**Year 12 Computer Studies**

**Week 8: Lesson Notes\***

**Lesson 71**

**Lo**: Write 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).

**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.
* On the sketch, **all the controls** that is planned to be used in the application is shown and labeled.
* It is also important to **consult with the users** and make sure that they agree on the look and feel of the project before proceeding any further.

**Plan the properties**

* For each **object**, write down the **properties** that you plan to set or change during the design of the form.

**Plan the solution**

* plan the **classes and procedures** that will execute when the project runs.
* 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**-*an English expression*.
* Some people prefer describing the steps using a **flowchart**.

**Lesson 72**

**Lo**: discuss object naming convention

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:



**Tip:**

When you select a name for an object, Visual Basic requires:

1. the name to *begin* with a *letter or an underscore.*
2. The name *can contain* *letters, digits, and underscores*.
3. An object name *cannot include a space or punctuation mark and cannot be a reserved word, such as Button or Close or End or Print etc.*

**Lesson 73**

**LO:** describe flow chart symbols

* A flowchart is a diagrammatic representation of a program or a graphic representation of the steps needed to solve the programming problem.
* A flowchart is an outline that depicts (shows) events or actions and the sequence in which the actions must be taken to correctly solve the problem.



**Lesson 74**

**LO:** discuss the logical structures- sequence structure

Three arrangements are used in programming to write structured programs. These are:

1. Sequence Structure
2. Selection Structure
3. Iteration (Loop) Structure

**Sequence Structure**

* In the sequence structure *one program statement follows another.* There are no decisions to be made the boxes logically follow one another.



**Lesson 75**

**LO:** discuss the logical structures- selection structure

**Selection Structure**

* The selection structure represents a ***choice***. It occurs when a choice must be made.
* The outcome of this structure offers two (2) paths to follow when a decision must be made by a program.
* ***If…then…else structure*** is used to determine which of the two available actions to choose depending on whether a condition evaluates to true or false.

 

**Week 8 Worksheet**

1. Planning is the most important step in programming, list three things a programmer will ensure before writing a VB program.

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1. In the actual program implementation, state three things the programmer does.

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1. For the following table write down the object names and an example for each prefixes.

|  |  |  |
| --- | --- | --- |
| PREFIX | OBJECT | EXAMPLE |
| *frm* | Form  | *frm*Hello |
| *btn* |  |  |
| *lbl* |  |  |
| *txt* |  |  |
| *mnu* |  |  |
| *chk* |  |  |
| *opt* |  |  |

1. State the three rules required for Visual Basic when selecting a name for an object.

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1. Define a flowchart.

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1. Differentiate between sequence structure and selection structure (draw a flowchart to describe the following structures)

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