OOP Assignment 7

Due: 11:59 p.m., 16 May 2016

This week we omitted much test code. So, you will write some tests this time. Based on the code of 2016-0504, write unit tests for centroid(), zout(), and createConvexPolygon():

T1(30 points) : centroid :

The centroid of Vector va [2, 1] and Vector vb [0, 1] is [1, 1]

The centroid of Vector va [2, 1, 2] , Vector vc [2, 1, 1], and Vector vd [2, 1, 3] is [2, 1, 2]

The centroid of Vector va [2, 1, 2] and Vector vb [0, 1] => format error.

T2(35 points) : zout:

Vector va [2, 1] , Vector vb [1, 0] => zin

Vector vb [1, 0], Vector va [2, 1] => zout

Vector vb [1, 0], Vector va [1, 0] => zout

Vector va [2, 1] , Vector vb [1, 0, 2] => format error

Vector va [2, 1, 1] , Vector vb [1, 0, 2] => format error

T3(35 points): Create ConvexPolygon:

Vertices are ordered correctly :

Vector va [0, 0], Vector vb[1, 0], Vector vc [2, 1], Vector vd [2, 2]

If I use va to be the reference vector, then the ConvexPolygon node will be sorted as : {va, vb, vc, vd};

If I use vc to be the reference vector, then the ConvexPolygon node will be sorted as : {vc, vd, vb, va};

Vertices are NOT ordered correctly

Vector va [1,1], Vector vb[-1,1], Vector vc [-1,-1], Vector vd [1,-1]

If I use vd to be the reference vector, then the ConvexPolygon node will be sorted as : {vd, va, vb, vc};

If I use vc to be the reference vector, then the ConvexPolygon node will be sorted as : {vc, vd, va, vb};

Vector va [0, 0, 1], Vector vb[1, 0, 1], Vector vc [2, 1, 2], Vector vd [2, 2, 1] => dimension error