

# Lab #2

## *CSE581 (Spring 2010): Interactive Computer Graphics*

Here are some sample input files that your program should exit on when trying to read them.

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1. Your program should **exit** on this file because the polygon is concave.
- 

```
5
-1. -1.
1. -1.
.5 .0
1. 1.
-1. 1.
1
5
0 1 2 3 4
0. 0. 1.
0. 0. 1.
0. 0. 1.
0. 0. 1.
0. 0. 1.
1
t 1.5 1.5
y
n
0
1
```

---

2. Your program should **exit** on this file because the vertices are oriented clockwise.

---

```
4
-1. 1.
1. 1.
1. -1.
-1. -1.
1
4
0 1 2 3
0. 0. 1.
0. 0. 1.
0. 0. 1.
0. 0. 1.
1
t 1.5 1.5
y
n
0
1
```

---

3. Your program should **exit** on this file because the polygon has three collinear points.

---

```
4
0. 1.
-1. -1.
0. -1.
1. -1.
1
4
0 1 2 3
0. 0. 1.
0. 0. 1.
0. 0. 1.
0. 0. 1.
1
t 1.5 1.5
y
n
0
0
```

---

4. Your program should **work** on this file and simply display a static yellow filled quad that has been rotated 45 degrees. No animation is defined on the object.

---

```
4
-.5 -.5
.5 -.5
.5 .5
-.5 .5
1
4
0 1 2 3
1. 1. 0.
1. 1. 0.
1. 1. 0.
1. 1. 0.
1
r 45
y
n
0
0
```

---

5. Your program should **work** on this file and simply display a static yellow unfilled quad (line width 2) that has been translated to the right by 2 units and a blue filled triangle (tip at (0, 1) and base at (-1, -1) and (1, -1)) that has been translated to the left by 2 units. No animations are defined on the objects.

---

```
5
-1. -1.
1. -1.
1. 1.
-1. 1.
0. 1.
2
4
0 1 2 3
1. 1. 0.
1. 1. 0.
1. 1. 0.
1. 1. 0.
1
t 2 0
n 2
```

```
n
0
0
3
0 1 4
0. 0. 1.
0. 0. 1.
0. 0. 1.
1
t -2 0
y
n
0
0
```

---

6. Your program should **work** on this file and render the same scene as above except that the quad is set to perform a grow/shrink animation mode. You should see the box expand and contract at each frame.
- 

```
5
-1. -1.
1. -1.
1. 1.
-1. 1.
0. 1.
2
4
0 1 2 3
1. 1. 0.
1. 1. 0.
1. 1. 0.
1. 1. 0.
1
t 2 0
n 2
n
0
0
3
0 1 4
0. 0. 1.
0. 0. 1.
0. 0. 1.
1
t -2 0
```

y  
y  
0  
0

---

7. Your program should **work** on this file and render the same scene as above except that the triangle is set to perform the local rotate animation mode. You should see the triangle stay fixed at its translated location, but rotate counter clockwise about its center at each frame.
- 

5  
-1. -1.  
1. -1.  
1. 1.  
-1. 1.  
0. 1.  
2  
4  
0 1 2 3  
1. 1. 0.  
1. 1. 0.  
1. 1. 0.  
1. 1. 0.  
1  
t 2 0  
n 2  
n  
0  
0  
3  
0 1 4  
0. 0. 1.  
0. 0. 1.  
0. 0. 1.  
1  
t -2 0  
y  
n  
2  
0

---

8. Your program should **work** on this file and render the same scene as above except that the triangle is set to perform the global rotate animation mode. You should see the triangle translated as specified, but rotate clockwise about the fixed global axis at each frame so that it will fly over and intersect the quad on the other side periodically.

---

```
5
-1. -1.
1. -1.
1. 1.
-1. 1.
0. 1.
2
4
0 1 2 3
1. 1. 0.
1. 1. 0.
1. 1. 0.
1. 1. 0.
1
t 2 0
n 2
n
0
0
3
0 1 4
0. 0. 1.
0. 0. 1.
0. 0. 1.
1
t -2 0
y
n
0
1
```

---

9. Your program should **work** on this file and render a scene with five polygons (three quads and two triangles). The first quad is filled from multi-colored vertices and is scaled by .5, translated to the top left, and performs a local counter-clockwise rotate. The first triangle is unfilled blue and is scaled by .5, translated to the bottom left, and performs a local clockwise rotate. The second quad is filled green and is scaled by .5, translated to the bottom right, and performs a local counter-clockwise rotate. The second triangle is filled red and scaled by .5, translated to the top right, and performs a local

clockwise rotate. The last quad is filled yellowish, scaled by .5, and performs both a grow/shrink and local counter-clockwise rotate.

---

```
5
-1. -1.
1. -1.
1. 1.
-1. 1.
0. 1.
5
4
0 1 2 3
1. 1. 1.
1. 1. 0.
1. 0. 1.
1. 0. 0.
2
s .5 .5
t -3. 3.
y
n
2
0
3
0 1 4
0. 0. 1.
0. 0. 1.
0. 0. 1.
2
s .5 .5
t -3. -3.
n 1.
n
1
0
4
0 1 2 3
0. 1. 0.
0. 1. 0.
0. 1. 0.
0. 1. 0.
2
s .5 .5
t 3. -3.
y
n
```

2  
0  
3  
0 1 2  
1. 0. 0.  
1. 0. 0.  
1. 0. 0.  
2  
s .5 .5  
t 3. 3.  
y  
n  
1  
0  
4  
2 4 0 1  
1. 1. 0.25  
1. 1. 0.25  
1. 1. 0.25  
1. 1. 0.25  
1  
s .5 .5  
y  
y  
2  
0

---