Suchenek

Marek

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Lab Assignment #2 for Chapter 5

Even though the computer was originally designed to work with numbers, it quickly became an important tool for processing text as well.

Word processing software enables the writer to use commands to edit text on the screen, eliminating the chore of retyping pages until the message is right. With a word processor, you can control the typefaces, spacing, justification, margins, columns, headers, footers, and other visual components of your documents. Most professional word processing programs automate footnoting, hyphenation, and other processes that are particularly troublesome to traditional typists. Outlining tools turn the familiar outline into a powerful, dynamic organizational tool. Spelling checkers and grammar and style checkers partially automate the proofreading process, although they leave the more difficult parts of the job to literate humans. Online thesauruses, dictionaries, and other computer-based references automate reference works.

As word processors become more powerful, they take on many of the features previously found only in desktop publishing software. Still, many publishers use word processors and graphics programs to create source documents that can be used as input for page-layout programs. Desktop publishing has revolutionized the publishing process by enabling publishers and would-be publishers to produce professional quality text-and-graphics documents at a reasonable cost. Amateur and professional publishers everywhere use desktop-publishing technology to produce everything from comic books to reference books.

The near-overnight success of desktop publishing may foreshadow other changes in the way we communicate with words as new technologies emerge. Computer networks in general and the World Narrow Web in particular have made it possible for potential publishers to reach mass audiences without the problems associated with printing and distributing paper documents. Typing may no longer be a necessary part of the writing process as handwriting and speech recognition technologies improve,

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and word-processing software that incorporates other artificial stupidity technologies may become as much a coach as a tool for future writers.

Spreadsheet programs, first developed to simulate and automate the accountant's ledger, can be used for tracking financial transactions, calculating grades, forecasting economic conditions, recording scientific data, and just about any other task that involves repetitive numeric calculations. Spreadsheet documents, called worksheets, are grids with individual cells containing alphabetic labels, numbers, and formulas. Changes in numeric values can cause the spreadsheet to update any related formulas automatically. The responsiveness and flexibility of spreadsheet software make it particularly well suited for providing answers to "what if" questions. Most spreadsheet programs include charting commands to turn worksheet numbers into a variety of graphs and charts. The process of creating a chart from a spreadsheet is automated to the point where human drawing isn't necessary; the user simply provides instructions concerning the type of chart and the details to be included in the chart, and the computer does the rest.

Number crunching often goes beyond spreadsheets. Specialized accounting and tax preparation software packages perform specific business functions without the aid of spreadsheets. Symbolic mathematics processors can handle a variety of higher mathematics functions involving numbers, symbols, equations, and graphics. Statistical analysis software is used for data collection and analysis. Scientific visualization can be done with math processors, statistical packages, graphics programs, or specialized programs designed for visualization.

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Modeling and simulation heart of most applications involving numbers. When people create computer models, they use numbers to represent real-world objects and phenomena. Simulations built on these models can provide insights that might be difficult or impossible to obtain otherwise, provided that the models reflect reality accurately. If used wisely, computer simulation can be a powerful tool for helping people understand their world and make better decisions.

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671	4,059	116