Using the FoxPro module from ACS.NET library

AcsLib.NET.dll

AcsCppLib.NET.dll (for C++ support)

- `#include "FoxPro.NET.h"` and create a CFoxProBuffer instance (not a pointer)
  - Pass a file path to the constructor

- Iterate through records using a for loop and the CFoxProRecord class to read/write data

```
CFoxProBuffer fpBuffer("C:\\path\\file.dbf");
RecordArray fpRecords = fpBuffer.GetRecords();
for (int index = 0; index < fpBuffer.NumRecords(); index++)
{
    // current record
    CFoxProRecord currentRecord = fpRecords[index];

    // do stuff with currentRecord
    // see FoxPro.NET.h for full interface details
}
```

- Call `fpBuffer.Save()` to commit changes to the DBF file (a backup is created in the *.backup* folder in the executable's directory)

- Refer to FoxPro.NET.h for classes and type definitions.

- See example below for a simple but complete usage case. Includes project configuration for linking to the DLL

Example: Code

```cpp
/*-------------------------------------------------
 * Example usage of FoxPro classes in native C++
 * -------------------------------------------------*/
#include <stdio.h>
#include "FoxPro.NET.h"

using namespace AcsNetLib::FoxPro;

int main()
{
    // create a CFoxProBuffer instance (give it a file path)
    // relative paths work (i.e. if program EXE is in C:\Inv\Bin,
    //   you can say “..\\Invdata\\sys.dbf”)
    CFoxProBuffer fpBuffer("C:\\Inv\\Invdata\\sys.dbf");

    /*--------------------------
        accessing DBF records
    ---------------------------*/
    RecordArray record_array = fpBuffer.GetRecords();

    // always exit loop at NumRecords()!!
    // using sys.dbf for this example
    //  - Show all lines at least 100 inches wide
    printf("Lines at least 100 inches in width:\n");
    for (int index = 0; index < fpBuffer.NumRecords(); index++)
    {
        // current record
        CFoxProRecord record = record_array[index];

        // check the width; show lines with maxlen >= 100
        char* line_name = record.Get("descr");
        int line_width = atoi(record.Get("maxlen"));
        if (line_width >= 100)
            printf("%s: %d inches\n", line_name, line_width);

        /*-------------------------------------------------
            modifying the DBF
            example - change every line name to ACS
        -------------------------------------------------*/
        record.Set("descr", "ACS");
    }

    // write fpBuffer changes to disk
    fpBuffer.Save();

    // pause, exit program
    getchar();
    return 0;
}
```

Notes

Namespace
All ACS.NET classes are in the `AcsNetLib` namespace. Each module (`SQL`, `FoxPro`, etc.) has a sub-namespace under that.

`fpBuffer.GetRecords()`
- returns a RecordArray (standard pointer-based array of `CFoxProRecords`)

`record.Get(char* field)`
- returns a primitive string (`char*`) with the record’s data in the specified field
- if an `int` value is required, conversion must be handled separately (use `atoi(record.Get(“field”))`, for example)

`record.Set(char* field, char* value)`
- field: which field (column) to update in the DBF
- value: new value for this column

`record.Save()`
- commits all changes to the `CFoxProBuffer` to its file on disk
- saves a backup in the executable’s directory under the *.backup* folder
- Only necessary when exiting program, or if multiple `CFoxProBuffer` instances are operating on the same file
- .NET runtime automatically calls this through the destructor (preventing data loss on a Winvent crash)

Example: Results

Sys - Microsoft Visual FoxPro

File Edit View Tools Program Table Window Help

Descr	Type	Maxlen	Front	Back	Length	Num_zones	Recirc
TK	S	114	10	11	312	3	
BK	S	180	10	11	312	3	
90	Is	114	1	12	216	3	
91	Is	180	1	12	216	3	
1	R	96	2	1	576	6	
2	R	96	2	1	576	6	
3	R	96	2	1	576	6	
4	R	96	2	1	576	6	
5	R	96	2	1	576	6	
6	R	96	2	1	576	6	
7	R	96	2	1	576	6	
8	R	96	2	1	576	6	
9	R	96	2	1	576	6	
31	R	96	3	2	384	4	
32	R	96	3	2	384	4	

sys.dbf before running example code

Sys - Microsoft Visual FoxPro

File Edit View Tools Program Table Window

Descr	Type	Maxlen	Front	Back	Length	Num_zones	F
ACS	S	114	10	11	312	3	
ACS	S	180	10	11	312	3	
ACS	Is	114	1	12	216	3	
ACS	Is	180	1	12	216	3	
ACS	R	96	2	1	576	6	
ACS	R	96	2	1	576	6	
ACS	R	96	2	1	576	6	
ACS	R	96	2	1	576	6	
ACS	R	96	2	1	576	6	
ACS	R	96	2	1	576	6	
ACS	R	96	2	1	576	6	
ACS	R	96	2	1	576	6	
ACS	R	96	2	1	576	6	
ACS	R	96	3	2	384	4	

sys.dbf after running example code

C:\Users\bfairburn\workspace\VS2017\...

