Bahan Ajar

Chapter 11

Materi Pembelajaran

Matakuliah :

PEMROGRAMAN TERSTRUKTUR

Kode Matakuliah : SKO 21411

Prodi : SISTEM KOMPUTER

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Local Scope

A variable that has local scope has life and visibility from the point of its definition to the end of the function in which it is defined. The shaded illustrates local scope for variable x.

```
void loop()
{
  int x = 5;

  if (x < MAXVAL) {
   int temp;

   temp = x * 100;
  }
  Serial.print("The value of temp is: ");
  Serial.println(temp);
  if (k++ > 10)
     exit(0);
}
```

Local Scope

What would happen if you moved the definition of x as shown in the code fragment below? (Note how we have

```
void loop()
{
 if (x < MAXVAL) {
 int temp;
 temp = x * 100;
 }
 if (k++ > 10)
 exit(0);
 int x = 5;
}
```

Global Scope

The global scope for k is the shaded area in Figure next. This means that any statement that appears after the definition of k has access to k; k is “globally” accessible to all functions and statement blocks within the source file.

```
/**
  Program: Demonstrate the concept of local scope

  Author: Dr. Purdum, Aug. 9, 2012
**/
#define MAXVAL 1000

int k = 0;

void setup()
{
  Serial.begin(9600);
}


void loop()
{
  int x = 5;

  if (x < MAXVAL) {
   int temp;

   temp = x * 100;
  }
  Serial.print("The value of temp is: ");
  Serial.println(temp);
  if (k++ > 10)
     exit(0);
}
```

Scope and Storage Classes

Arduino C recognizes four storage classes: auto, register, static, and extern. All four are keywords in Arduino C and cannot be used as variable names. If you try to define variables named:

```
int register;   // Bad names...
int auto;
```

then the compiler issues an error message:

```
error: declaration does not declare anything
```

Clearly, the compiler does recognize both as keywords and will not let you use them as a variable name

Scope and Storage Classes

The static Storage Class

Consider the following code fragment:

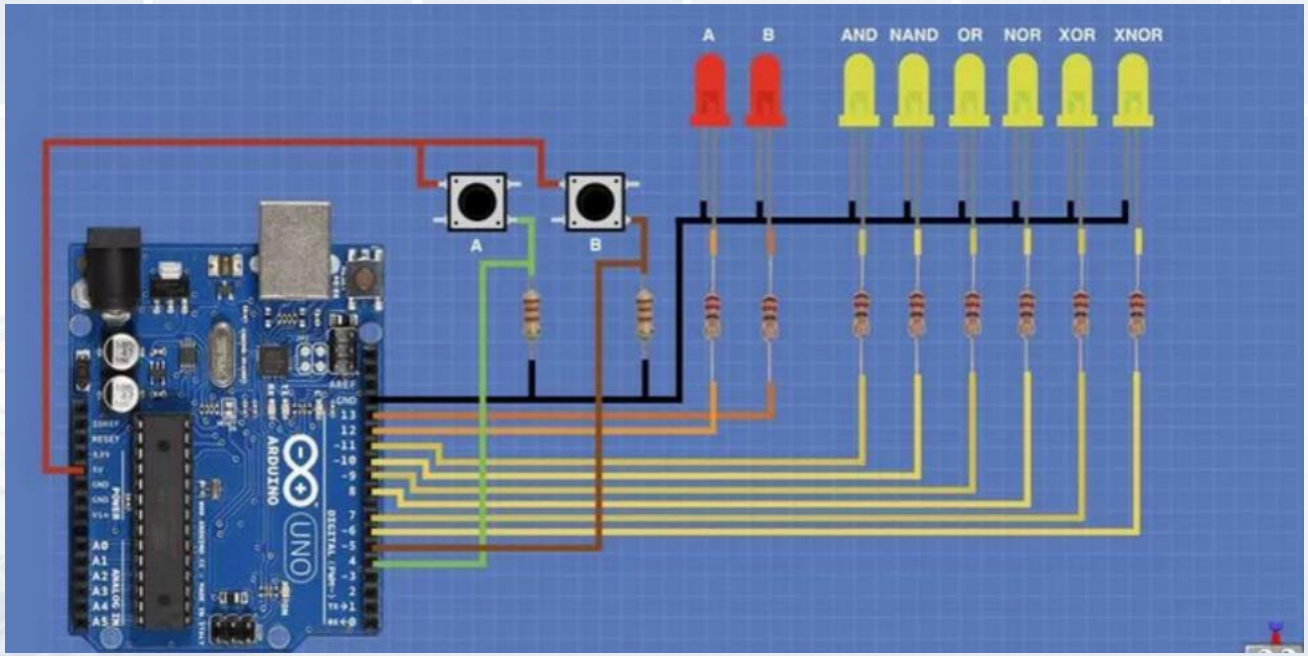
```
int MyCounter()
{
 static int counter = 0;
 // do some stuff...
 return ++counter;
}
```

Tugas Mandiri (teori):

1. What are the scope levels in C?
2. What is the default scope level for a function?
3. What is the default storage class for a function.
4. What are the C storage classes?

Tugas Mandiri (prakt):

Lakukan perakitan skema rangkaian LED di proteus seperti gambar berikut dan gunakan switch button untuk menghidupkan LED.



end