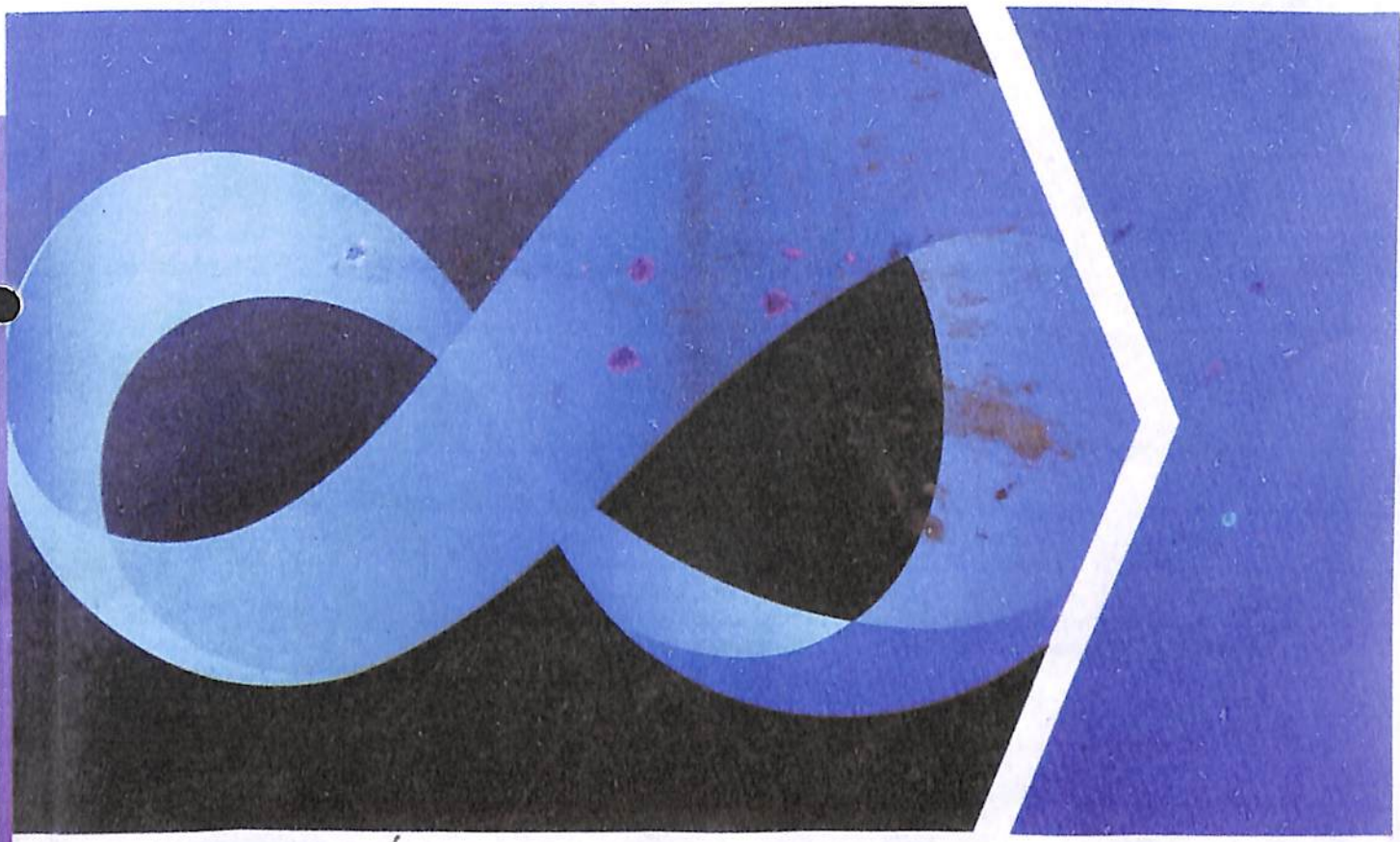


**Read To Lead**



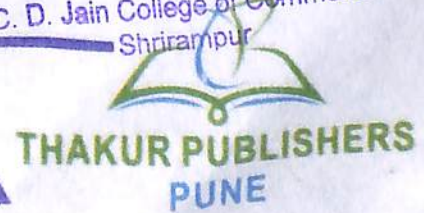
# PROGRAMMING IN VISUAL BASIC



**PRINCIPAL**  
C. D. Jain College of Commerce  
Shrirampur

Prof. Y. V. Chandratre

Priti Avadhoot Edgaonkar





# Programming in Visual Basic

ISBN - 978-93-5163-330-3

Edition 2015

## Copyright © All Rights Reserved

This book is sole subject to the condition that it shall not, by way of trade or otherwise, be lent, resold, hired out, or otherwise circulated without the publisher's prior written consent, in any form of binding or cover, other than that in which it is published and without including a similar condition. This condition being imposed on the subsequent purchaser and without limiting the rights under copyright reserved above, no part of this publication may be reproduced, stored in or transmitted in any form or by any means (electronic, mechanical, photocopying, recording or otherwise), without the prior written permission of both the copyright owner and the below mentioned publisher of this book.

