



Graphic Era
Hill University
 DEHRADUN • BHIMTAL • HALDWANI




PROJECT AND TEAM INFORMATION

Project Title

(Try to choose a catchy title. Max 20 words).

A Python-to-C Code Converter with GUI Interface

Course: Bachelor of Technology (CSE)

TEAM NAME	SYNTAX SHIFTERS
Team member 1 (Team Lead)	Rawat Ankit:220111604 Chestrawat6475@gmail.com 
Team member 2	Bhandari,Vedant:220112093 Bhandarivasu729@gmail.com 
Team member 3	Negi,Aditya :220111569 Negi4782@gmail.com 

Team member 4

Singh Amritpal:221833

Amritpal.singh2023@outlook.com



PROJECT PROGRESS DESCRIPTION (35 pts)

Project Abstract (2 pts)

(Brief restatement of your project's main goal. Max 300 words).

This project aims to create a GUI-based Python-to-C code converter that allows users to upload Python .py files and receive equivalent C code as output.

It helps beginners understand the syntax transformation between Python and C.

The system handles basic constructs such as variable declarations, conditionals, loops, function definitions, input/output handling, and basic f-string translation.

The user interface, built using Tkinter, allows code viewing, editing, conversion, and file saving. This tool simplifies learning cross-language syntax, particularly for students transitioning from Python to C.

Updated Project Approach and Architecture (2 pts)

(Describe your current approach, including system design, communication protocols, libraries used, etc. Max 300 words).

We are using Python and the Tkinter library to build the GUI.

The backend logic uses regular expressions (re) for parsing and converting Python syntax to equivalent C code.

The system handles code line-by-line and applies pattern matching for constructs like def, if, while, input(), print(), and f-strings.

A virtual display (via pyvirtualdisplay and Xvfb) ensures compatibility in headless environments. The conversion logic separates code blocks, maintains variable types, and supports main function integration. A symbol table keeps track of declared variables and types to avoid redeclaration.

Tasks Completed (7 pts)

(Describe the main tasks that have been assigned and already completed. Max 250 words).

Task Completed	Team Member
1. GUI design using Tkinter	Amritpal Singh
2. File upload + text display setup	Vedant Bhandari
3. Core Python-to-C logic	Ankit Rawat, Amritpal Singh, Aditya Negi, Vedant Bhandari
4. Save converted C file functionality	Aditya Negi

Challenges/Roadblocks (7 pts)

(Describe the challenges that you have faced or are facing so far and how you plan to solve them. Max 300 words).

1. Handling multiline Python expressions split across lines.
2. Managing indentation-based Python blocks and mapping them to {} in C.
3. Parsing f-strings with embedded variables and indices.
4. Handling nested function definitions (C does not support them)
5. Maintaining consistent variable type inference

We plan to solve these by writing better regular expressions, maintaining indentation state, and creating a flat function architecture for nested Python functions.

Tasks Pending (7 pts)

(Describe the main tasks that you still need to complete. Max 250 words).

Task Pending	Team Member (to complete the task)
Final integration of all modules	All
Test on multiple sample .py files	Ankit Rawat
Implement limited nested function conversion	Vedant Bhandari
Improve error reporting in GUI	Amritpal Singh

Project Outcome/Deliverables (2 pts)

(Describe what are the key outcomes / deliverables of the project. Max 200 words).

1. GUI-based converter application
2. Converted .c file output
3. PDF user guide
4. 5–6 tested sample conversions

Progress Overview (2 pts)

(Summarize how much of the project is done, what's behind schedule, what's ahead of schedule. Max 200 words.)

Nearly 80% of the project is complete. The GUI and core conversion logic are working.

We are finalizing the integration, improving nested function support, and expanding test cases.

We're slightly behind on f-string formatting but ahead on the GUI and usability features.

Codebase Information (2 pts)

(Repository link, branch, and information about important commits.)

Your answer here

Testing and Validation Status (2 pts)

(Provide information about any tests conducted)

Test Type	Status (Pass/Fail)	Notes
Manual GUI testing	Pass	UI elements work
Syntax test (Python → C)	Pass	Valid code generated
Edge case tests	In Progress	Needs more samples

Deliverables Progress (2 pts)

(Summarize the current status of all key project deliverables mentioned earlier. Indicate whether each deliverable is completed, in progress, or pending.)

GUI Interface	Completed
Conversion Logic	In Progress
Save Functionality	Completed
Sample .py Tests	In Progress
User Guide	Pending

