• Iso surfaces - review
• Rubbersheeting, clip-planes, slabs
• No lab this Thursday
• lab/homework instead
• What do you see? How is it different from DX?
Marching cubes (Bill Lorensen, 1987)
clarification: triangle vertices can be on a corner - just not all 3!
Effect of a cell (grid) size:
Isosurface or not?
Rubbesheeting

- Visualizes a height-map (elevation-grid)
- Takes a scalar surface (grid cells with $x,y$ and value)
- Displaces each point by an amount based on pixel (cell) value
2D grid shown as actual elevation, each cell is moved up or down depending on the z-component of the data (so-called 2.5 D)

Note the different scales on X Y vs Z!
Clip plane

• Typically used with 3D grid data (interpolation - ? dep. ?)

• How to define the position of a plane in 3D?
  • Specify intersections with x, y, z axis (draw)
  • Arbitrary orientation: 1.2, 3.2, 5.7 (0, 0, 0 ?)
  • DX: special case of “Slab”:
    • only orthogonal (90 degree) - example?
      • 0, 2, 0  1, 0, 0  0, 0, -3
make colors (2D image) at intersection 3D grid with plane:

plane definition ?
DX - MapToPlane

- arbitrary plane definition
- (similar to OpenGL clip plane?)
DX Slab module

- plane with a “thickness”
- need to set 3 slab dimensions
- slab with 0 thickness = clip plane
• Homework/lab: import and visualize
• Import data/dem.ascii (copy to your folder!)
• Grid data, single timestep, Block
• 4 lines of header:
• size 441 by 438, ASCII, “column”
• Grid positions 0,1 (?), data type: byte (0 - 255)

P2
# CREATOR: XV version 3.10a-jumboFix+Enh of 20050501
441 438
255
19 19 19 19 19 19 19 19 19 21 21 22 22
25 26 26 28 .....
• save as dem.general
• make network: New Visual Program ...
• Import module: dem.general
• Use: autocolour, rubbersheet, isosurface, ...
• Do not simply use Visualize Data ... from import!
• What is it?
• Send me 3 screenshots (Ksnapshot)