Faysal Aziz

Beginning Python

One full day course

FA-0116 · one-day

Software Development

Introduction

Welcome to the "Beginning Python with Google Colab" one-day course! Python is a versatile and widely-used programming language that's well-suited for various applications, from web development to data analysis and artificial intelligence. By leveraging Google Colab, a powerful cloud-based tool, you'll be able to code and run Python programs efficiently, while also collaborating with others in real-time. This course aims to provide a comprehensive introduction to Python, equipping you with the fundamental skills to start writing Python programs confidently.

Learning outcomes

Upon completion of this course, participants will be able to:

- Understand the basics of Python programming.
- Write simple Python programs using variables, loops, and conditional statements.
- Work with Python data structures such as lists, dictionaries, and tuples.
- Create and manipulate functions to modularize code.
- Utilize Google Colab's features to improve programming efficiency.

Prerequisites

- Basic computer skills.
- Familiarity with programming concepts is helpful but not required.
- A Google account to access Google Colab.

Training outline

1. Introduction to Python and Google Colab (30 minutes)

- Brief history and importance of Python
- Overview of Python applications
- Introduction to Google Colab
- Creating and sharing notebooks

2. Python Basics (1 hour)

- Python syntax
- Variables and data types
- Basic arithmetic operations
- Comments and docstrings
- Practice exercises

3. Control Structures (1 hour)

- Conditional statements (if, elif, else)
- Loops (for and while)
- Loop control statements (break, continue, and pass)
- Practice exercises

4. Lunch Break (1 hour)

5. Python Data Structures (1.5 hours)

- Lists
- Tuples
- Dictionaries
- Sets
- Common operations and methods
- Practice exercises

6. Functions (1.5 hours)

- Defining and calling functions
- Function arguments and return values
- Anonymous functions (lambda)
- Scope and lifetime of variables
- Practice exercises

7. Google Colab Tips and Tricks (30 minutes)

- Code snippets
- Collaborative editing
- Markdown and rich text
- Integrating Google Drive
- Saving and exporting notebooks

8. Course Summary and Next Steps (30 minutes)

- Recap of key concepts
- Recommendations for further learning
- Q&A session

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