

**E**astern  
**E**conomy  
**E**dition

ELIAS M. AWAD

igasi

2215

R.12

roduction to  
omputers  
Business



# introduction to COMPUTERS In BUSINESS

**ELIAS M. AWAD**

*The George A. Ball Distinguished Professor of Management  
Ball State University, Muncie, Indiana*

**Prentice-Hall of India Private Limited**

**New Delhi-110001**

**1980**

This Second Indian Reprint—Rs. 39.00  
(Original U.S. Edition—Rs. 101.55)

**INTRODUCTION TO COMPUTERS IN BUSINESS**  
by Elias M. Awad

PRENTICE-HALL INTERNATIONAL, INC., Englewood Cliffs.  
PRENTICE-HALL OF INDIA PRIVATE LIMITED, New Delhi.  
PRENTICE-HALL INTERNATIONAL, INC., London.  
PRENTICE-HALL OF AUSTRALIA, PTY. LTD., Sydney  
PRENTICE-HALL OF CANADA LTD., Toronto.  
PRENTICE-HALL OF JAPAN, INC., Tokyo.  
PRENTICE-HALL OF SOUTHEAST ASIA (PTE.) LTD., Singapore.  
WHITEHALL BOOKS LIMITED, Wellington, New Zealand.

© 1977 by Prentice-Hall, Inc., Englewood Cliffs, N.J., U.S.A. All rights reserved. No part of this book may be reproduced in any form, by mimeograph or any other means, without permission in writing from the publishers.

ISBN-0-87692-137-3

The export rights of this book are vested solely in the publisher.

This Eastern Economy Edition is the only authorised, complete and unabridged photo-offset reprint of the latest American edition specially published and printed for sale in the following countries: Argentina, Bangladesh, Bolivia, Brazil, Burma, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Ethiopia, Ghana, Guatemala, Guyana, Haiti, Hong Kong, India, Indonesia, Iran, Iraq, Israel, Jamaica, Japan, Korea, Malaysia, Nicaragua, Nigeria, Pakistan, Paraguay, Peru, Philippines, Sierra Leone, Singapore, South Korea, Sri Lanka, Sudan, Taiwan, Tanzania, Thailand, Tobago, Trinidad, Turkey, Uganda, Uruguay, Venezuela, Vietnam and Zambia.



First Printing	...	...	October, 1978
Second Printing	...	...	January, 1980

Printed by Jay Print Pack Private Limited, New Delhi-110015 and  
Published by Prentice-Hall of India Private Limited, M-97, Connaught  
Circus, New Delhi-110001.

# contents

Preface *xi*

## **ONE information processing and computer fundamentals, 3**

**1**

Systems Theory and Information Systems 4

**2**

Data and Information Processing 32

**3**

Developments and Trends in Data Processing Systems 60

**4**

Computer Classifications 84

**TWO computer systems:  
structure and devices, 107**



Computer Fundamentals 108



Computer-Based Processing System 132



The Central Processing Unit 158



Input and Output 174



Data Entry and Special Reading Devices 200



Data Communication and Visual Display Devices 230

**THREE program planning  
and preparation, 255**



Program Planning Tools and Procedures 256



Program Preparation 286



Programming Languages 300

**FOUR analysis and design of computer-based  
information systems, 341**

**14** The Systems Study: An Overview 342

**15** Systems Analysis Concepts 362

**16** Systems Design and Implementation 388

**17** Project Documentation 414

**18** Computer Service and Management 428

**appendix:  
computer numbering systems  
and data codes, 449**

Glossary 469

Index 479