Chapter 1: An Introduction to Computers & Visual Basic.NET

◆ Introduction to Computers (1.1)
◆ Using Windows (1.2)
◆ Files and Folders (1.3)
◆ An Introduction to Visual Basic.NET (1.4)
◆ Biographical History of Computing (1.5)


Introduction to Computers (1.1)

◆ Personal computer

◆ Generally, a computer that is operated by one person at a time
Introduction to Computers (1.1) (cont.)

◆ Computer uses in Society

◆ Banking – customer transactions

◆ Airlines – reservations system

◆ NASA – control satellites

◆ Internet – email, research, shopping

Introduction to Computers (1.1) (cont.)

◆ Programs Students Will Create in This Text

◆ Create and manage a list of friends' addresses and phone numbers

◆ Calculate loan payments and amortization

◆ Computations to support other course work
Communicating with the Computer

- Machine language – low level, 0 and 1, hard for humans to understand
- VB.NET – high level, understood by humans, consists of instructions such as Click, If, Do

Computers and Complicated Tasks

- Tasks are broken down into instructions that can be expressed by a computer language
- A program is a sequence of instructions
- Programs can be only a few instructions or millions of lines of instructions
Introduction to Computers (1.1) (cont.)

◆ Servers

◆ A server can be almost any computer

◆ A server provides resources to other computers
  ◆ Files
  ◆ Internet
  ◆ Printers

Introduction to Computers (1.1) (cont.)

◆ All Programs Have in Common:

◆ Take data and manipulate it to produce a result

◆ Input – Process – Output
  ◆ Input – from files, the keyboard, or other input device
  ◆ Output – to the monitor, printer, file, or other output device
Introduction to Computers (1.1) (cont.)

◆ Hardware and Software

◆ Hardware – the physical components of a computer
  ◆ Keyboard
  ◆ Disk drive
  ◆ Monitor

◆ Software – The instructions that tell the computer what to do

Introduction to Computers (1.1) (cont.)

◆ Programmer and User

◆ Programmer – the person who solves the problem and writes the instructions for the computer

◆ User – any person who uses the program written by the programmer
Introduction to Computers (1.1) (cont.)

◆ Problem Solving

◆ Developing the solution to a problem

◆ Algorithm – a step by step series of instructions to solve a problem

Introduction to Computers (1.1) (cont.)

◆ Types of Problems in this Text

◆ Business computations

◆ Managing records

◆ Managing lists

◆ And more
Introduction to Computers (1.1) (cont.)

◆ VB.NET

◆ BASIC developed at Dartmouth in the early 1960’s

◆ Visual Basic created by Microsoft in 1991

◆ VB.NET similar to Visual Basic, but more powerful

Introduction to Computers (1.1) (cont.)

◆ Internet

◆ A connection of thousands of networks around the world – each network has

◆ A computer and one or more routers

◆ Router is a device or computer connected to two or more networks

◆ All use TCP/IP
Introduction to Computers (1.1) (cont.)

◆ World Wide Web vs. Internet

◆ World Wide Web is a collection of information stored on servers throughout the Internet known as Web servers.

◆ HTTP – HyperText Transfer Protocol enabled researchers to share data – creating a "web" of information

◆ Internet is used to access documents on the World Wide Web

Using Windows (1.2)

◆ Mouse Actions

◆ Pointing
◆ Hovering
◆ Clicking
◆ Double-Clicking
◆ Dragging
Using Windows (1.2) (cont.)

◆ Windows and Its Little Windows
  ◆ Title Bar
  ◆ Active window

Using Windows (1.2) (cont.)

◆ Using the Notepad
  ◆ Reviewing Notepad to learn more about Windows application
  ◆ Notepad is an item in the Accessories menu
  ◆ Notepad can be used to create simple data files
Using Windows (1.2) (cont.)

◆ Notepad

Using Windows (1.2) (cont.)

◆ Parts of the Window

◆ Restore button

◆ Vertical scroll bar

◆ Horizontal scroll bar

◆ Menu bar
Files & Folders (1.3)

◆ Disk is a permanent storage.
◆ A disk can store thousands of files.
◆ A disk drive is identified by a letter.
◆ To organize your files you have to store them in different folders (directories).

Files & Folders (1.3) (cont.)

◆ Key Terms in using Folders

◆ Root folder
◆ Path  Example:

C:\VB01\VB.EXE

◆ File Specification: You should always know where you are saving your files.
Files & Folders (1.3) (cont.)

◆ Explorer window

Using Windows Explorer

◆ Start | Run | type in Explorer

◆ Folder pane on left

◆ Detail pane on right
Files & Folders (1.3) (cont.)

◆ To Display File Extensions

◆ Alt/T/O
◆ Click View
◆ Uncheck "Hide file extensions for known file types"
◆ Click OK

Files & Folders (1.3) (cont.)

◆ To Create a New Folder

◆ Highlight the folder that is to contain the new folder

◆ File | New | Folder

◆ Type in a name for the new folder and press Enter
Files & Folders (1.3) (cont.)

◆ To Rename a Folder or File
  ◆ Right click on the folder or file
  ◆ Click on Rename
  ◆ Type in a new name (or alter the current name) and press Enter

Files & Folders (1.3) (cont.)

◆ To Delete a Folder or File
  ◆ Right click on the folder
  ◆ Click on Delete
  ◆ Click on Yes
Files & Folders (1.3) (cont.)

◆ To Copy a Folder or File

◆ Right click on the folder file
◆ Click on copy
◆ Open the folder where the copy is to be placed
◆ Right click on the second folder
◆ Click on Paste

Files & Folders (1.3) (cont.)

