Exam 1 Review (CGS 2100)

Other Important Advancements

Software Application Explosion: VisiCalc and Beyond

- Including disk drives in personal computers set off an explosion of software applications

Spreadsheets:
- VisiCalc
- Lotus 1-2-3
- Microsoft Excel

Word Processing:
- WordStar
- Word fot MS-DOS
- WordPerfect

The Graphical User Interface

- Graphical User iNterface (GUI) allowed users to interact with computer more easily
- Previously used command or menu driven interfaces
- GUI not invented by a computer company

Xerox: Birth of the GUI

- Xerox Alto (1972)
- Introduced "What You See is What You Get" (WYSIWYG)
- File Management system with directories and folders
- Mouse and network connectivity
- Never sold commercially

The Lisa and the Macintosh

- Apple Lisa (1983)
  - First successful PC using GUI
  - Windows, drop-down menus, icons, a file system with folders and files
  - Very expensive
- Apple Macintosh (1984)
  - 1/3 cost of Lisa
  - Introduced 3.5-inch floppy disk

The Internet Boom

- 1993: Mosaic browser introduced
- 1994: Netscape Launched
- 1995: Internet Explorer introduced by Microsoft
- 1998: Netscape became open source

Making the Personal Computer Possible: Early Computers

- Computers are the compilation of the results of individual inventions
- Early machines helped create the personal computer of today

The Pascalene Calculator and the Jacquard Loom

- First accurate mechanical calculator

- Created by Blaise Pascal in 1642
- Used revolutions of gears to count by tens
- Could be used to add, subtract, multiply, and divide
- Basic design used in mechanical calculators for 300 years
- Created by Joseph Jacquard
- Revolutionized fabric industry
- Cards had punched holes; automated weaving complex patterns
- Process adopted later; record and read data in computers using punch cards

Babbage's Engines

- Analytical Engine: 1834
- Designed by Charles Babbage
- First automatic calculator
- Based on Difference Engine
- Never developed
- Drawings and descriptions similar to today's computers

Hollerith Tabulating Machine

- 1980: Created by Herman Hollerith
  - U.S. Census Bureau: Tabulate census data
  - Automatically read data from punch cards
- 1896: Hollerith started the Tabulating Machine Company
  - Later became International Business Machines (IBM)

Z1 and Atanasoff-Berry Computer

- Z1 (1936)
  - Created by Konrad Zuse
  - Mechanical calculator
  - Included control unit and separate memory functions
  - Important breakthrough for future computer design

- Atanasoff-Berry Computer (ABC)
  - Created by John Atanasoff and Clifford Berry
  - First electrically powered digital computer
  - Used vacuum tubes to store data
  - First computer to use the binary system

Understanding Your Computer

- Two basic designs of computers
  - Portable
    - Laptop computers
    - netbooks
    - Tablet PC's
    - Tablet computer
    - Ultrabooks
  - Stationary
    - Desktop computers
    - All-in-one computers
- Mainframe
  - Supports many users simultaneously
- Supercomputer
  - Preforms complex calculations extremely rapidly
- Embedded

- Self-contained computer devices preforming dedicated functions
- Smartphone

Computers are Data Processing Devices

- Preforms for major functions
- *Input*: Gathers data allows users to enter data
- Process: Manipulates, calculates, or organizes data into information
- Output: Displays data and information for user
- Storage: Saves data and information for later use
- *Data*: Representation of a fact, figure, or idea
- *Information*: Data that has been organized or presented in a meaningful fashion

Bits and Bytes: The Language of Computers

- The language of computers
  - Bit
    - Binary digit
    - 0 or 1
- Byte
  - 8 Bits
- Each letter, number, or character is a unique combination of 8 bits and 0s and 1s
- Computer uses combinations of hardware and software to process data into information
  - Hardware is any part of the computer you can physically touch
  - Software is set of computer programs
    - Application software
    - System software
      - Operating system (OS)

Input Devices

- Devices used to enter data and instructions into the computer
- Most common input devices:
  - Keyboards
  - Mouse
- Other input devices
  - Microphone
  - Scanner
  - Digital camera
  - Stylus

Keyboards

- QWERTY layout is standard on most PCs
- Netbook and laptop keys are more compact and have fewer keys
- Wireless keyboards work via radio frequencies
- Alternative keyboards
  - Flexible keyboards
  - Virtual laser keyboard

Mice and Other Pointing Devices

- Touch pads and track point devices
- Take place of mouse on laptops

Touch Screens