

UNIVERSITY *of* MARYLAND

UNIVERSITY COLLEGE - *Asian Division*

Project 1: Entering and Running a C++ Program

Objective:

The purpose of this lab is to gain familiarity with the Visual C++ programming environment by entering, debugging, and running the listed program. Lab report is due the last class of the second week.

Procedure:

Initialization

1. Start Visual C++ by double clicking on it's icon.
2. Insert a diskette into the appropriate floppy disk drive.
3. Create a new workspace by going to *File* menu then *New*. On the *Projects* tab click the *Win32 Console Application*. Enter a project name such as *Project1* and select *A:* as the location. Select *An Empty Project* on the next dialog box and click the *Finish* button.
4. Select the *Project / Settings* menu item and then the *Link* tab. Unclick the *Generate debug info*.
5. Create new source code window by going to *File* menu then *New*. Click the *Files* tab and then *C++ Source File*. Enter the file name *progSize* and select the location to be drive *A:*
The file is named *progSize.cpp* is shown on the title bar.

Code Entry

6. The Editor is integrated in the Visual C++ programming environment. Enter code using the Editor by simply clicking on the window with the title of your program and begin entering code at the blinking cursor.
7. Try moving the cursor after some text has been entered by using the arrow keys. You can also reposition the blinking cursor in the text by moving the mouse cursor to intended place in the text and clicking once. To over-write existing text press the *Insert* key. To insert text at the blinking cursor, press the *Insert* key a second time.
8. The *Backspace* key will delete characters to the left of the blinking cursor and the *Delete* key will delete characters to the right of the blinking cursor.
9. Using the *Edit* menu you can *Undo* (*Ctrl Z*), *Copy* (*Ctrl C*), *Cut* (*Ctrl X*), or *Paste* (*Ctrl V*) text anywhere or between open editor files.
10. Enter all code listed below including your name at the appropriate place.
11. After all code has been entered, click on the *File* then *Save All* menu items.
This will save all text and changes to the listed files.

Debug, Run, and Help

12. Attempt to compile the program by clicking on *compile* on the tool bar icon or go to the *build* menu and click on *compile*. This will compile your program.
If you have no errors (warnings are OK) then run your program.
13. Syntax errors will be shown in the message window located below the editor window. Clicking on one of the error messages will take you to the line of code where the compiler believes an error occurs. The error could also be due to earlier coding errors.
Warning messages contain information but will not prevent program from running.
14. Move the cursor to various key words (e.g. *sizeof*, *int*, *double*, *cout*) and press the *F1* key. This brings up the MSDN help file for that key word. Investigate using the help file further.

Project Report

15. After you have verified proper execution and removed all bugs print out the source code, print the source code by going to the menu item *File | Print*
16. Select the output window and save its image to the clipboard by pressing the Alt and PrintScreen keys simultaneously. Paste the image into a Word Document and save this document. If this does not work, Print out the contents of the output window by pressing simultaneously the Shift PrintScreen [PrtSc] keys.
17. Create a Project Report with the following items and submit the last class of the second week: Cover Page (Course, Project Number and Name, Your Name, Date), Source Code listing, Output Window image, Explanation of the how the program works, the output window results, and a simple flow chart describing the major sections of the program.

```

/*****
/* PROJECT 1: THE FIRST PROGRAM          */
/*****
/* This program prints out the size of several */
/* Different data types in bytes.          */
/*                                          */
/* Programmer: (Your Name?)              */
/* CMIS 102                               */
/* Date: ?                               */
/*****
#include <iostream.h> // Note: Required to access cout function
int main(void) // Note: ANSI C requires int before main()
{
    // DECLARATION SECTION
    short snSmallInteger;
    int nStdInteger, nSize;
    float fRealNumber;
    char cLetter;

    // INITIALIZATION SECTION
    nStdInteger = 100000;
    fRealNumber = -0.000123456789;
    cLetter = 'A';

    // PROCESSING SECTION
    snSmallInteger = nStdInteger;
    nSize = sizeof(snSmallInteger);

    cout << "Short Integer = " << snSmallInteger;
    cout << " and is " << nSize << " Bytes." << endl;

    cout << "Standard Integer = " << nStdInteger;
    cout << " and is " << sizeof(nStdInteger) << " Bytes." << endl;

    cout << "Real Number = " << fRealNumber;
    cout << " and is " << sizeof(fRealNumber) << " Bytes." << endl;

    nSize = sizeof(cLetter);
    cout << "Letter = " << cLetter;
    cout << " and is " << sizeof(cLetter) << " Bytes." << endl;
    cout << "Another Letter = " << cLetter+10 << endl;
    cout << "37 / 7 = " << 37/7 << endl;
    cout << "37 % 7 = " << 37%7 << endl;

    return 0; // Note: ANSI version requires the return
}

```