MCQ for Python Users

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Our family members who have supported us in all respects of life and career.
Our journey proved to be a boon by following their words and experiences.

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Acknowledgement

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Preface

Bringing the book **"MCQ for Python Users"** gives us immense pleasure. Python is the most popular programming language and is widely used among programmers. The book is intended for the students of various courses who can use this high-level programming language as an effective tool for Problem-solving. Python is used to develop applications of any stream and is not restricted only to computer science. This book contains more than 5000 MCQ questions and answer keys.

These questions and answers serve as a means to assess your proficiency in Python programming. If you possess prior knowledge of Python, you can utilize it to ascertain the number of queries you can independently try without assistance. Before your job interview, it would be advisable to review these questions. For teachers or tutors instructing Python, these multiple-choice questions (MCQ) serve as a valuable assessment tool to gauge the extent to which pupils have grasped the material given. The intended difficulty level of the questions is aimed at those who are at the Beginner Level in Python, either those who are just beginning to study Python or those who have recently acquired knowledge in Python. The book also provides answers to all the questions.

This book is for everyone from an engineering and science background. It is also for B.Tech. B.E., BCA, BSc, M.Tech, PGDCA, M.E., MCA, M.Com., MSc, Ph.D., other UG graduates, and PG graduates. With this book, you will gain the knowledge and skills in Python. We hope you will find this book informative and helpful.

The book is divided into 20 chapters covering MCQs of all aspects of Problem-Solving with Python with a touch of Machine Learning. The details are listed below.

Chapter 1: Fundamentals of Programming – This chapter contains MCQ related to the basics of programming, including language translators, instructions, and various types of statements.

Chapter 2: Introduction to Python – It presents MCQ for Python basics, installation, program writing, and executions.

Chapter 3: Data type, Operators, and Expressions – It covers various MCQs related to Python data types, operators, and different expressions.

Chapter 4: Control Flow Statements – MCQs related to conditional and looping statements.

Chapter 5: Functions - This chapter covers various MCQs related to functions that can be used in Python.

Chapter 6: Sequence-String – This chapter focuses on MCQs targeting Python's sequence manipulation, emphasizing string handling.

Chapter 7: Lists – This chapter includes various List related MCQs.

Chapter 8: Tuples – This chapter includes various MCQs for Tuples.

Chapter 9: Dictionaries – This chapter covers MCQs for dictionary data structure and various operations applied to the dictionary.

Chapter 10: File Handling – Python provides a built-in feature to build, write, and read files. This chapter includes MCQs related to various operations that are used on files.

Chapter 11: Exception Handling – This chapter highlights MCQs related to the exception-handling functionality of Python.

Chapter 12: Modules – It includes Python module-related MCQs.

Chapter 13: Packages – It includes MCQs related to Python packages.

Chapter 14: Object-oriented Programming – This chapter covers MCQs related to Python's object-oriented programming.

Chapter 15: Graphical User Interfaces in Python – This chapter contains MCQs for Pythons GUI programming. Questions are related to tkinter, widgets, frames, and application designing.

Chapter 16: Machine Learning with Python – covers MCQs related to various machine learning concepts.

Chapter 17: Clustering with Python – This chapter's MCQ explores the concept and methodologies of clustering algorithms using the Python programming language.

Chapter 18: Applications of Python – It includes MCQs related to various Python applications. Questions include data analysis, machine learning, web development, automation, and more.

Chapter 19: Python Error Finding MCQ – The collection of MCQs focused on identifying and resolving errors in Python code.

Chapter 20: Database Programming with Python – It includes various MCQs related to database handling through Python programming.

Errata

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Chapter 1
Fundamentals of Programming

Introduction

Programming serves as the fundamental pillar of our progressively computerized society. The software that operates our computers, mobile devices, and the other interconnected networks that constitute our contemporary existence is fueled by this force. Acquiring proficiency in the art and science of programming empowers individuals with a formidable instrument for problem-solving, work automation, and the realization of creative concepts. This chapter starts the process of developing **Multiple-Choice Questions (MCQs)** that center around the core principles of programming. The MCQs provided here are intended to be a beneficial tool for individuals seeking to enhance their knowledge, instructors aiming to facilitate learning, and those with an interest in comprehending the fundamental principles that form the basis of programming. The importance of these MCQs resides in their capacity to evaluate, strengthen, and enhance an individual's understanding of programming concepts. Whether one is an inexperienced individual on their programming journey or an experienced developer aiming to review fundamental concepts, the following inquiries offer a systematic approach for self-evaluation and knowledge acquisition.

Objectives

The objective of this chapter, titled *Fundamentals of Programming MCQs*, is to enhance the knowledge and skills of learners and instructors in the programming field. It aims to offer a systematic and interactive approach to comprehending the fundamental ideas that underpin the realm of coding and software development.

