Course Outline for CE95940
Introduction to Visual BASIC

Structure

The course is 8 weeks, three hours per night. Each session will be split roughtly in half, with lectures at the beginning of the session (in room DC2577 or C2170) and hands-on lab work at the end (in room C2 168A).

Instructor information

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Week-by-week Curriculum

Week 1:

Lecture

- Introduction. What is VB? Why use VB instead of something else? Major components of VB (GUI design, programming, project management).
- Installing VB. Machine requirements. Minimal versus full installation.
- Tour of VB windows and tools. Using help.
- Open, run, modify, close. New, etc.
- language syntax overview. Data declarations. Environmental options: require variable declarations, save as text, save before run.
- Simple controls: labels, buttons, text. Properties of controls.
- Changing properties with the design tool.
- A look at VB code. Statements, variables, function libraries.
- Referencing an object and its properties.
- Events. Callbacks (event routines). The click event.

Lab

- Watstar procedures. Signon & change password. Etc.
- using help!

- familiarization with components. open, run, modify and save an existing program. play around.
- Exercise: start VB, check environment options (option explicit, save as text, save before run)
- Exercise: modify "colours" demo to display current setting in a label
- Exercise: fetch "movement" program, run it, change it to add a text selector (describe twips in exercise sheet)
- Exercise: new application (create directory first)

Week 2:

Lecture

- VB development environment: editing, cutting, pasting, new procedures, saving (save as text).
- structure of an application: main form, callbacks, global data . Procedures and functions, code-only forms. Building an executable. Constants into global data.
- controls: buttons, textboxes, labels, frame, option (radio), checkbox
- events: click, change, form: load, unload. double-click. keypress.
- properties: caption, text, multiline, wordwrap, autosize, colours & backgrounds, positional: top, left, height, width. passwordchar
- methods: form: minimize & maximize. move, refresh

Lab

- lots of simple programs to exercise skills and control familiarization
- Exercise: icon viewer
- Exercise: add sliders (descibe) to colour program (demoed version from week1)

Week 3:

Lecture

- VB arrays (brief syntax overview)
- lists: listbox, combobox. Adding, deleting; searching; traversal and accessing; selection: multiple and single. Itemdata uses
- debugging: breakpoint, single-step. Debug window, debug.print
- drive, Directory and file controls

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- application structure: secondary forms, modal vs modeless forms. creating multi-form applications
- standard dialogues: msgbox, inputbox
- VBXs: common dialogues: fileopen

Lab

- text editor (line based)

Week 4:

Lecture

- User-defined datatypes
- File I/O: textfile, record-based.
- Picture box: line, circle, rectangles, mouse operations (down, up, move); freehand trace, rubber-banding; background image;
- Autoredraw property, persistent bitmaps.

Lab

- point & click
- chase-the-cursor

Week 5:

Lecture

- All about menus: menu design window, uses, nesting, design considerations (not too many layers, not used as buttons, checkbox settings, option settings)
- Right-button popups
- Demo pgm: toggling
- Window design principles and techniques: organization, tab ordering, default & cancel properties, enabling & disabling, form resizing

Lab

- Add menus to text editor or other previous application
- automatic resize of form contents (e.g. picturebox)

Week 6:

Lecture

- control arrays: design time -- calculator button pad
- MDI - document model of applications; object variables & new
- run-time control arrays; Window-list menus

Lab

- Rolodex (MDI, menu, dynamic forms)
- keyboard assist

Week 7:

Lecture

- clipboard, selected text
- cut, copy, paste menu items
- drag & drop, moveover; icon property
- DDE and more DDE
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Lab

- text-editor launcher
- adapt keyboard assist to drive application

Week 8:

Lecture

- Database facilities
- Distributing VB applications: SetupWiz
- Review
- What else is there to know about VB? macro language, OLE, DLLs (Windows API)
- VB Standard versus VB professional
- Alternatives to VB for Windows: Borland Delphi, CA Realizer, Powersoft Powerbuilder, Asymetrix Toolbook
- Other operating systems: OS/2: VX-Rexx; Unix: Tk/TCL; Portable: Galaxy; Portable environments: Visual c/c++

Reference Materials