### Published by :

## Thakur Publishers

C.T.S. No-635, Flat No-T-7, Third Floor, Bhudhwar Peth, ABC Market,  
Pune-411002. Mob.: 09373086387, 9326863355, 8421121625, 09325036341.

Website: [www.ttpl.org.in](http://www.ttpl.org.in)

E-mail: [thakurpublishers@rediffmail.com](mailto:thakurpublishers@rediffmail.com)

**HEAD OFFICE:** FF-107, Adarsh Complex, Engineering College Crossing,  
Opp. Allahabad Bank, Lucknow-226021. Mob. 9415584997/98.

*Books are Available for Purchase Online at: [ttpl.org.in](http://ttpl.org.in)*

### Retailers / Distributors

1. Adarsh Book Agency, 629, Budhwar Peth, Appa Balwant Chowk, Near Ratan Cinema Basement Pune. Ph-020-24497435.
2. Aryan Book Agency, 680, Budhwar Peth., ABC Chowk, Near Jageshwar Temple, Opp. Venus Traders Mob.: 09822978095, 09552292929.
3. Big B Book Depot & Mobile Shop, Shop No.-8, Dhavalgiri Appt., Rambaug Colony Near MIT College, Kathrud, Pune-411038. Mob.: 09890279785, 9970393536, 9922739993.
4. Gajanan Book Centre, Vidhya Bhavan, First Floor, Opp. Balaji Mandir, 634, Budhwar Peth, Pune. Mob. 09325412121.
5. Goel Book Agency, 31, Budhwar Peth, Next to Jogeshwari Temple. Pune-411002. Ph. 020-24453267, 9890938870.
6. Jagruti Book Agency, 128, Budhwar Peth Sakshatkar, Opp. Jogeshwari Mandir, Pune. Mob. 09850039320.
7. Jai Mata Ji Book Collection, Aakurdi Main Road, Near Maruti Temple, Pune Mob-9420202943
8. Laxmi Book Depot Rambag Colony, Dhavalgiri Apt., Near M.I.T. College, Pune. Mob.: 09890951476, 9325606477.
9. Madhu Kalp Book Depot, Shivaji Maharaj Statue, Near Dhanashree General Store, Wagholi, Pune. Ph-9370753216, 9326982009.
10. National Book Centre, Molegaon, Baramati, Pune. Mob.: 09960771127, 9881040273.
11. OM Book Stall, 629, Budhwar Peth., Ratan Talkies, Kakade Arcade, Ground Floor, Shop No. 48 12 A, Pune. Ph.: 020-24435333.
12. Patel Traders, 676/A, Budhwar Peth, Opp. Jogeshwari Mandir, Pune - 411002. Mob.: 09225656963, 020-24457322.
13. PBC Book Sellers and Stationers, 152, Budhwar Peth, Near Jogeshwari Mandir, Pune-411002. Ph.: 020-24452254, 66092463, 09860141789, 09657703141.
14. Pradeep Book Depot, Shop No. 31, Indraprastha Complex, Manjari Phate, Hadapsar, Pune. Ph. 020-26990101, 9604010202.
15. Pragati Book Centre, 157, Budhwar Peth, Opp. Ratan Talkies, Pune-411002. Ph. 020-24458887, 66022707.
16. Pragati Book Centre, 676/B, Budhwar Peth, Opp. Jogeshwari Mandir, Pune - 411002. Ph.: 020 - 66017784, 66020855.
17. Pragati Book Centre, Amber Chambers, 28/A, Budhwar Peth, Appa Balwant Chowk. Ph.: 020 - 20240335, 66281669.
18. Sakalp Stationers, Canal Road, Baramati, Mob.: 09765018999, 09209800339.
19. Samarpanam Book Seller Pimpri, Sant Tukaram Nagar, Opp. Ganesh Mandir, Mhada Complex. Ph.: 9922307131.
20. Samarpanam Book Seller, Shop No. 12, 'S' bldg., Dhruv Darshan Cmplx, Near P.C.C.O.E., Akurdi. Mob. 09823665769.
21. Saraswati Book Agency, 681, Budhwar Peth, Appa Balwant Chowk, Pune - 411002. Ph.: 9822679099, 65601495.
22. Saraswati Granth Bhandar, 671, Budhwar Peth, Appa Balwant Chowk, Pune. Mob. 09423580797, 09822679099.
23. Shayadri Book Sellers of Stations Soowey No. 50 Near Afford College of Engg, Hinjewadi Road, Marunji.
24. Shiv Shakti Book Centre, Wagholi Wagheshwar, Complex Nagar Road, Wagholi, Mob.: 09767658458, 8888033500.
25. Shree Gajanan Book Depot, S.No.-195/5, Opp. Gokul Sweet, Nagar Road, Wagholi, Pune. Mob. 09850156893, 9325521212.
26. Vikas Book & Stationers, 151, Budhwar Peth, Appa Balwani Chowk, Near Jogeshwari Mandir, Pune. Ph- 020-24468737, 9921331187.
27. Vividh Granth Bhandar, 629, Budhwar Peth, kakadev Arcade, Near Ratan Cinema Hall, Pune. Ph.: 020-24461403, 09822968250.
28. Yash Books, Amber Chambers, 28/A, Budhwar Peth, Appa Balwant Chowk, Pune. Ph.: 020-24489248, 9923699235.
29. Anand Pustkalay, Shani Mandhir, Samor, Rauibhag Peth-Nasik. Ph.: 0253-2339340, 9922600577.
30. Anmol Book Service, 5, Munanda Market, M.G Road, Nasik Ph. 0253-2505501, 2339401, 932536413
31. Anmol Pustakalaya, Saubhagya Chambers, Bytco Point, Nasik Road, Pune. Ph. 0253-2461603, 2461003.
32. Mahalaxmi Distributors, 9/10, Jadhav Market, Opp. Tempo Stand, Near Red Crossing Signal, MG Road, Nasik. Mob.: 09422253538.
33. Rahul Book Centre, Tilak Path, Opp. Sarvajanik Vachanalaya, Near Bank of Maharashtra, Nasik-1. Ph. 020-2599608, 2592168.
34. Shreepad Granth Bhandar, Shani Chowk, Ahmed Nagar. Ph. 0241-2347303.

