The Brief History of Visual Basic 6.0

Visual Basic is designed to allow the programmer to develop applications that run under Windows. Microsoft developed Visual Basic 6.0 on 1998.   Visual Basic version 5.0 introduced several tools that let us work more easily with the Internet. With version 6.0 these Internet tools are even more powerful and easy to use.   We can also create enterprise level client/server programs and robust database applications.   With VBScript we can create ActiveX documents and ActiveX controls from Visual Basic. The ActiveX components can even be used by programmers working with other languages, such as C++.Visual Basic is easy to learn, which makes it an excellent tool for understanding elementary programming concepts. It has evolved into very powerful product.

Object Oriented Programming in Visual Basic

Object oriented programming techniques are useful because they allow us to reuse our code efficiently.   Visual Basic takes advantage of object oriented programming techniques. The benefit of using OOP with Visual Basic is if we are working on a large project each member of the team can create a specific class and compile it into an ActiveX DLL for others to use. Instances of a class are known as objects. All these objects in the toolbox are objects. Whenever we are drawing these objects on our form, we create instance of the object. It can be text object, label object, list object, drop down list object etc.

Encapsulation or information hiding refers to the fact that objects hide the details of how they work. For example, when we set the Text property of a text box, we do not know how this text box internally implemented.

Visual Basic supports polymorphism.   The program runs the method appropriate for the current object. For example, the + operator can be used with both strings and integers.

Even though the same symbol is used for both data types, Visual Basic knows to perform different operations. Visual Basic does not support inheritance.

Classes in Visual Basic

We can create our own classes in Visual Basic with a class module. Class modules contain properties, methods, and events. Properties are used to assign and retrieve values from the class. Methods are public functions or subroutines that are defined in the class.

Events can raise events in its containing object. Class modules also have special events of their own, Initialize and terminate. Initialize event is triggered when a new instance of the object is created. Terminate event is triggered when an object is destroyed.

Now we are going to look at a class called clsEmployee

Public FirstName As String

Public LastName As String

Public DateHired As Date

Public Salary As Currency

Private nDeptNum As Integer

Public Property Get Department() As String

   Select Case nDeptNum

      Case1

         Department="Marketing"

       Case 2

         Department="Accounting"

        Case Else

```
                    Department=""

        End Select

End Property



Public Property Let Department(ByVal sNewValue As String)

    Select Case Trim$(Ucase$(sNewValue))

        Case "Marketing"

            NDeptNum=1

        Case "Accounting"

            NDeptNum=2

        Case Else

            NDeptNum=0

        End Select

End Property
```

In this code the property procedure stores the value representing the employee's department in a private integer variable. However users of the object can always assign and return a string.

For example this code can be used as follows:

```
Dim objEmployee as New clsEmployee

ObjEmployee.FirstName="John"

ObjEmployee.LastName="Jetson"
```

Using API's

Another great thing with VB is we can use API functions. API functions are already compiled in a separate file, known as a dynamic link library(or DLL). In order to use these function we just need to declare it. The following code will play waveform(.WAV) sound files on the sound card.

Declare Function sndPlaySound Lib "winmm.dll" Alias "sndPlaySoundA " (ByVal lpszSoundName As String, ByVal uFlags As Long) As Long

Public Const SND_ALIAS =&H10000 'Name is in WIN.INI or the Registry

Public Const SND_ASYNC=&H1   'play asynchronously

Public Const SND_SYNC=&H0   'play synchronously(default)

Public Const SND_NOWAIT =&H2000 'don't wait if the driver is busy

Public Const SND_LOOP =&H8   'loop the sound until next sndPlaySound

Sub SoundCheck()

 Dim lRetVal as Long

 LRetVal=sndPlaySound("C:\Windows\MEDIA\CHIMES.WAV",SND_SYNC)

LRetVal=sndPlaySound("SystemStart",SND_ALIAS   +   SND_ASYNC +SND_NOWAIT

'The alias names of system sounds are listed in the registry together

End Sub

The possibilities are almost endless with usage of Windows API. For example we can get information about free disk space, name of the computer, or we can just exit the windows. There is a reference book for the list of API functions called "Visual Basic Programmer's Guide to the Win32 API" by Dan Appleman.

OLE Automation with Visual Basic

OLE which stands for object linking and embedding was introduced as a way to integrate the Microsoft Office family of products. When we are using Microsoft Office's OLE objects in Visual Basic , we are remote controlling applications such as Word, Excel, Power Point , Access. The benefit is we can use ActiveX (OLE) objects that is in Office applications. We can create professional looking reports using word or excel by driving Word and Excel remotely from Visual Basic , or we can retrieve information from the excel spreadsheet and store it in a database by using Visual Basic.

Database Access.

The most business-oriented computer applications work with data. This data is stored in one or more databases. Visual Basic can create powerful data management programs. The most recent and popular way of accessing and creating data is ADO.   ActiveX Data Objects. DAO and RDO were used until ADO came along. In order to use ADO, we need to reference it, just like when we reference Word object using OLE automation. After we reference we can just go ahead and use its methods and properties. The most important one is recordset. Recordsets represent actual data from the database.   A recordset has fields (Such as Name and Phone Numbers) and values for the fields. All of

these records together make up a recordset. With ADO we can add new records, edit existing records, delete records, navigate the recordset.

Possibilities with Visual Basic is just endless. Visual Basic comes with different flavors, such as VBA and VBScript. VBA is used for Office Applications, and VBScript is used for internet programming.   Server side VBScript code can be used in Active Server Pages.

Reference: "Using Visual Basic 6 " Brian Siler and Jeff Spotts

"Programming In Visual Basic 5.0"

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