

Implicit Surfaces

$$F(x, y, z) = 0$$

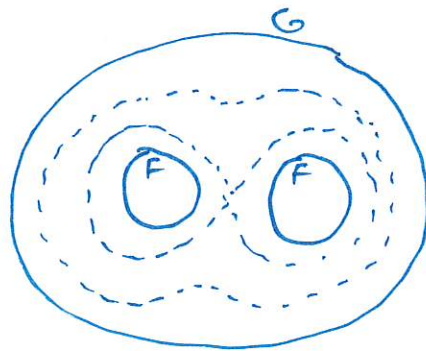
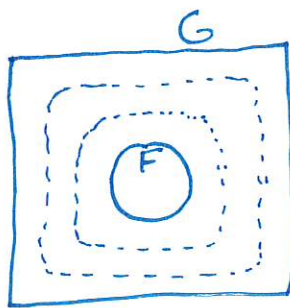
eg $(x-p) \cdot n = 0$ plane

$\|x-p\| = r$ sphere

Normal direction: $\vec{n} = \frac{\nabla F}{\|\nabla F\|}$ saw this before

Blending/morphing

$$H(\vec{x}) = (1-\lambda)F(\vec{x}) + \lambda G(\vec{x})$$



Easy to get curvature

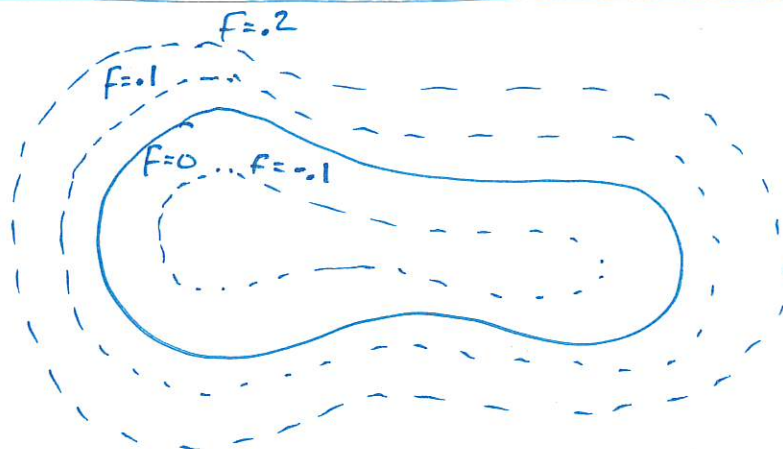
* don't have easy way to generate points

- complicates visualization

- ray tracing is possible \rightarrow next lecture

- tessellation is possible \rightarrow lecture after, maybe lab

iso surfaces



* occur in applications

- tracking the surface of a fluid

- data visualizations (surfaces of const density in medical applications)

- visualizing orbitals (chemistry)