### NASIK

AHMED NAGAR

PRINCIPAL

C. D. Jain College of Commerce  
Shrirampur



## About the Book

This book on **Programming in Visual Basic** is for **BCA Fourth Semester of University of Pune**.

The purpose of this tutorial is to provide basic guideline for people interested in Visual Basic programming. The book covers all topics that are needed to give a proper overview of the subject for further studies. The material in this book is designed to provide maximum flexibility of use for teachers and students alike. The book has been organized in the form of five units.

The book has been written in the simple language, lucid and clear style so as to enable the students to understand the topics easily. Each topic is illustrated with examples and also complete programs, which have been designed to clarify the principles involved.

## About the Author



**Prof. Y. V. Chandratre** is working as **Head, Department of Computer Science at C.D. Jain College of Commerce, Shrirampur, Ahmednagar**, since **23 years**. He has contributed many Research paper at National and International Journals. He has also worked as a Resource Person in many State level and National level Conferences and Seminars.



**Ms. Priti Avadhoot Edgaonkar** is **MCS** and is presently working as **Co-Ordinator & Lecturer at Vivekanand Institute of Technology, Pune**.

She has **5 years** of teaching experience and more than **7 years** of industry experience. Her areas of interest are Ms-Office, C, C++, . Net Technology, Web Technology, Oracle, DBMS, RDBMS, E-Commerce, Visual Basic, Project Guidance for BCA, BCS & MCM. She has attended various Seminars, Conferences and has presented several papers at National & International Levels.

