
counter = counter + 1;
```



The Increment and Decrement Operators

Two Types of Increment Operator (++)

There are two flavors for the increment operator:

- pre-increment
- post-increment

`++counter; // pre-increment`

`counter++; // post-increment`

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Two Flavors of the Decrement Operator (--)

```
counter = counter - 1;
```

could be written :

```
counter--;
```

```
k = --c;
```

```
k = c--;
```

```
c++;
```

```
++k;
```

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Precedence of Operators

Level	Operators
1	() [] → . (dot)
2	! ~ ++ - - + (unary) - (unary) * (indirection) & (address of) (cast) sizeof
3	* (multiplication) / %
4	+ (binary) - (binary)
5	<< >>
6	< <= > >=
7	== !=
8	& (bitwise AND)
9	^
10	



The switch Statement

```
switch (expression1) { // opening brace for switch statement block
case 1:
// statements to execute when expression1 is 1
break;
case 2:
// statements to execute when expression1 is 2
break;
case 3:
// statements to execute when expression1 is 3
break;
// more case statements as needed
default:
// statements to execute if expression1 doesn't have a "case value"
break;
} // close brace for switch statement block
// This is the next statement after the switch
```

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The C Preprocessor

Directive	Action
<code>#define NAME value</code>	Ascribes the identifier NAME to the constant value.
<code>#undef NAME</code>	Removes NAME from the list of defined constants
<code>#line lineNumberValue "filename.ino"</code>	Allows the compiler to refer to any line numbers in the file named filename.ino to be referenced as line lineNumberValue from this point on by the compiler. Normally used in debugging. This is not in the Arduino C reference material, but the compiler recognizes it.
<code>#if definedConstant expression operand</code>	Conditional compilation. Example: <code>#if LED == 12</code> <code>#define VOLTS 5</code> <code>#endif</code> This is not in the Arduino C reference material, but the compiler recognizes it.
<code>#if defined NAME</code> <code>// statement(s)</code> <code>#endif</code>	Allows for conditional compilation of statements if NAME is defined. The statement block ends with #endif. This is not in the Arduino C reference material, but the compiler recognizes it.

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<pre>#if !defined NAME // statement(s) #endif</pre>	Same as #if defined, but processes statement block only if NAME is not defined. This is not in the Arduino C reference material, but the compiler recognizes it.
<pre>#ifdef</pre>	Same as #if defined. This is not in the Arduino C reference material, but the compiler recognizes it.
<pre>#ifndef</pre>	Same as #if !defined. This is not in the Arduino C reference material, but the compiler recognizes it.
<pre>#else</pre>	Can be used with #if like an if-else statement but to control compiled statements. Example: <pre>#if defined ATMEGA2560 #define BUFFER 64 #else #define BUFFER 32 #endif</pre> <p>This is not in the Arduino C reference material, but the compiler recognizes it.</p>

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<code>#elif</code>	Used with <code>#if</code> for cascading <code>#if</code> 's
<code>#include "filename.xxx"</code>	Opens the file named <code>filename.xxx</code> and reads the contents of the file into the program source code. Usually, if double quotes surround the file name, then the search for the file is in the currently active directory. If angle brackets are used (<code><filename.xxx></code>), then the search begins in some implementation-defined manner. This is not in the Arduino C reference material, but the compiler recognizes it.



Tugas Mandiri (teori):

Dimana letak perbedaan antara tipe data, variabel dan konstanta? jelaskan.

Tugas Mandiri (prakt):

Lakukan perakitan skema rangkaian LED di proteus untuk sketch Program IF-ELSE, Increment, dan Decrement dalam bahasa C Arduino.

end

