

Building a Text Editor with Tkinter in Python

Module 1: Python Basics

- Introduction to Python
- Data Types
- Variables
- Data Structure
- Operations on Data Structure
- Inbuilt methods

Module 2: Data Types and Variables

- Data Types
- Understanding Variables
- Getting User Input and Print statements
- Use quotes and escape character
- Lists
- Tuples
- Dictionaries
- Sets
- Different Methods on data structures
- String Indexing and Slicing Strings
- Concatenation and Repetition
- Common String Methods
- String Formatting
- Namespaces
- Formatted String Literals (f-strings and .format() method)
- Built-in String Functions

Module 3: Functions and Modules

- Defining Functions
- Using Parameters and Return Values
- Using Arguments and Default Parameters
- Scope of Variables
- Modules and Packages
- Writing and Importing Modules

Module 4: Flow Control

- Python Operators
- If, else, elif clauses
- Loops – for and while loops
- Iteration

Module 5: Introduction to Tkinter

- Introduction to Tkinter
- Introduction to GUI Programming
- Overview of Tkinter
- Advantages of Tkinter for GUI development

Module 6: Setting Up the Development Environment

- Installing Python
- Installing Tkinter
- Setting up a text editor

Module 7: Understanding Widgets and Geometry Managers

- Introduction to Widgets
 - Labels
 - Buttons
 - Text Box
 - Entry Widget
 - Combo Box
 - Radio Buttons
- Introduction to Geometry Manager
 - Pack
 - Grid
 - Place
- Create an application using widgets and geometry managers

Module 8: File Handling in Tkinter

- Handling File Operations
- Opening, saving, and closing files

- Handling file dialogues

Module 9: Setting Up the Editor Window

- Initializing the Tkinter application
- Configuring window title and size
- Adding a Text Widget for Editing
- Creating a text widget
- Configuring text widget properties

Module 10: Implementing Basic Text Editing Features

- Implementing Edit Operations
- Cut, Copy, Paste
- Undo, Redo

Module 11: Enhancing the User Interface

- Customizing Text Appearance
- Font selection, size, and color
- Text alignment
- Configuring keyboard shortcuts for common operations
- Adding Line Numbers
- Displaying line numbers alongside text

Module 12: Packaging

- Packaging the Application
- Converting the application into an executable
- Using tools like PyInstaller or cx_Freeze
- Testing the editor for bugs and issues
- Fixing any remaining issues
- Presenting the final text editor project
- Reviewing key concepts learned throughout the course