

CS531 Computational Geometry

Problem Set 2

General Point in Polygon

Handed out: Wednesday, January 25

Due: Friday, February 3

The purpose of this assignment is to solve the point-in-polygon problem for all inputs. The output is -1 , 0 , or 1 when the point is outside, on, or inside the polygon.

1. What are the degenerate inputs?
2. When does a degenerate predicate occur on a nondegenerate input?
3. Specify the algorithm in English.
4. Program the algorithm using ACP. The program reads the point and the polygon from standard input and prints the result to standard output.

Submit problems 1–3 in `name2.pdf` and problem 4 in `name2.C` where “name” denotes your last name. The ACP library is in `cs531/acp/acp2.tar`. It includes a makefile for your program with the filename `sol2` instead of `name2`. Use the CS instructional lab machines with your career accounts or ssh to `mc18.cs.purdue.edu`.