Bahan Ajar

Chapter 7

Materi Pembelajaran

Matakuliah :

PEMROGRAMAN TERSTRUKTUR

Kode Matakuliah : SKO 21411

Prodi : SISTEM KOMPUTER

Dosen Pengampu Matakuliah:

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Using a for Loop

The general syntax structure of a for loop is as follows:

```
for (expression1; expression2; expression3) {
        // for loop statement body
}
// the first statement following the for loop structure
```

For example, you may see something like:

```
for (k = 0, j = 1; k < 1000; k++) {
```

where j is initialized to 1 as part of expression1. You can also move the definition and initialization into expression1, as in:

```
for (int k = 0; k < 1000; k++) {
```

You can have a comma-delimited list of subexpressions, as in:

```
for (k = 0; k < 1000; k++, j--) {
```

The while Loop

The second type of loop structure you will examine is the while loop. The syntax of the while loop is:

```
while (expression2) { // Statements in the loop body
} // End of while statement block
```

The do-while Loop

The third type of loop structure is the do-while loop. The syntax is:

```
do {
        // Loop body statements
} while (expression2);
```

```
int k = 1001;
do {DoSomethingCool(k);
k++;
} while (k < 1000);
```

The break Statement

```
#define MAXVATCOUNT 200
#define GOALTEMPERATURE 160
// Some statements...
int vatTemperature;
int counter = 0;
loop() {
        while (counter < MAXVATCOUNT) {
        vatTemperature = ReadVatTemp(counter);
        if (vatTemperature == GOALTEMPERATURE) {
        break;
        }
```

```
 counter++;
 if (counter == MAXVATCOUNT)
        counter = 0;
 }
 AddChemicals(counter);
 if (counter < MAXVATCOUNT) {
 counter++;
 } else {
        counter = 0; // Just in case this is the last vat
        }
}
```

The continue Statement

```
#define MAXVATCOUNT 200
#define GOALTEMPERATURE 160
// Some statements...
int vatTemperature;
int counter = 0;
loop() {
 while (counter <= MAXVATCOUNT) {
 vatTemperature = ReadVatTemp(counter);
 if (vatTemperature != GOALTEMPERATURE) { // Big
difference here...
 counter++;
```

The continue Statement

```
 if (counter > MAXVATCOUNT)
counter = 0;
continue;
}
AddChemicals(counter);
if (counter < MAXVATCOUNT) {
counter++;
} else {
counter = 0; // Just in case this is the last vat
}
}
}
```

Loops and Coding Style

The second question is: Should I place the opening brace of the loop statement body on the same line as the loop keyword (e.g., for, while), or should I drop it down to the next line. That is, should you use:

```
for (k = 0; k < 1000; k++) {
or
for (k = 0; k < 1000; k++)
{
```

Tugas Mandiri (teori):

Jelaskan bebrapa fungsi (Looping) dalam pemrograman C Arduino?. berikan contohnya.

Tugas Mandiri (prakt):

Lakukan perakitan skema rangkaian LED di proteus untuk sketch Looping dalam bahasa C Arduino.

end