◆ To Move a Folder or File

◆ Right click on the folder or file
◆ Click on Cut
◆ Open the folder where the copy is to be moved
◆ Click on the second folder with the right mouse button
◆ Click on Paste
Files & Folders (1.3) (cont.)

- Using the Open and Save As Dialog Boxes

Files & Folders (1.3) (cont.)

- Read-Only Attribute
  - Folders and files copied from a CD or DVD onto a hard disk are read-only
  - To turn off the read-only
    - Right click on the file or folder
    - Click on Properties
    - Click on the General tab
    - In the Attributes section, uncheck read-only
    - Click OK button
Intro. To VB.NET (1.4)

◆ Language used to create Windows application.

◆ Provides a Graphical User Interface or GUI.

◆ The sequence of instructions executed in the program is controlled by events.

Intro. To VB.NET (1.3) (cont.)

◆ Sample Input Screen

![Sample Input Screen](image)
Intro. To VB.NET (1.3) (cont.)

◆ How to Develop a VB.NET Application

◆ Design the Interface for the user.
◆
◆ Determine which events the controls on the window should recognize.

◆ Write the event procedures for those events.

Intro. To VB.NET (1.3) (cont.)

◆ Different Versions of Visual Basic

◆ Version 1.0 – 1991
◆ Version 2.0 – 1992
◆ Version 3.0 – 1993
◆ Version 4.0 – 1995
◆ Version 5.0 – 1997
◆ Version 6.0 – 1998
◆ VB.NET – 2002 – NOT BACKWARD COMPATIBLE WITH EARLIER VERSIONS OF VISUAL BASIC
Biographical History of Computing (1.5)

◆ 1800s

◆ George Boole – devised Boolean algebra

◆ Charles Babbage – created "analytical engine"

◆ Augusta Ada Byron – first computer programmer

◆ Herman Hollerith – founder of company that would become IBM

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Biographical History of Computing (1.5) (cont.)

◆ 1930s

◆ Alan Turing – deciphered German code in WWII; father of artificial intelligence

◆ John V. Atanasoff – inventor of first electronic digital special purpose computer
Biographical History of Computing (1.5) (cont.)

◆ 1940s

◆ Howard Aiken – built large scale digital computer, Mark I

◆ Grace M. Hopper – originated term "debugging"; pioneered development and use of COBOL

◆ John Mauchley and J. Presper Eckert – built first large scale general purpose computer, ENIAC

Biographical History of Computing (1.5) (cont.)

◆ 1940s continued

◆ John von Neumann – developed stored program concept

◆ Maurice V. Wilkes – built EDSAC, first computer to use stored program concept

◆ John Bardeen, Walter Brattain, and William Shockley – developed transistor that replaced vacuum tubes
Biographical History of Computing (1.5) (cont.)

◆ 1950s

◆ John Backus – created Fortran; early user of interpreters and compilers

◆ Reynold B. Johnson – invented the disk drive

◆ Donald L. Shell – developed efficient sorting algorithm

Biographical History of Computing (1.5) (cont.)

◆ 1960s

◆ John G. Kemeny and Thomas E. Kurtz – invented BASIC

◆ Corrado Bohm and Guiseppe Jacopini – proved that any program can be written with only 3 structures: sequence, decision, and loops

◆ Edsger W. Dijkstra – stimulated move to structured programming by declaring "GOTO" harmful
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<th>Biographical History of Computing (1.5) (cont.)</th>
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<td><strong>1960s continued</strong></td>
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<tr>
<td>◆ Harlan B. Mills – advocated use of structured programming</td>
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<tr>
<td>◆ Donald E. Knuth – wrote definitive work on algorithms</td>
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<tr>
<td>◆ Ted Hoff, Stan Mazer, Robert Noyce, and Frederico Faggin – developed first microprocessor</td>
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<td><strong>1960s continued</strong></td>
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<td>◆ Douglas Engelbart – invented computer mouse</td>
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Biographical History of Computing (1.5) (cont.)

1970s

- Ted Codd - software architect; laid the groundwork for relational databases
- Paul Allen and Bill Gates - cofounders of Microsoft Corporation
- Stephen Wozniak and Stephen Jobs - cofounders of Apple Computer Inc.
- Dan Bricklin and Dan Fylstra - wrote VisiCalc, the first electronic spreadsheet program

1970s continued

- Dennis Ritchie - creator of the C programming language.
- Ken Thompson - created the Unix operating system
- Alan Kay – developer of Smalltalk, a pure object-oriented language
- Don Chamberlain - created a database programming language, later known as SQL
Biographical History of Computing (1.5) (cont.)

◆ 1980s

◆ Phillip “Don” Estridge - at IBM directly responsible for the success of the personal computer.
◆ Mitchell D. Kapor - cofounder of Lotus Corporation
◆ Tom Button - group product manager for applications programmability at Microsoft; headed the team that developed QuickBasic, QBasic, and Visual Basic.

Biographical History of Computing (1.5) (cont.)

◆ 1980s continued

◆ Alan Cooper - considered the father of Visual Basic.
◆ Charles Simonyi - the “father of Word.”
◆ Bjarne Stroustrup - creator of the C++ programming language.
◆ Richard M. Stallman - founded Free Software Foundation
Biographical History of Computing (1.5) (cont.)

◆ 1990s

◆ Marc Andreessen - inventor of the Web browser.

◆ James Gosling – creator of Java.

◆ Linus Torvalds - developed the popular Linux operating system.

Biographical History of Computing (1.5) (cont.)

◆ 1990s continued

◆ Brain Behlendorf, Rob McCool, and Roy Fielding - developers of the Apache HTTP server, an open-source Web server that can scale up quickly to handle high volumes of traffic.