# Introduction

## What is the program about?

The Weiler – Atherton method for polygon clipping is fully implemented in this program.

## In what language is the program implemented?

This program was created using Visual Basic programming language. In this report, we explain about basic theory, how to use the application, design of the application, evaluation of the main features, work log, conclusion and remarks.

# Basic Theory

## Explain what clipping is about.

## Explain how to clip a point using the Cyrus – Beck algorithm.

### Explain how to determine whether a point is inside or outside an edge.

### Explain how to determine whether a line crosses an edge.

### Explain how to find the intersection between a line and an edge.

## Explain what polygon clipping is.

## Explain how to clip a polygon using the Weiler – Atherton algorithm.

### Explain the overall steps.

### Explain the four cases in processing each edge of the polygon.

### Write down the pseudocode (**not** code) for the Weiler – Atherton clipping algorithm. Include explanations; explain in detail.

## Explain the main limitations of the Sutherland – Hodgman algorithm

# Implementation

## Explain the main interface of the program.

## Explain every feature in the program and how to use them

# Design

## Explain the main data structures (if any) used in the program.

### How are the points and polygons represented in the program?

### How is the clipping window represented in the program?

### How are the CLP and CLW represented in the program?

## Explain the main/global variables used in the program.

## Explain how the bonuses (if done) are implemented.

# Evaluation

## Evaluate each case for point and line clipping. Try the following test cases:

### Adding a polygon into the screen.

### Adding another polygon on the screen.

### Clipping.

#### A polygon partially inside the clipping window resulting in no degenerate lines.

#### A polygon partially inside the clipping window resulting in degenerate lines.

#### A polygon entirely inside the clipping window.

#### A polygon entirely outside the clipping window.

#### A polygon entirely covering the clipping window.

## Also perform a test case for all the bonuses you implemented.

## Include screenshots of each test case.

## Explain whether each case is successful.

# Work Log

## Record the date and time of every moment you work on this assignment and job description of each member at each session.

# Conclusion and Remarks

## Does the program work as expected?

## If some parts of the program do not work as expected, explain why.

## What are your comments about this assignment