



# gTangle Documentation

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## Overview

### Team members:

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Team number: 19

Team name: Lab Team

Project id: 16

TA assigned: Prajwal Krishna

Presentation date: 21 Nov 12:00-12:15

Link to github repo: <https://github.com/Digital-Image-Processing-IIITH/project-lab-team>

Link to paper: <http://pellacini.di.uniroma1.it/publications/gtangle16/gtangle16-paper.pdf>

### To run code:

1. Change directory to code.
2. Run with command `make all`
3. Run `./tangles`

### Additional dependencies:

1. This was developed in ubuntu. Not tested for others.
2. To install OpenGL: `sudo apt-get install libglu1-mesa-dev  
freeglut3-dev mesa-common-dev`
3. To install GLFW, follow steps given here:  
[https://stackoverflow.com/questions/17768008/how-to-build-install-glfw-3-and-use-i  
t-in-a-linux-project](https://stackoverflow.com/questions/17768008/how-to-build-install-glfw-3-and-use-it-in-a-linux-project)

## Files in project

### 3.1. gTangle Folder

1. animator.cpp: file used to give results when code runs in animator mode.
2. csg\_tree.h: header file for handling csg tree operations
3. input\_figures.cpp: used for taking input basic shapes or loading svg file
4. tangle\_utilities.h: utility file for handling tangles
5. animator.h: header file for animator.cpp
6. input\_figures.h: header file for input\_figure.cpp
7. rule.cpp: used to handle grammar rules.
8. draw.cpp: used to draw basic shapes and primitives.
9. rule.h: header file for rule.cpp
10. threadpool.h: header file for threadpool.cpp
11. animator\_matrix.cpp: used for basic transformation in animator mode
12. draw.h: header file for draw.cpp
13. main.cpp: one of the main program entry point
14. time\_manager.cpp: used for handling timeline in animator mode.
15. animator\_matrix.h: header file for animator\_matrix.h
16. shape.cpp: file for handling shapes
17. time\_manager.h: header file for time\_manager.cpp
18. expansion\_manager.cpp: used to handle expansion steps
19. main\_tag\_svg.cpp: used for tagging svg in gui
20. shape.h: header file for shape.cpp
21. clipper\_methods.cpp: used for clipping out polygons
22. expansion\_manager.h: header file for expansion\_manager.cpp
23. ui.h: header file for ui.cpp
24. clipper\_methods.h: header file for clipper\_methods.cpp

- 25. `main_timeline.cpp`: another main file for handling timeline based execution
- 26. `svg.cpp`: file for handling svg based operations
- 27. `yocto_math.h`: basic math library
- 28. `grammar_core.cpp`: file for parsing grammar
- 29. `svg.h`: header file for `svg.cpp`
- 30. `common.h`: common header file for storing basic program constants
- 31. `grammar_core.h`: header file for `grammar_core.cpp`
- 32. `operator.cpp`: file for handling operators used to produce tangles
- 33. `csg_tree.cpp`: file for handling csg tree operations
- 34. `operator.h`: header file for `operator.cpp`
- 35. `tangle_utilities.cpp`: contains basic tangle utility functions

### 3.2. grammars folder

Contains grammar used for producing various outputs.

### 3.3. resources folder

Contains images, fonts and svg's used by the author.