Multiple choice questions

1. **Which translator program is responsible for converting an assembly language program into an equivalent Machine Language program?**
   - **a.** Compiler
   - **b.** Linker
   - **c.** Assembler
   - **d.** Interpreter

2. **An _____ is a symbol representing a particular operation that can be performed on data.**
   - **a.** Operand
   - **b.** Operator
   - **c.** Expression
   - **d.** None of the above

3. **Which one of the following programming languages is machine-independent?**
   - **a.** High level language
   - **b.** Machine language
   - **c.** Assembly language
   - **d.** All the above

4. **Which of the languages is said to be a high-level language?**
   - **a.** C++
   - **b.** Java
   - **c.** C
   - **d.** All the above

5. **Which of the following translates the source program statements into object codes?**
   - **a.** Compiler
   - **b.** Debugger
   - **c.** Interpreter
   - **d.** Assembler

6. **What is the primary purpose of a variable in programming?**
   - **a.** To store and manipulate data
   - **b.** To control the flow of the program
   - **c.** To display output to the user
   - **d.** To comment on code

7. **Which of the following data types is not typically used to store numeric values?**
   - **a.** int
   - **b.** string
   - **c.** float
   - **d.** double

8. **What does the term algorithm mean when applied to computer programming?**
   - **a.** A programming language
   - **b.** A step-by-step procedure for solving a problem
   - **c.** A computer's memory
   - **d.** A type of data structure

9. **Which control structure is used to repeat a block of code until a certain condition is met?**
   - **a.** if statement
   - **b.** for loop
   - **c.** switch statement
   - **d.** function

10. **What is the purpose of the `if-else` statement in programming?**
    - **a.** To define a function
    - **b.** To execute a block of code only if a condition is true, and another block, if it is false
    - **c.** To declare a variable
    - **d.** To create a loop

11. **Which of the following is not a valid programming language?**
    - a. Python
    - b. JavaScript
    - c. HTML
    - d. C++

12. **What is the purpose of the `while` loop in programming?**
    - **a.** To iterate over a sequence of values
    - **b.** To execute a block of code a specified number of times
    - **c.** To define a function
    - **d.** To check a condition and repeat the code if the condition is true

13. **In programming, what do you understand by a function?**
    - **a.** A piece of code that prints text to the screen
    - **b.** A container for storing data
    - **c.** A reusable block of code that performs a specific task
    - **d.** A type of loop

14. **What does the term syntax error refer to, in programming?**
    - **a.** A logical error in the code
    - **b.** A mistake in the program's output
    - **c.** An error in the program's design
    - **d.** A violation of the programming language's rules

15. **Which data structure uses the LIFO principle?**
    - **a.** Queue
    - **b.** Stack
    - **c.** Linked list
    - **d.** Array

16. **What does the acronym IDE stand for in the context of programming?**
    - **a.** Integrated Design Environment
    - **b.** Integrated Development Environment
    - **c.** Interconnected Development Environment
    - **d.** Interactive Developer Environment
17. **Which of the following is not a valid programming paradigm?**
    - **a.** Object-Oriented Programming
    - **b.** Functional Programming
    - **c.** Procedural Programming
    - **d.** Circular Programming
18. **In programming, what is a compiler?**
    - **a.** A program that converts source code into machine code
    - **b.** A program used for debugging code
    - **c.** A program that generates random numbers
    - **d.** A program that displays output on the screen
19. **Various programming languages use this operator to assign a value to a variable:**
    - **a.** +
    - **b.** =
    - **c.** :
    - **d.** *
20. **What is the purpose of a comment in code?**
    - **a.** To specify the input data
    - **b.** To improve the program's performance
    - **c.** To explain or document the code for human readers
    - **d.** To declare a variable
21. **Which programming construct allows a program to make decisions and execute different codes based on conditions?**
    - **a.** Loop
    - **b.** Function
    - **c.** Control structure
    - **d.** Conditional statement
22. **What is the term for a named storage location in memory that holds a value?**
    - **a.** Function
    - **b.** Variable
    - **c.** Operator
    - **d.** Constant
23. **Which of the following is a valid way to represent a single-line comment in Python?**
    - **a.** /* This is a comment */
    - **b.** // This is a comment
    - **c.** # This is a comment
    - **d.** <!-- This is a comment -->
24. **What is the result of 5 % 2 in most programming languages?**
    - **a.** 2.5
    - **b.** 2
    - **c.** 1.5
    - **d.** 1
25. **In object-oriented programming, what is a class?**
    - **a.** A function that performs a specific task
    - **b.** A template or blueprint for creating objects
    - **c.** A data structure used to store multiple values
    - **d.** An error in the code
26. **What is the primary purpose of the break statement in a loop?**
    - **a.** To terminate the program
    - **b.** To exit the loop and continue with the next iteration
    - **c.** To print a message to the console
    - **d.** To create a new loop
27. **In programming, what is a parameter or argument in the context of functions?**
    - **a.** A variable declared inside a function
    - **b.** A variable used to store user input
    - **c.** A value passed into a function when it is called
    - **d.** A reserved keyword