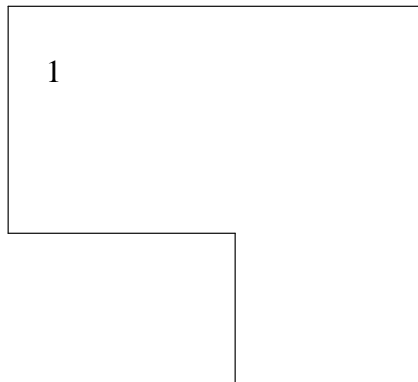


## chisel/python/pen2pen.py

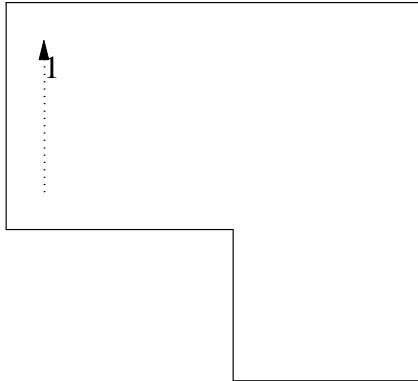
- pen2pen.py is a tool which will read in a pen file and output a pen file
- it, eventually with your help, convert concave rooms into convex rooms
- currently it
  - reads in a pen file
  - outputs a pen file (partially, walls, doors)
  - outputs a text floor plan (useful for debugging)

## chisel/python/pen2pen.py

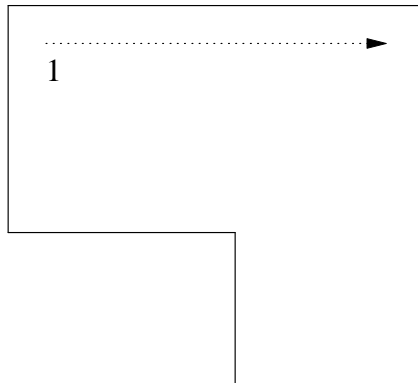
- the simple algorithm used to convert concave to convex is best described by the following diagrams:



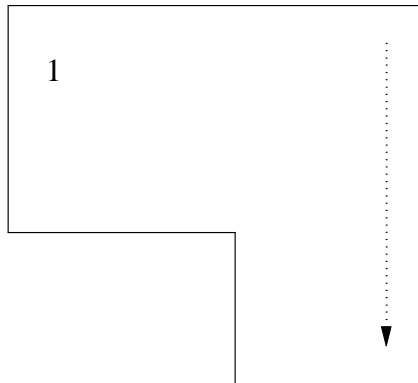
# chisel/python/pen2pen.py



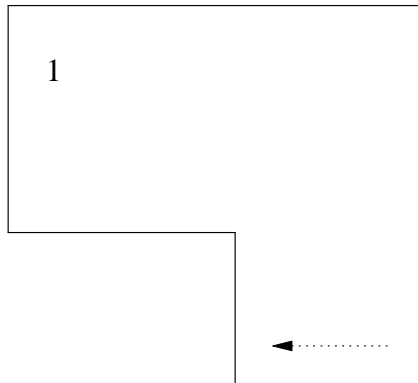
# chisel/python/pen2pen.py



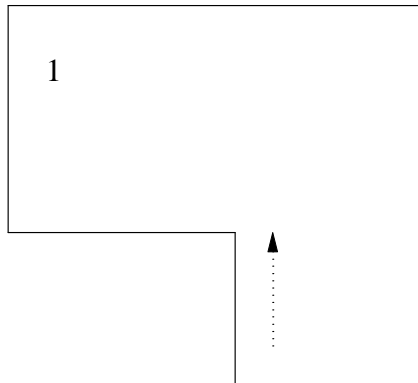
# chisel/python/pen2pen.py



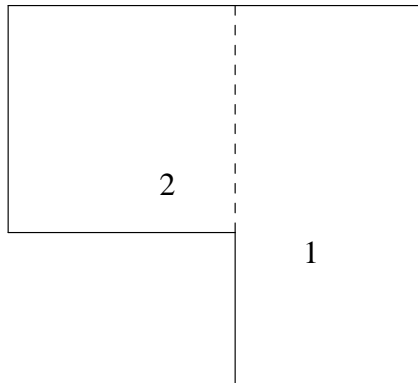
# chisel/python/pen2pen.py



# chisel/python/pen2pen.py



# chisel/python/pen2pen.py



visportal -----



## chisel/python/pen2pen.py

```
#  
# convert2Convex - keep splitting rooms until they are all convex  
#  
def convert2Convex ():  
    while not allConvex ():  
        pass
```

## chisel/python/pen2pen.py

```
#
# allConvex - return True if all rooms are convex.
#

def allConvex ():
    for r in rooms.keys ():
        if not rooms[r].isconvex:
            if len (rooms[r].walls) == 4:
                rooms[r].isconvex = True
            else:
                walkRoom (r)
                return False
    return True # all done, all convex
```

## walkRoom

- needs to walk around the perimeter of the room, checking for any concave angle
  - if a concave angle is found then the room is split into two at this point
  - the algorithm is run again on both new rooms (actually it is safer to perform `walkRoom` on every room, as the door LEADS TO will change
  
- note that the current list of walls and doors the rooms needs to be reset prior to the `walkRoom`