Create a 3D vase as a 'solid of revolution' by rotating a discretized curve around the y-axis. Give your program the following features:

- **Triangle Mesh:** Create and render the vase as a triangle mesh (for example by using GL_TRIANGLES_STRIP)\(^1\). Create at least 6 vertices along the revolution curve. Use a maximum of 45° between adjacent instances of the curve (for 45° rotations your volume is formed by eight connected curve instances). Close the hole at the bottom.

- **Shading:** Compute normals for the triangles of your mesh and perform shading. Use a fragment shader for lighting and coloring.

- **Camera Settings:** Provide keys (translation) and mouse interaction\(^2\) (rotation) that allows the user to change the position and orientation of the camera. Make sure the user can look into your vase.

![Figure 1: A discretized curve is rotated around the y-axis (revolution).](image)

**Extra credit:** Make things pretty: Use smooth shading (compute appropriate normals per vertex) and texture map your object (5 points).

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\(^{1}\) Beware of your triangle orientations (and backface culling)!

\(^{2}\) see, for example: `glutMotionFunc`