Bugfighter C/C++

How to detect a buffer overflow in an array

1. Make a copy of the project directory:

Ex: Ex02_Multiple_Buffer \rightarrow Ex02_Multiple_Buffer_mod





2. Open both projects with your compiler



```
#include "stdio.h"
#include <iostream>
#include <cstdlib>
using namespace std;
void main(int argc, char *argv[])
{
    /* Try this code */
    /* Run it */
    /* Then try with BugFigher!!*/
    /* and look in the exe directory, */
    /* you will find "Errors.txt" with the errors report */
    /* It will be very easy in this way to debug!! */
    int y[10][10][10];
    y[0][3][4] = 5;
    y[10][3][4] = 5;
    y[3][10][7] = 11;
    y[3][2][10] = 8;
    y[-3][6][4] = 5;
   y[3][-4][9] = 12;
    y[3][5][-2] = 7;
    /* and so on... */
    printf("Hello World!");
    return;
}
```

3. Run the original code:

No exception will be detected

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/* you will find "Errors.txt" with the errors report */	
/* It will be very easy in this way to debug!! */	
int y[10][10][10];	
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/* and so on */	
<pre>printf("Hello World!");</pre>	
return;	
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4. Open Bugfighter C/C++

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y[10][3][10][7] = 11;			
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5. Select the directory with the original code:

Ex: "C:\BugFighter-C++\Console_Examples\Ex02_Multiple_Buffer"



6. Select the C/C++ code file that must be tested:



7. Select the destination directory with the modified code: Ex: "C:\BugFighter-C++\Console_Examples\Ex02_Multiple_Buffer_mod"

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8. Select "Copy Project":

All files will be copied from original directory to the destination directory: Ex02_Multiple_Buffer \rightarrow Ex02_Multiple_Buffer_mod

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The file **"main.cpp"** will contain the **test code**.

9. The destination project has been updated: Select "Yes" to reload the project



10. Select "Reload"



11. Select "Run"



12. During run-time the test code will detect the error and write the message on the console:

Error n.

1

Maximum allowed index for "y": 9 Index name : 10 Index value : 10 file : C:\BugFighter-C++\Console_Examples\Ex02_Multiple_Buffer\main.cpp line : 23





13. During run-time the test code will detect the error and write the message in a text file "Errors.txt":

Error n.

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Maximum allowed index for "y": 9 Index name : 10 Index value : 10 file : C:\BugFighter-C++\Console_Examples\Ex02_Multiple_Buffer\main.cpp line : 23



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15. Correct the index

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v[0][3][4] = 5	IsInline False			
v[9][4][4] = 5;	IsOverloaded False			
$y[3][10][7] = 11;$ $y[10][3][4] \rightarrow y[9][3][4]$	IsSealed False			
y[3][2][10] = 8;	TypeString void			
y[-3][0][4] = 5; y[3][-4][9] = 12				
y[3][5][-2] = 7;				
/* and so on */				
<pre>printf("Hello World!");</pre>				
return;				
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16. Select "Copy Project"

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	y[3][2][10] = 8;								I
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17. Select "Yes" to reload the project



18. Select "Reload"



19. Select "Run"





21. Correct the index

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<pre>int y[10][10][10];</pre>	IsInjected False					
	IsInline False					
y[0][3][4] = 5;	IsOverloaded False					
y[3][9](7] = 11;	IsSealed False					
$y[3][2][10] = 8;$ $y[3][10][7] \rightarrow y[3][9][7]$	IsTemplate False					
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y[3][-4][9] = 12; y[3][5][-2] = 7:						
y[]][][2][2][2],						
/* and so on */						
<pre>printf("Hello World!"):</pre>						
return;						
}						
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22. Repeat from step 16







