

CNC Tool Path Generation



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1 Introduction

This document outlines the plan for the development of CNC Tool Path generation.

1.1 Purpose

To display the toolpath, which can be used by the CNC machine to do the milling operation on the stock material.

1.2 Scope

To generate a simple tool path which can be used in milling operation using drill tools.

2 System Overview

The application will consist of a graphical user interface developed using Qt framework. OpenGL will be utilized for rendering purposes. Voxelization will be used to show the shape after the milling operation .

3 Functional Requirements

- Stock material display
- Real-time milling operation rendering
- Tool path rendering

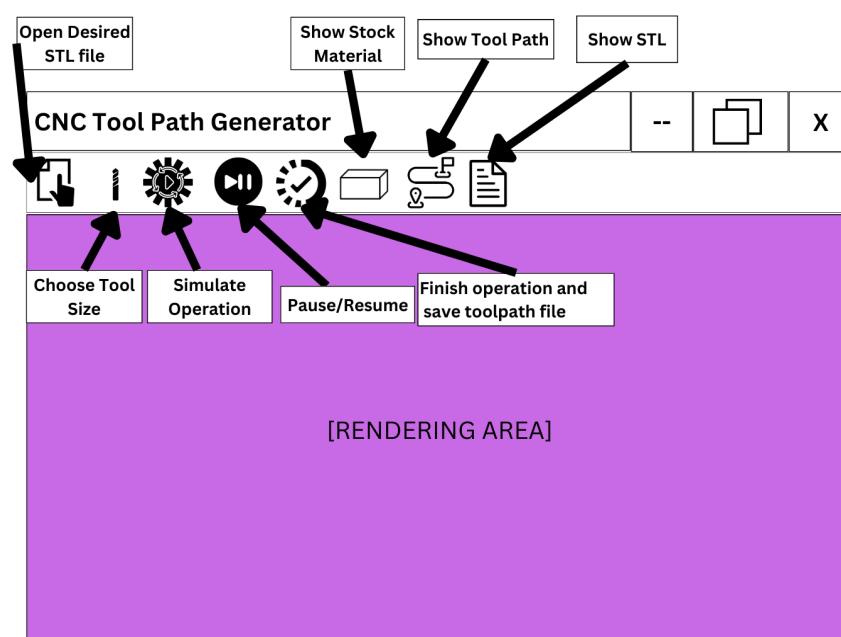
4 Tools

- C++ programming language for application development
- OpenGL for real time 3d rendering
- Qt framework for GUI development

5 Milestones and Timeline (all the dates are in 2024)

Sr. no.	Milestone	Date and time
1.	Problem statement allocation	6th May, Mon, 3:00 pm
2.	project research	6th May, Mon, 6:00 pm
3.	SRS preparation	7th May, Tue, 12:00 am
4.	SRS Approval	7th May, Tue, 03:00 pm
5.	Business Logic Development	7th May, Tue, 10:00 am
6.	GUI Development	10th May, Thurs, 10:00 am
7.	Final Submission	12th May, Sun, 11:59 pm
8.	Presentation	13th May, Sun, 10:00 am onwards

6 User Interface



7 Conclusion

The application, CNC Tool Path Generator, is a visualization tool, which helps the user to see how exactly the milling operation will be done and stock material's shape changes without actually do the operation.