
Problem Statement

Project Title: ASCII Art Generator in Python

Background and Motivation:

ASCII art is a creative way of presenting text graphically by using characters from the ASCII standard. In the world of programming, generating ASCII art serves as an excellent exercise in string manipulation, user input handling, and visual formatting in console-based applications. This project aims to build a tool that allows users to generate different styles of ASCII art banners interactively through a Python program.

Problem Description:

The problem is to design an intuitive ASCII art generator that can transform user input text into visually distinct ASCII art styles: a simple banner made with asterisks, a boxed text style using characters like plus and dash, and more elaborate text art using an external library `pyfiglet` if available. The challenge involves implementing modular, readable code while handling user input validation and external dependencies gracefully.

Objectives:

- Develop three separate ASCII art rendering techniques: simple banner, box style, and `pyfiglet`-based fonts.
- Create a command-line interface allowing users to choose the style and input their text.
- Ensure the program handles missing libraries with informative messages.
- Apply programming concepts such as functions, conditional statements, exception handling, and string manipulation.

Scope and Limitations:

The project targets beginner to intermediate programmers seeking hands-on experience with Python console applications. It focuses solely on text-based ASCII art generation and does not cover graphical user interfaces or image-to-ASCII conversion. The optional use of `pyfiglet` requires separate installation and internet access.

Expected Outcomes:

- A fully functional Python script executable in any standard environment.

- Clear console output demonstrating the three ASCII art styles based on user input.
- Codebase adhering to modular design principles for maintainability.
- Documentation and inline comments explaining core functionalities.

Significance:

This project serves as an educational tool to consolidate fundamental programming skills in Python and introduces users to external libraries integration. Moreover, it encourages creativity in text styling and provides a foundation for more advanced ASCII art or command-line utilities.