## University of Pune BCA - 4<sup>th</sup> Semester

Subject Name	Author Name	Pages
Object Oriented Programming Using C++	Prof. Aabha B. Pandit, Rajesh Keshav Bade	272
Programming In Visual Basic	Prof. Y. V. Chandratre, Priti Avadhoot Edgaonkar	256
Computer Networking	Prof. Talule S.S., Prof. Vidya Bhegade	224
Enterprise Resource Planning & Management	Prof. Sarita Dhawale	208
Human Resource Management	Prof. Manisha Thomas	256



**PRINCIPAL**

C. D. Jain College of Commerce

**MRP: ₹115**

**THAKUR PUBLISHERS  
PUNE**

[www.tppl.org.in](http://www.tppl.org.in)

ISBN: 978-93-5163-330-3



9 789351 633303



# Contents

## Unit 1: Getting Started with V.B.

1.1.	Visual Basic	15
1.1.1.	Introduction	15
1.1.2.	Object Oriented Concepts	15
1.1.2.1.	Class	16
1.1.2.2.	Object	17
1.1.2.3.	Encapsulation	17
1.1.2.4.	Polymorphism	17
1.1.2.5.	Inheritance	18
1.1.2.6.	Message Passing	19
1.1.3.	Event Driven Programming Language	19
1.1.4.	Features of Visual Basic	20
1.1.5.	Visual Basic Terminologies	21
1.1.6.	Installing Visual Basic 6.0	22
1.1.7.	Starting Visual Basic	25
1.2.	Visual Basic Environment	27
1.2.1.	Introduction	27
1.2.2.	Opening Visual Basic IDE	28
1.2.3.	Types of Applications	28
1.2.4.	Initial Visual Basic Screen	29
1.2.5.	Components of Visual Basic IDE	30
1.2.5.1.	Title Bar	30
1.2.5.2.	Menu Bar	30
1.2.5.3.	Toolbars	31
1.2.5.4.	Project Explorer Window	35
1.2.5.5.	Properties Windows	35
1.2.5.6.	Form Layout Window	36
1.2.5.7.	Toolbox	36
1.3.	Working with Properties	39
1.3.1.	Introduction	39
1.3.2.	Studying the Event of a Form	40
1.3.3.	Working Code for Events	42
1.3.4.	Planning the Design	44
1.4.	Exercise	45

## Unit 2: Constants, Variables, Operators, Control Structure Looping & Array

2.1.	Constants	46
2.1.1.	Introduction	46
2.1.2.	Types of Constants	46
2.2.	Data Types	46
2.2.1.	Introduction	47
2.2.2.	Numeric Data Types	47
2.2.3.	Non-Numeric Data Types	47
2.2.4.	User Defined Data Types	49
2.3.	Variables	50
2.3.1.	Introduction	52
2.3.2.	Variable Declaration	52



  
**PRINCIPAL**

**C. D. Jain College of Commerce  
Shrirampur**

- 2.3.3. Variable Naming Conventions
- 2.3.4. Scope of Variables
- 2.4. Operators
  - 2.4.1. Introduction
  - 2.4.2. Arithmetic Operators
  - 2.4.3. Concatenation Operator
  - 2.4.4. Relational/Comparison Operators
  - 2.4.5. Assignment Operator
  - 2.4.6. Logical Operators
  - 2.4.7. Operators Precedence or Hierarchy of Operators
- 2.5. Control Structures
  - 2.5.1. Introduction
  - 2.5.2. If Statement
  - 2.5.3. If...Else Statement
  - 2.5.4. Nested If...Else Statement
  - 2.5.5. Select Case
- 2.6. Looping
  - 2.6.1. Introduction
  - 2.6.2. Do Loop
    - 2.6.2.1. Do...Loop While
    - 2.6.2.2. Do While...Loop
    - 2.6.2.3. Do ...Loop Until
    - 2.6.2.4. Do Until...Loop
  - 2.6.3. For Loop
    - 2.6.3.1. For...Next Loop
    - 2.6.3.2. For Each ...Next Loop
  - 2.6.4. While Wend Loop
  - 2.6.5. With Statement
- 2.7. Array
  - 2.7.1. Introduction
  - ~~2.7.2.~~ Types of Array
  - 2.7.3. Single Dimensional Arrays
  - 2.7.4. Multidimensional Arrays
  - 2.7.5. Control Arrays
- 2.8. Functions
  - 2.8.1. Introduction
  - 2.8.2. Types of Functions
  - 2.8.3. Built-In Functions
    - 2.8.3.1. String Functions
    - 2.8.3.2. Date and Time Functions
    - 2.8.3.3. Formatting Function
    - 2.8.3.4. Mathematical Functions
    - 2.8.3.5. Conversion Functions
  - 2.8.4. User Defined Functions
- 2.9. Exercise

### Unit 3: Working with Controls

- 3.1. Controls
  - 3.1.1. Introduction
  - 3.1.2. Adding Controls on Forms
  - 3.1.3. Working with Properties and Methods of Each Controls
    - 3.1.3.1. Label



