

English for Computer Science Students

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Preface

Computer has made a great impact on our daily life. It is almost impossible to live without some kind of computer. Its presence is felt at every workplace, schools, colleges, offices, industries, homes and banks and more important in researches.

This book is intended to make the computer science students familiar with different aspects of the computer science. It is expected to increase their vocabulary and technical terms. Moreover, this book is supposed to be useful for the university students studying various courses in computer field. It attempts to cover fundamental and useful materials to meet the total requirement of the computer science students.

The contents of the book are divided into 7 lessons, starting with types of computer followed by introduction to computer hardware, introduction to computer software, network structure, computer security, wireless Technology and information technology. The content of each lesson is followed by a number of exercises. There is a number of True or False tests along with some multiple choice ones to make the students revise the materials. There are also vocabulary exercises in form of matching, blank and word formation to help the students to memorize the new words easily. The final exercise refers to the definition of the technical computer terms.

Types of Computers

Various types of computers that are available globally are analog computers, digital computers and hybrid computers.

Analog Computers

Analog computers operate by measuring rather than counting. They measure continually physical nature data such as lengths, voltages, or currents. Analog computers generally deal with physical variables such as pressure, temperature, speed, etc. They do not produce number but produce the results in the form of graph. Analog machines are usually special purpose devices, dedicated to a single task. The speedometer of an automobile is an analog device which converts the voltage generated by the automobile's drive shaft into kilometers per hour. Another example is the fuel pump in filling stations. The flow of fuel is converted to liters pumped and the monetary equivalent. The analog computers are mainly used for control purpose such as refining and baking. In refinery, it is used to control the flow of fuel through a pipe, while in baking; it is used to control the temperature of ovens. Analog computers are said to operate in real time and are used for research in design where many different shapes and speeds can be tried out quickly. In general, analog computers are extraordinarily fast, since they can solve most complex equations at the rate at which a signal traverses the circuit, which is generally an appreciable fraction of the speed of light.

Digital Computers

Digital computers are based on counting operation. A digital computer uses numbers represented as digits or discrete units of data and information. They take input and give output in form of numbers, letters and special characters. Digital computers can be built to take the solution of equations to almost unlimited precision, but quite slowly compared to analog computers. They are useful for both business and scientific data processing. Digital computers are in various sizes and shapes. Examples of digital computers are microcomputers, minicomputers, mainframes and supercomputers which will be explained later.

Hybrid Computers

A hybrid computer combines the desirable features of analog and digital computers. It is mostly used for automatic operations of complicated physical processes. Now-a-days analog-to-digital and digital-to-analog converters are used for transforming the data into suitable form for either type of computation. For example, in hospital's ICU, analog devices might measure the patient's temperature, blood pressure and other vital signs. These measurements which are in analog might then be converted into numbers and supplied to digital components in the system. Hybrid computers are mainly used for specialized tasks.

After all, the most computers used commonly today are digital ones. There are two main categories of digital computers, namely general purpose and special purpose computers. Special purpose computers are designed and built for specific applications, whereas general purpose computers can be used to solve wide variety of problems.