LESSON NOTES 16

Year/Level: 12   Subjects: Computer Studies

Strand:	CE **Strand:** CE 2 Application Packages
Sub-strand:	CE 12.2.1 Visual Basic.NET Programming (VB NET)
Content Learning Outcome:	VB.net, Visual basic application file, IDE, Writing a Good Visual Basic Application, Object Naming Conventions

Lesson Notes
- ✧ **Programming** (also known as Software Development) is a six step procedure for creating a list of instructions for the computer to follow.
- ✧ The six steps of **Software Development Cycle** include Program Specification, Program Design, Program Code, Program Test, Program Documentation, and lastly Program Maintenance.
- ✧ **VB.NET** is an object-oriented language primarily used to write application programs that run in windows or on the internet using a graphical user interface (GUI).
- ✧ **GUI (graphic User Interface)** to allow users to interact with the computer by using images or icons rather than text based commands.

Visual Basic Application Files
A Visual Basic Application is called a solution, which can consist of one or more projects. Each project can contain one or more files.
Application Project is made up of:
Forms- Windows that you create for user interface
Controls - Graphical features drawn on forms to allow user interactions (tet boxes, labels, scroll bars, command buttons, etc.) Forms and controls are objects.
Properties -Every characteristic of a form or control is specified by a property. Example properties include names, captions, size, color, position, and contents. Visual Basic applies default properties. You can change properties at design time or run time.
Methods - Built-in procedure that can be invoked to impart some action to a particular object.
Event Procedures - Code related to some object. This is the code that is executed when a certain event occurs.
General Procedures - Code not related to objects. This code must be invoked by the application.
Modules - Collection of general procedures, variable declarations, and constant definitions used by application.

Each Visual Basic application creates the following files with extensions:
1. .sln - a **solution file** that holds information about the project. This is the only file that is opened
2. .suo - a **solution user options file** that stores information about the selected options
3. .vb - a **.vb file** that holds the definition of a form
4. .resx - a **resource file** for the form
5. .vbproj - a **project file** that describes the project and lists the files included
6. .vbproj.user - a **project user option file** that holds project option settings

Integrated Development Environment
- ✧ An integrated development environment (IDE) is a software application that provides comprehensive facilities to computer programmers for software development.

❖ An integrated development environment (IDE), also known as integrated design environment and integrated debugging environment, is a type of computer software that assists computer programmers to develop software. In the case of Visual Basic.NET, that IDE is Visual Studio.

Writing a Good Visual Basic Applications

Planning is a crucial step in programming. Before you start writing a Visual Basic Program, a good programmer has to ensure the following:
1. Have good design of the user interface
2. Define the properties for the elements on the interface
3. Design the solution for the problem (algorithm).

1) **Design the user interface**-When planning the user interface, one has to draw a sketch of the screens the user will see when the project is running.
2) **Plan the properties**- For each object, write down the properties that you plan to set or change during the design of the form.
3) **Plan the Solution.** In this step, you plan the classes and procedures that will execute when your project runs. You will determine which events require action to be taken and then make a step-by-step plan for those actions. The actual Visual Basic code will be written later. During this planning stage, you will write out the actions using pseudocode, which is an English expression. Some people prefer describing the steps using a flowchart.

Object Naming Conventions

After completing the planning steps and obtaining approval from the users, the programmer can begin with the actual construction of the project. In the actual program implementation, the programmer does the following:
1. Defines the user interface and objects using the IDE.
2. Set the properties for the controls
3. Write the actual Basic code

A convention has been established for naming Visual Basic objects. This convention is to use a three letter prefix (depending on the object) followed by a name you assign.

A few of the prefixes are

Object	Prefix	Example
Form	frm	frmHello
Button	btn	btnExit
Label	lbl	lblMessage
Text	txt	txtName
Menu	mnu	mnuSave
Checkbox	chk	chkChoice
Option/Radio Button	opt	optSelect

Questions

1) Define IDE?
2) State the long form of GUI?
3) List the six steps of **Software Development Cycle?**
4) Define Programming?