Wijeweera _et al_. 2019 – Supplementary material

Appendix

The required materials are available in the link given below.
https://drive.google.com/drive/folders/1yPwhJouF4Xn9bFxVfZc_HIJxodSAs
wsR

The folder 'Application' contains an application in C# programming language that can be used to demonstrate the proposed algorithm. The graphical user interface of the application is given in Figure 1.
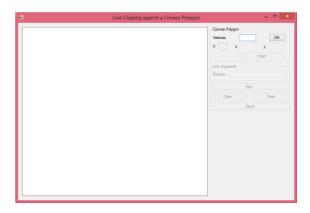

Fig 1. Graphical user interface of the C# application

- The number of vertices of the convex polygon should be entered in the text box with the label 'Vertices'.
- "0" appears in the text box with the label 'V' after pressing the button 'OK'. That means the user has to enter each coordinate of the 0th vertex of the polygon in the text boxes with labels 'x' and 'y' respectively.
- "1" appears in the text box with the label 'V' after pressing the button 'Insert'. That means the user has to enter each coordinate of the 1st vertex of the polygon in the text boxes with labels 'x' and 'y' respectively.
- Similarly, coordinates of each vertex of the convex polygon can be inserted. The convex polygon can be displayed on the panel by clicking the button 'Draw'.
- Random line segments can be generated on the panel. The number of random line segments should be entered in the text box with the label 'Number'.
- The algorithm extracts the parts of the generated line segments that are inside the convex polygon. The button 'Run' should be clicked to see the output on the panel.
- The details of the execution can be written into a text file by pressing the button 'Save'.

- The content on the panel can be cleared by pressing the button 'Clear'.

Each convex polygon in Table 2 (in Wijeweera *et al.* 2019) was tested by generating 100 random line segments. The corresponding snapshots of results are given in Figure 2. Note that the interior parts of the line segments are shown in green color and the exterior parts of the line segments are shown in red color. The convex polygon is shown in blue color.
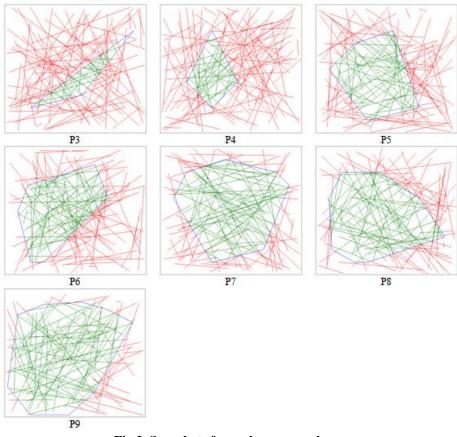

Fig 2. Snapshots for each convex polygon

The folder 'Complete Project' contains the complete C# project of the application. Follow the file path: Complete Project →clipping1→clipping1→Form1.cs. The C# programming code of the proposed algorithm is available in the file Form1.cs.