Supplementary materials for Visual C++ programming

1. What are “comments” in a program? How do we put “comments in Visual C++ source codes?

   a. “// This is a comment line”
   b. “/* This is a block of comment, which can across several lines.
      This is the second line of a comment */”

2. What is the syntax of a function:

   ```
   void DoPainting(CDC *pDC,int Width, int Height)
   { … }
   ```

   - void – return nothing from this function (equivalent to ‘Procedure’ in Visual Basic)
   - int Width, int Height – arguments passed to this function, of the type ‘integer’.
   - CDC *pDC – an argument passed to this function. This is a pointer to an object (a variable) of the CDC class.
   - {…} – a block of code in C++. Can be nested.

3. Basic Syntax

   - case sensitive
   - have to declare variables before use
   - have ‘;’ after each statement
   - the ‘for’ loop: for (x=100;x<300;x=x+1)…

4. What is an object class? Take “CDC” as example.

   An object class is something like data structure, but it not only defines a data structure, it also defines the set of handlers and functions provided with this data structure.
   “CDC” is an object class in Visual C++. All object classes defined in Visual C++ is headed with the ‘C’ character’. ‘DC’ stands for ‘Device Context’.
   The CDC class models a drawing board. Imagine that you have a drawing board (a variable of CDC class). You can draw a dot (the SetPixel function of CDC class) of a specific color at a specific location on it.

5. How do you paint a bitmap onto a CDC object?

   In order to do this, Visual C++ expects you to create an object (variable) of the class CBitmap and associate it with a temporary DC. However, in this assignment, there is a convenient class defined for you: CBitmapDC which assembles the necessary things and pack it into a black box. So, now it is easy: You declare an object of the class CBitmapDC, with passing the resource bitmap’s ID and a reference DC’s pointer; then you can use BitBlt to put the bitmap to any other CDC objects.

   ```
   //Put IDB_BITMAP1 on the display
   { CBitmapDC bm_dc(IDB_BITMAP1,pDC);
     BitBlt(pDC->GetSafeHdc(),100,150,40,40,bm_dc.GetSafeHdc(),0,0,SRCCOPY);
   }
   ```

6. More information on CDC

   The CDC class models a drawing board. Imagine that you have a drawing board (a variable of CDC class). When you draw, and you pick up a pen (a variable of CPen class), or you pick up a brush (a variable of CBrush class). You can draw a line (the MoveTo and LineTo functions of CDC class) on the drawing board. You’ll have further chances to practice such things in next programming exercise.