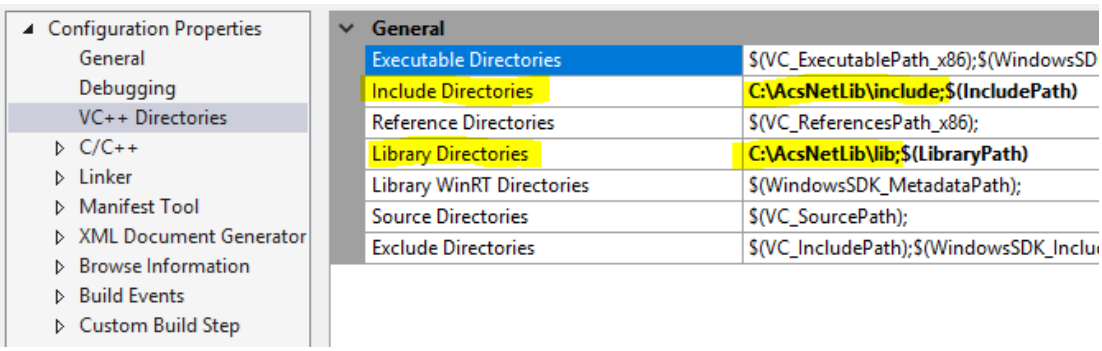
```
Lines at least 100 inches in width:
TK: 114 inches
BK: 180 inches
90: 114 inches
91: 180 inches
80: 204 inches
```

example program output

Example: Project Configuration for Linking DLL

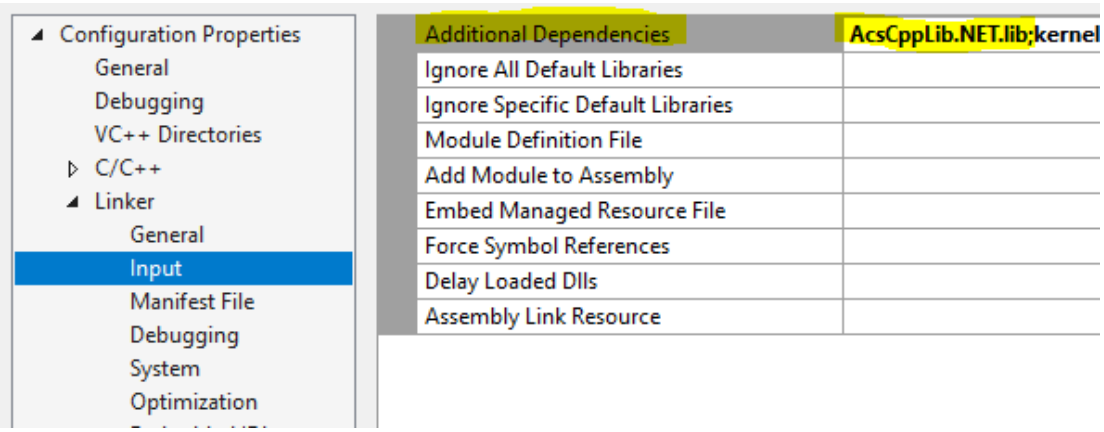
Assuming ACS.NET library lives at C:\AcsNetLib

Right click on project name in the Solution Explorer > left click *Properties*



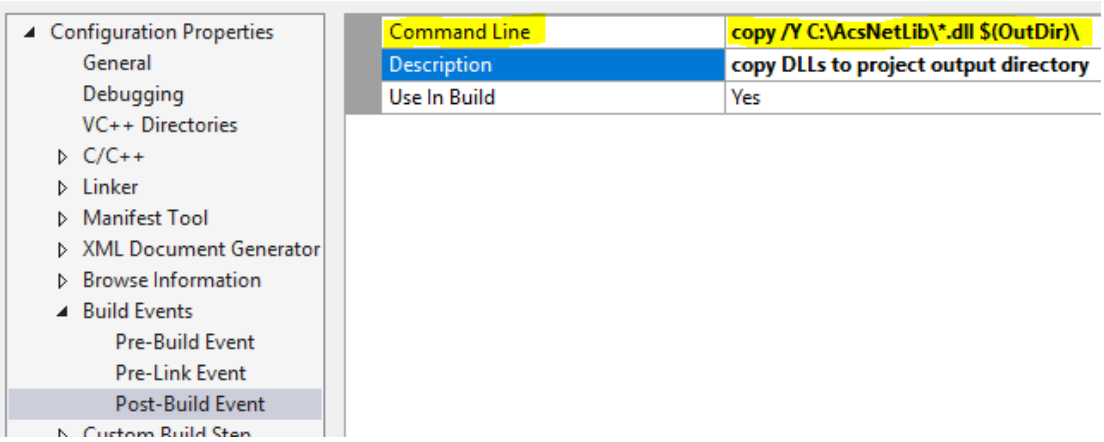
VC++ Directories

- update the highlighted areas as shown



Linker > Input

- add *AcsCppLib.NET.lib* to *Additional Dependencies*



Build Events > Post-Build Event

- Put the highlighted command in the *Command Line* property. This way the ACS.NET DLLs will automatically be pulled in to the build output.

Include FoxPro.NET.h

In C++ projects that need to use FoxPro classes, right click *Header Files > Add > Existing Item…* and choose the header – *C:\AcsNetLib\include\FoxPro.NET.h* in this example. This isn't necessary but helps keep the project organized.

Class implementations are handled by the DLL. *FoxPro.NET.h* is the only source file that needs to be added to a C++ project.