

# BASIC +89C2051-12 + Letry robot

Author: chiping Tsao www.letry.com.tw

These following programs are based on Bascom Basic , Bascom is basic compiler for AVR and 8051. MCS-Electronics company offer demo version on, [http://www.mcselec.com/index.php?option=com\\_docman&task=cat\\_view&gid=98&Itemid=54](http://www.mcselec.com/index.php?option=com_docman&task=cat_view&gid=98&Itemid=54) The limit of machine code memory is 2K for demo version Bascom .

All the following 10 programs can be compiled with demo version Bascom.

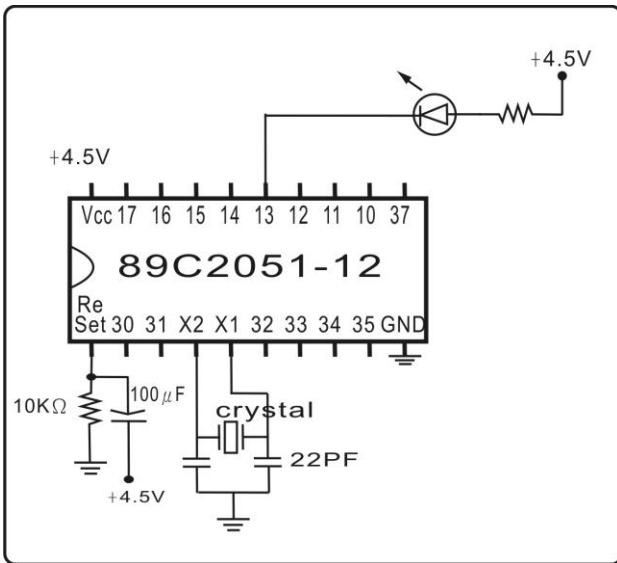


Figure 1 Exercise 1 to 5

Ex. 1 LED shine 2 seconds

```
P1.3 = 0
Wait 2
P1.3 = 1
End
```

Ex. 2

LED on , off , on , off .....(1 second/each)

```
Do
  P1.3 = 0
  Wait 1
  P1.3 = 1
  Wait 1
```

```
Loop
End
```

Ex. 3

LED on , off, on, off .....(0.2 second/each)

```
Do
  P1.3 = 0
  Waitms 200
  P1.3 = 1
  Waitms 200
```

```
Loop
End
```

Ex. 4

LED on..off..on..off.. (5 cycles)

```
Dim N As Byte
For N = 1 To 5
  P1.3 = 0
  Wait 1
  P1.3 = 1
  Wait 1
Next N
End
```

Ex. 5

LED on 1 second , off , on 2 seconds, off, on 3 seconds, off, on 4 seconds, off, on 5 seconds ,off

```
Dim N As Byte
For N = 1 To 5
  P1.3 = 0
  Wait N
  P1.3 = 1
  Wait 1
Next N
End
```

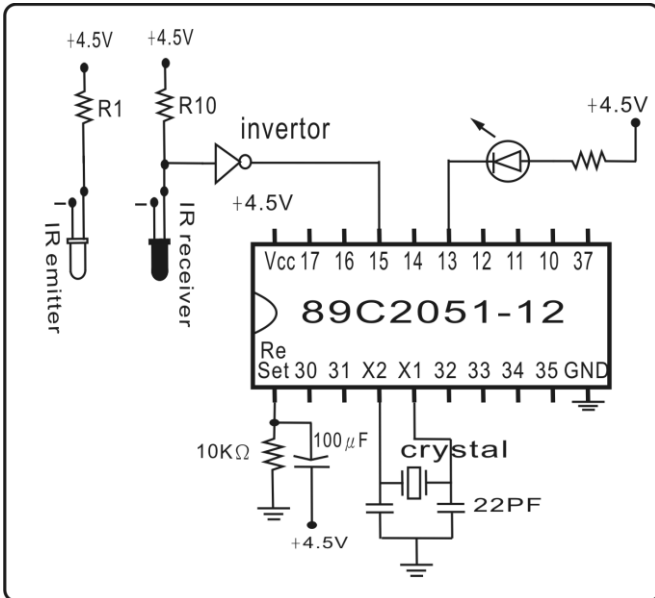


Figure 2 Exercise 6,7

Ex. 6 LED shine if Infrared sensor detects object.

```

Do
  If P1.5 = 1 Then
    P1.3 = 0
  Else
    P1.3 = 1
  End If
Loop
End

```

Ex. 7 LED flashes until infrared sensor detects object,

```

Do
  P1.3 = 0
  Wait 1
  P1.3 = 1
  Wait 1
Loop Until P1.5 = 1
End

