**CSC IP (381): Project #5 <Object Decomposition>(C++)**

**Student name: Jian Chen**

**Due Date: 05/03/2017**

**Submit Date: 05/02/2017**

**Algorithm Steps for the implementation for this project:**

step 0: read the image header

dynamically allocate objectAry, firstAry and secondAry

step 1: zeroFrame(objectAry)

zeroFrame(firstAry)

zeroFrame(secondAry)

step 2: loadImage (argv[1], objectAry)

loadImage (argv[2], firstAry)

step 3: cycleCount <-- 0

prettyPrint objectAry to Output-2

step 4: if cycleCount is 0, or 3, or 5

prettyPrint firstAry to Output-2

step 5: changeFlag <- false

cycleCount++

step 6: NorthExpansion // process all pixels in firstAry and write the result to secondAry

copyAry()

step 7: SouthExpansion // process all pixels in firstAry and write the result to secondAry

copyAry()

step 8: WestExpansion // process all pixels in firstAry and write the result to secondAry

copyAry()

step 9: EastExpansion // process all pixels in firstAry and write the result to secondAry

copyAry()

step 10: repeat step 4 to step 9 while changeFlag is true.

step 11: prettyPrint firstAry to Output-2

step 12: write image header to Output-1 and copy firstAry from [1][1]

to Output-1

step 13: close all files