

# COMPUTER NETWORK



# COMPUTER NETWORK

*(For B.Tech., M.Tech., BCA, MCA, B.Sc. (Comp. Science) and IT Professionals)*

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*Dedicated*  
*to*  
*Our Parents*



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## PREFACE

Today, students waiting to understand the concepts & mechanisms underlying telecommunications & networking coming from a variety of academic & professional backgrounds.

This book attempts to provide a unified overview of the broad field of data and computer communications. The organizations of the book reflects an attempt to break this massive subject into comprehensible parts and to build, piece by piece, a survey of the state of the art. The book emphasizes the basic principles and topics of the fundamental importance concerning the technology and architecture of this field, and provides a detailed discussion of leading edge topics.

The book is primarily intended to serve as a textbook in accordance with the syllabus of computer networks offered by various universities in India.

The text is designed to make it particularly easy for students of B.Tech., M.Tech., MCA, BCA, to understand data communications and networking.

The book highlights the basic principles, and contrasts their application in the specific areas of technology. It contains a number of examples, various diagrams and exercises, which enhance its suitability for classroom instructions.

We hope that the book will fulfill the need of readers and would welcome any suggestions regarding the improvement of the book.

—Authors



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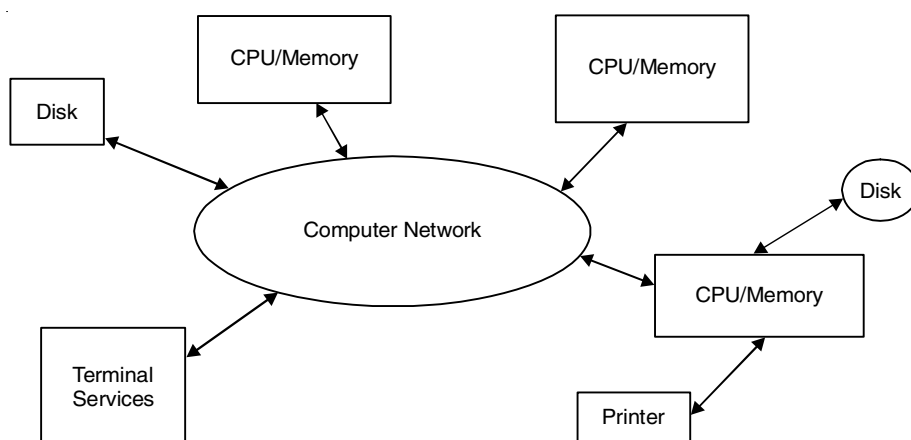
# NETWORK CONCEPTS

## 1.1 INTRODUCTION

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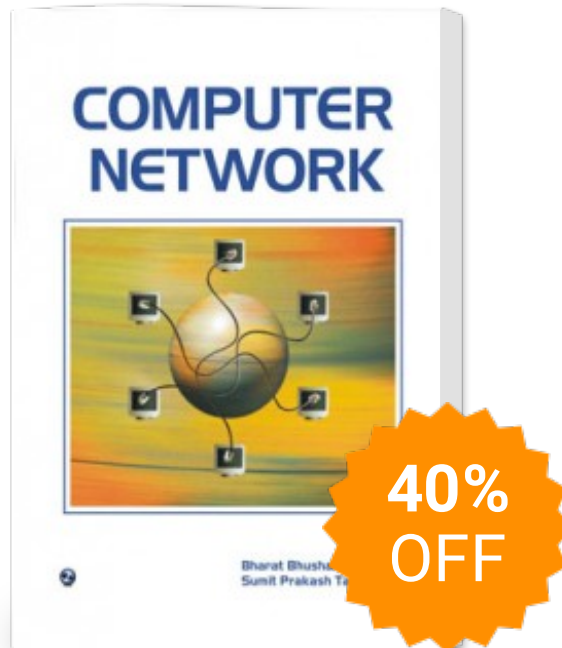
### 1.1.1 Computer Networks

A computer network refers to the collection of several computing machines, peripheral devices and storage unit. The computer systems may communicate over a computer network and share their resources. These networks enable the computer to communicate with a remote computer which may be located at a distance of a few meters to several thousands kilometers. The users of a computer system on the network are able to share the software resources such as programs, database and program utilities. The computer network has become a basic necessity and has triggered the development of several applications. The conventional concept of installing a high performance and large computer system has now been replaced with computer networks where several low cost and low performance computer systems collectively exhibit high performance at lower cost. The computer network connects several peripheral devices, databases and computer systems as shown in Fig. 1.1.



**Fig. 1.1** Computer Network

# Computer Network By B.B.Agarwal & S.P.Tayal



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