MIXED MODE WINDOWS PROGRAMMING
USING C# , C++/CLI and ANSI C/C++

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With Version 2.0 of the .net framework , MS released a new dialect of C++ targetting the .NET platfrom by the name C++/CLI.

Let us write a Hello World program in C++/CLI

```
///////////////////////////////
// Pure_CLI.cpp
// A C++/CLI Hello World...program
//
//
// Written by Praseed Pai K.T.
//          http://praseedp.blogspot.com
//
//
// @ the Visual Studio command prompt
//
// cl /clr Pure_CLI.cpp
// Pure_CLI
//
//

using namespace System;

int main(array<String^>^ args )
{
    Console::WriteLine("Hello World....");

}
```

The above program uses C++/CLI language to spit the string hello world...to the console...!. A computationally (well we are not computing here !!!) equivalent program in C# is given below.

```
///////////////////////////////////
// Dump_cmd.cs
//
// A C# program to print "Hello World "
//
// Written by Praseed Pai K.T.
//          http://praseedp.blogspot.com
//
```

```
//
// csc Dump_cmd.cs
// Dump_cmd
//
//

using System;

class DevConDemo {

  public static void Main(String [] args ) {

      Console.WriteLine("Hello World....");

  }

}
```

For the sake of completeness, i will write an ANSI C/C++ (C subset) program which does the same

```
/////////////////////////////////
//Ansi_dump_cmd.cpp
//
//A ANSI C/C++ program to print the
//string "Hello world..."
//
//
//Written by Praseed Pai K.T.
//          http://praseedp.blogspot.com
//
//cl Ansi_dump_cmd.cpp
//Ansi_dump_cmd
//
//

#include <stdio.h>

int main( int argc , char **argv )
{

      printf("%s\n","Hello World...");
}
```

 Now that we know , how C++/CLI , C# and ANSI C/C++ program are written , Let us widen the net by writing a program to dump the command line arguments !

```cpp
//////////////////////////////
// Dump_Cmd.cpp
// A C++/CLI Hello World...program
// to dump the command line arguments
// to the screen...
//
//
//
// Written by Praseed Pai K.T.
//          http://praseedp.blogspot.com
//
// @ the visual studio command prompt
//
// cl /clr Dump_cmd.cpp
// Dump_cmd 1 2 3
//

using namespace System;

//////////////////////////////////
//
//
// User entry point....
//
//
//

int main(array<String^>^ args )
{
    //////////////////////////////////////
    //
    // in a ANSI C/C++ program ,command line parameters
    // are of the type char ** (char **argv or char *argv[])
    // and by default argv[0] is the executable name..
    //
    // C++/CLI ( and C# ) won't give the executable name as
    // the first parameter

    if ( args->Length == 0 ) {
        Console::WriteLine("No Command line parameters");
        return 0;
    }


    int rs = args->Length;
    for(int i=0; i<rs; ++i ) {
        Console::WriteLine("{0} ",args[i]->ToUpper() );
    }

}
```

```
/////////////////////////////////////
// CmdLineDump.cs
//
// A Program to dump the command line
// arguments @ the console
//
// Written by Praseed Pai K.T.
//           http://praseedp.blogspot.com
//
// csc CmdLineDump.cs
// CmdLineDump.cs
//
//
//
using System;

class DevConDemo {

 public static void Main(String [] args ) {

     if ( args.Length == 0 )
     {
       Console.WriteLine("Hello World....");
       return;
     }

     int cmd = args.Length;

     for(int i=0;i<cmd;++i )
     {
        Console.WriteLine("{0}",args[i]);

     }


 }


}
```

```
/////////////////////////////
//CmdLineDump.cpp
//
//A ANSI C/C++ program to dump the command
```

```
//line arguments....
//
//
//Written by Praseed Pai K.T.
//           http://praseedp.blogspot.com
//
//cl CmdLineDump.cpp
//CmdLineDump.cpp
//
#include <stdio.h>

int main(int argc , char **argv )
{
    if ( argc == 1 ) {
        printf("%s\n","No command line arguments");
        return 0;
    }

    int cmd = argc;

    for(int i=1; i<cmd; ++i )
    {
      printf("%s\n",argv[i]);
    }


}
```

Let us do something more useful than these program. The following program will compute the average of series of numbers....