Programming in Python

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Preface

This book on Python Programming will introduce you to the fundamentals of Python as a language. It's aimed for learners who want to add python as a skillset into your list of programming languages. Python is a programming language that is in wide use both for professional software development and in education. In the technical world, it is used for from creating small scripts to developing full web applications such as YouTube, SnapChat and DropBox.

It's an unrushed introduction, taking small steps from the basics to more varied advanced topics. Even though this is an introduction, some topics that might seem advanced has also been included, such as Numpy basics, Scope and modules in Python Language. We have also included many examples for understanding especially if you've programmed in other languages and try to adapt those styles to Python.

In this book, we have constructively raised the fundamentals of Programming and then understanding fundamentals of Python with all the necessary concepts.

The Chapter 1, Introduction to programming is elaborating the concepts regarding Algorithms, Flowcharts, and various programming languages. You will also come across concepts pf compilation, testing and debugging and models of computation in python programming.

In Chapter 2 you will learn how to use Algorithms ad flowcharts in solving problems, tools to create the flowcharts, along with examples to using Algorithms and flowcharts.
In Chapter 3, you will learn technical strengths of python, its interpreter, Python working modes, Variables, constants, Data types and the complete installation process of python. Along with this you will learn concepts of slicing, accepting inputs in python through console and concatenation.

In Chapter 4, you will come across the various types of operators used in python programming, alongside Operator precedence, Conditional Statements in Python and different loops available in python programming.

In Chapter 5, we will discuss Sequence Data types in python which will include topics other than Data Types, such as Lists, Tuples and Dictionaries with their detailed properties and usages. And it will also cover concepts of Mutability in python with many examples in python programming using such sequence data types.

In Chapter 6, you will understand the Top down Approach in Problem Solving, Modular Programming and Functions Parameters, Local Variables, the Return Statement, Global Statement, Library Function, String Function and Recursion.

In Chapter 7, you will come across the concepts of Files and you will have the Understanding in File Handling, various python functions for reading from a file and writing into a file.

In Chapter 8, you will learn about Scope of Objects and Names, LEGB Rule, Module Files as Namespace, Types of Modules, Import Model and Reloading Modules. Finally, you will understand Python Standard Modules in detail.

In Chapter 9, we will take you through the Introduction to Numpy, array, datatypes, array Attributes, Array Creation Routines, Array from Existing Data and concepts of Indexing & Slicing.

Acknowledgement

First and foremost, we are grateful to all the contributing authors for their time, effort, and understanding during the preparation of the book. This book is the outcome of constructive and comprehensive efforts of all the authors. All chapters were reviewed and authors have updated their chapters to address review comments.

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In the end we are extremely grateful to INSC International Publishers for the sustained efforts in completing this work.

(Mr. Binu K. Vargis)

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