  
**PRINCIPAL**  
C. D. Jain College of Commerce  
Shrirampur

4.1.7.1.	Adding Common Dialog Box in Toolbox	141
4.1.7.2.	Common Dialog Box Properties	141
4.1.7.3.	Methods Used in Common Controls	141
4.1.7.4.	FileOpen and FileSave Dialog Boxes	142
4.1.7.5.	Font Dialog Box	144
4.1.7.6.	Color Dialog Box	145
4.1.7.7.	Print Dialog Box	146
4.1.7.8.	Example	147
4.2.	Menus	154
4.2.1.	Introduction	154
4.2.2.	Creating New Menu Item	155
4.2.3.	Modifying and Deleting Menu Item	160
4.2.4.	Adding Access Characters	161
4.2.5.	Adding Shortcut Keys	161
4.2.6.	Creating Sub Menus	162
4.2.7.	Popup Menus	164
4.2.7.1.	Creating and Displaying Popup Menu	164
4.2.7.2.	Advantages of Popup Menus	167
4.2.8.	Adding and Deleting Menus at Run-Time	167
4.2.9.	Adding Menu Items for MDI Child Form	168
4.3.	Exercise	170

### Unit 5: Working With Database

5.1.	Data Control	171
5.1.1.	Introduction	171
5.1.2.	Types of Data Controls	172
5.1.3.	Studying Properties of Data Control	172
5.1.4.	Studying Methods of Data Control	173
5.1.5.	Connectivity with MS-Access	175
5.1.6.	Operations of Database through Coding	176
5.2.	ADO Data Control	178
5.2.1.	Introduction	178
5.2.2.	Adding ADO Data Control to Toolbox	178
5.2.3.	Advantages of ADODC over DC	179
5.2.4.	Studying Properties and Methods of ADODC	179
5.2.5.	Connectivity with MS Access	182
5.2.6.	Connectivity with Oracle	184
5.2.7.	Report Generation	186
5.3.	Developing ADO Application Through ADODC and Coding	192
5.4.	Exercise	196

#### Programming Examples

Unsolved Paper (2011)

Solved Paper (2012)

Solved Paper (2013)

Solved Paper (2014)

Classification

197
216
217
228
239
249



  
PRINCIPAL

C. D. Jain College of Commerce  
Shrirampur



4.1.7.1.	Adding Common Dialog Box in Toolbox	141
4.1.7.2.	Common Dialog Box Properties	141
4.1.7.3.	Methods Used in Common Controls	141
4.1.7.4.	FileOpen and FileSave Dialog Boxes	142
4.1.7.5.	Font Dialog Box	144
4.1.7.6.	Color Dialog Box	145
4.1.7.7.	Print Dialog Box	146
4.1.7.8.	Example	147
4.2.	Menus	154
4.2.1.	Introduction	154
4.2.2.	Creating New Menu Item	155
4.2.3.	Modifying and Deleting Menu Item	160
4.2.4.	Adding Access Characters	161
4.2.5.	Adding Shortcut Keys	161
4.2.6.	Creating Sub Menus	162
4.2.7.	Popup Menus	164
4.2.7.1.	Creating and Displaying Popup Menu	164
4.2.7.2.	Advantages of Popup Menus	167
4.2.8.	Adding and Deleting Menus at Run-Time	167
4.2.9.	Adding Menu Items for MDI Child Form	168
4.3.	Exercise	170

### Unit 5: Working With Database

5.1.	Data Control	171
5.1.1.	Introduction	171
5.1.2.	Types of Data Controls	172
5.1.3.	Studying Properties of Data Control	172
5.1.4.	Studying Methods of Data Control	173
5.1.5.	Connectivity with MS-Access	175
5.1.6.	Operations of Database through Coding	176
5.2.	ADO Data Control	178
5.2.1.	Introduction	178
5.2.2.	Adding ADO Data Control to Toolbox	178
5.2.3.	Advantages of ADODC over DC	179
5.2.4.	Studying Properties and Methods of ADODC	179
5.2.5.	Connectivity with MS Access	182
5.2.6.	Connectivity with Oracle	184
5.2.7.	Report Generation	186
5.3.	Developing ADO Application Through ADODC and Coding	192
5.4.	Exercise	196

### Programming Examples

Unsolved Paper (2011)	197
Solved Paper (2012)	216
Solved Paper (2013)	217
Solved Paper (2014)	228
Classification	239
	249



  
**PRINCIPAL**

**C. D. Jain College of Commerce  
Shrirampur**