```

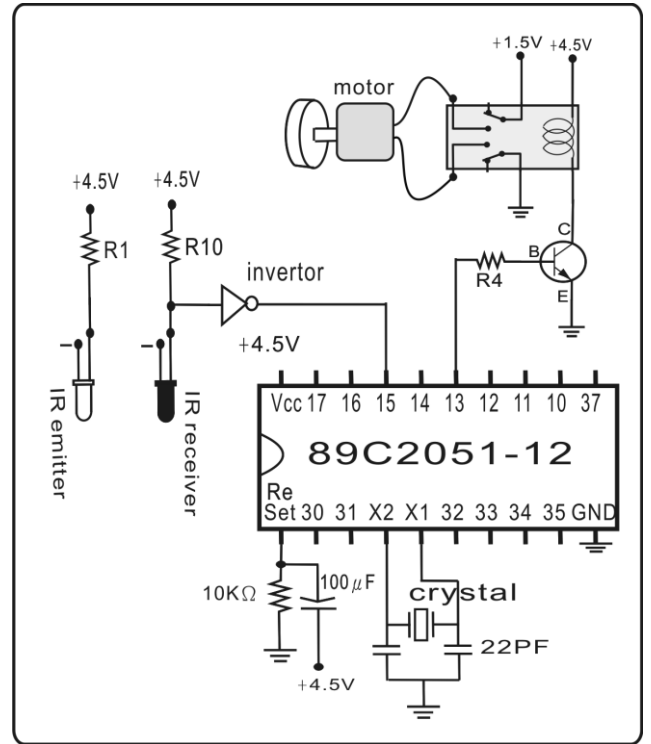


Figure 3 Exercise 8

This program is the same as exercise 6

Ex. 8 The motor stop if IR detects something.

```

Do
  If P1.5 = 1 Then
    P1.3 = 0
  Else
    P1.3 = 1
  End If
Loop
End

```

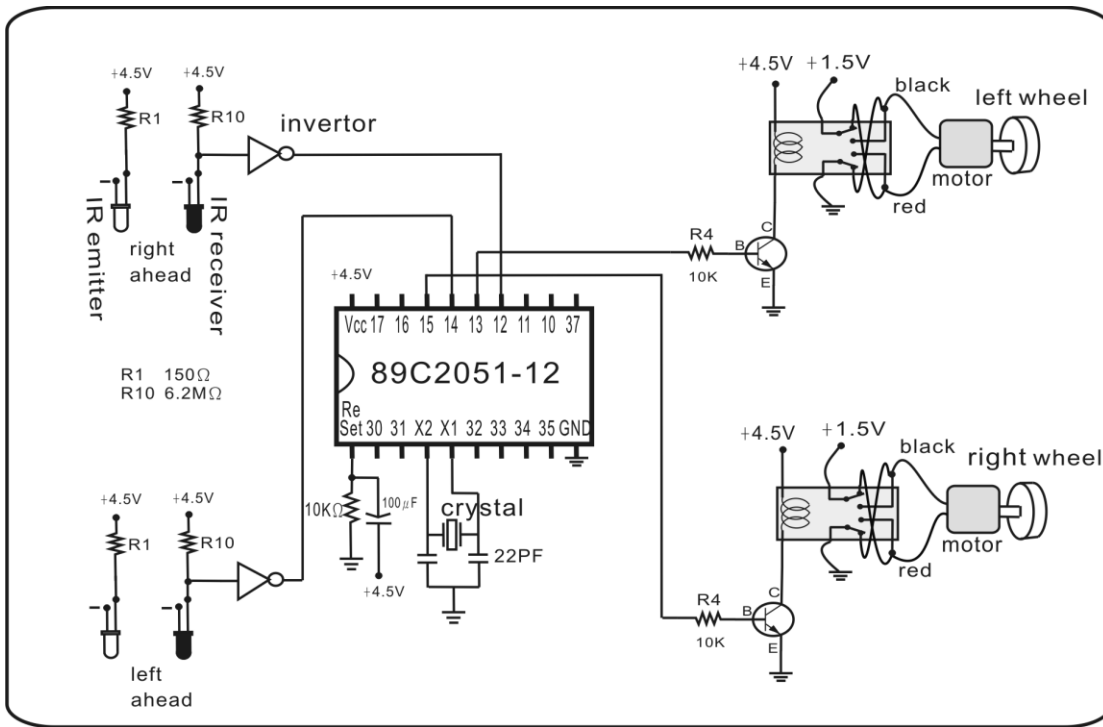


Figure 4 Exercise 9 ,10

Ex. 9 Avoid obstacle

The left motor reverses if right IR detects obstacle  
 The right motor reverses if left IR detects obstacle

```

Do
  If P1.2 = 1 Then
    P1.3 = 1
  Else
    P1.3 = 0
  End If

  If P1.4 = 1 Then
    P1.5 = 1
  Else
    P1.5 = 0
  End If
Loop
End
  
```

Ex. 10 Backward 2 seconds then turn if IR detects obstacle

```

Do
  If P1.2 = 1 Then
    P1.3 = 1
    P1.5 = 1
    Wait 2
    P1.5 = 0
    Wait 1
    P1.3 = 0
  End If

  If P1.4 = 1 Then
    P1.3 = 1
    P1.5 = 1
    Wait 2
    P1.3 = 0
    Wait 1
    P1.5 = 0
  End If
Loop
End
  
```