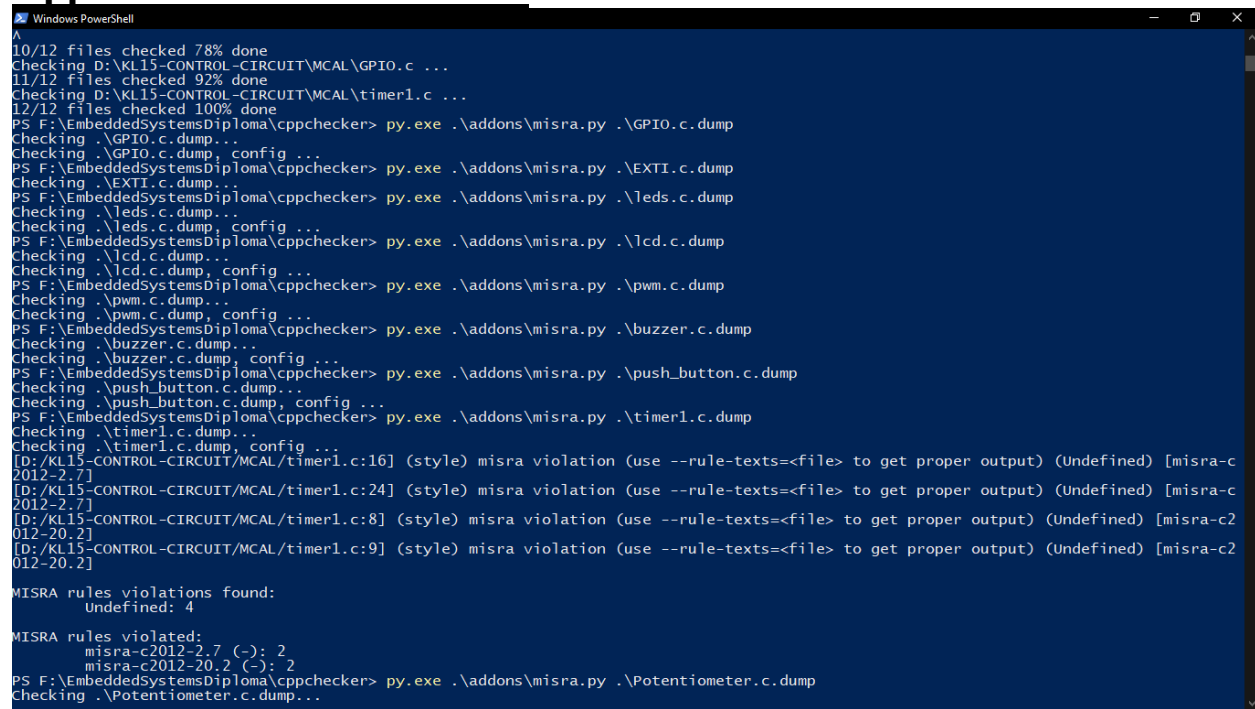


# KL15 CONTROL CIRCUIT (Misra-2012)

After checking our application using cppchecker tool and modifying the code to achieve the MISRA 2012 rules, we can say that our application has only five MISRA 2012 violations as you can see from the screenshot.

