

## 1. specifications

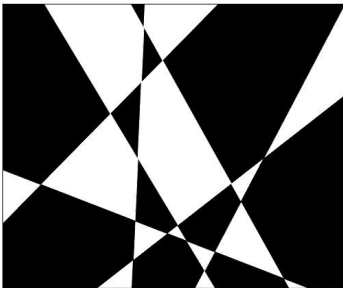
Given a subdivision of a plane defined by  $n$  lines, color each region either black or white so that any two regions sharing a boundary have different colors.

Input:  $n$  lines

Output: coloring of the regions defined by the lines

Legal solution: any two regions sharing a boundary have different colors

## 2. examples



## 3. targets

## 4. tactics

## 5. approaches

process input – for each line, incorporate that line into our coloring...

produce output – for each region, figure out its color

## 6. main steps

## 7. exit condition

## 8. setup

## 9. wrapup

## **10.special cases**

## **11.algorithm**

## **12.termination**

- a) measure of progress**
- b) making progress**
- c) reaching the end**

## **13.correctness**

- a) loop invariant**
- b) establish the loop invariant**
- c) maintain the loop invariant**
- d) final answer**

## **14.implementation**

## **15.time and space**