## Cppchecker tool screenshot:



```
Windows PowerShell
A
10/12 files checked 78% done
Checking D:\KL15-CONTROL-CIRCUIT\MCAL\GPIO.c ...
11/12 files checked 92% done
Checking D:\KL15-CONTROL-CIRCUIT\MCAL\timer1.c ...
12/12 files checked 100% done
PS F:\EmbeddedSystemsDiploma\cppchecker> py.exe .\addons\misra.py .\GPIO.c.dump
Checking .\GPIO.c.dump...
Checking .\GPIO.c.dump, config ...
PS F:\EmbeddedSystemsDiploma\cppchecker> py.exe .\addons\misra.py .\EXTI.c.dump
Checking .\EXTI.c.dump...
PS F:\EmbeddedSystemsDiploma\cppchecker> py.exe .\addons\misra.py .\leds.c.dump
Checking .\leds.c.dump...
Checking .\leds.c.dump, config ...
PS F:\EmbeddedSystemsDiploma\cppchecker> py.exe .\addons\misra.py .\lcd.c.dump
Checking .\lcd.c.dump...
Checking .\lcd.c.dump, config ...
PS F:\EmbeddedSystemsDiploma\cppchecker> py.exe .\addons\misra.py .\pwm.c.dump
Checking .\pwm.c.dump...
Checking .\pwm.c.dump, config ...
PS F:\EmbeddedSystemsDiploma\cppchecker> py.exe .\addons\misra.py .\buzzer.c.dump
Checking .\buzzer.c.dump...
Checking .\buzzer.c.dump, config ...
PS F:\EmbeddedSystemsDiploma\cppchecker> py.exe .\addons\misra.py .\push_button.c.dump
Checking .\push_button.c.dump...
Checking .\push_button.c.dump, config ...
PS F:\EmbeddedSystemsDiploma\cppchecker> py.exe .\addons\misra.py .\timer1.c.dump
Checking .\timer1.c.dump...
Checking .\timer1.c.dump, config ...
[D:\KL15-CONTROL-CIRCUIT\MCAL\timer1.c:16] (style) misra violation (use --rule-texts=<file> to get proper output) (Undefined) [misra-c
2012-2.7]
[D:\KL15-CONTROL-CIRCUIT\MCAL\timer1.c:24] (style) misra violation (use --rule-texts=<file> to get proper output) (Undefined) [misra-c
2012-2.7]
[D:\KL15-CONTROL-CIRCUIT\MCAL\timer1.c:8] (style) misra violation (use --rule-texts=<file> to get proper output) (Undefined) [misra-c2
012-20.2]
[D:\KL15-CONTROL-CIRCUIT\MCAL\timer1.c:9] (style) misra violation (use --rule-texts=<file> to get proper output) (Undefined) [misra-c2
012-20.2]

MISRA rules violations found:
Undefined: 4

MISRA rules violated:
misra-c2012-2.7 (-): 2
misra-c2012-20.2 (-): 2
PS F:\EmbeddedSystemsDiploma\cppchecker> py.exe .\addons\misra.py .\Potentiometer.c.dump
Checking .\Potentiometer.c.dump...
```

```

Windows PowerShell
PS F:\EmbeddedSystemsDiploma\cppchecker> py.exe .\addons\misra.py .\timer1.c.dump
Checking .\timer1.c.dump...
Checking .\timer1.c.dump, config ...
[D:/KL15-CONTROL-CIRCUIT/MCAL/timer1.c:16] (style) misra violation (use --rule-texts=<file> to get proper output) (Undefined) [misra-c2012-2.7]
[D:/KL15-CONTROL-CIRCUIT/MCAL/timer1.c:24] (style) misra violation (use --rule-texts=<file> to get proper output) (Undefined) [misra-c2012-2.7]
[D:/KL15-CONTROL-CIRCUIT/MCAL/timer1.c:8] (style) misra violation (use --rule-texts=<file> to get proper output) (Undefined) [misra-c2012-20.2]
[D:/KL15-CONTROL-CIRCUIT/MCAL/timer1.c:9] (style) misra violation (use --rule-texts=<file> to get proper output) (Undefined) [misra-c2012-20.2]

MISRA rules violations found:
  Undefined: 4

MISRA rules violated:
  misra-c2012-2.7 (-): 2
  misra-c2012-20.2 (-): 2
PS F:\EmbeddedSystemsDiploma\cppchecker> py.exe .\addons\misra.py .\Potentiometer.c.dump
Checking .\Potentiometer.c.dump...
Checking .\Potentiometer.c.dump, config ...
PS F:\EmbeddedSystemsDiploma\cppchecker> py.exe .\addons\misra.py .\Timers.c.dump
Checking .\Timers.c.dump...
Checking .\Timers.c.dump, config ...
PS F:\EmbeddedSystemsDiploma\cppchecker> py.exe .\addons\misra.py .\main.c.dump
Checking .\main.c.dump...
Checking .\main.c.dump, config ...
PS F:\EmbeddedSystemsDiploma\cppchecker> py.exe .\addons\misra.py .\ADC.c.dump
Checking .\ADC.c.dump...
Checking .\ADC.c.dump, config ...
[D:/KL15-CONTROL-CIRCUIT/MCAL/ADC.c:113] (style) misra violation (use --rule-texts=<file> to get proper output) (Undefined) [misra-c2012-2.7]

MISRA rules violations found:
  Undefined: 1

MISRA rules violated:
  misra-c2012-2.7 (-): 1
PS F:\EmbeddedSystemsDiploma\cppchecker>

```

| Rule-number | Number of violations | Rule-Description  | Our-violations  | Classification             |
|-------------|----------------------|---|---|----------------------------|
| R.2.7       | 3 times              | There should be no unused parameters in functions   | Because of using the ISR(INT-vect){ }                                     | Advisory not mandatory     |
| R.20.2      | 2 times              | The ', " or \ characters and the /* or // character sequences shall not occur in a header file name | Because of using<br>#include <avr\interrupt.h><br><br>#include <avr\io.h> | Required but not mandatory |