Cubes 0.23

Cubes is bitmap voxel editor.
It has two modes, edit mode for editing 3d bitmap and view (mesh) mode for viewing,smoothing and subdivision of mesh.
X axis is left..right,Y axis is top..bottom,Z axis is fore..back.

Menu:

File	usual file handling ...
export 3D	save anaglyph (Ctrl+3 only show anaglyph)
view mesh	opened mesh from file
Edit	
undo/redo	one level undo/redo
cut/copy	cut/copy selected region
paste	paste from clipboard
delete	delete selection
Inner copy	copy inside proces without windows clipboard
Operation	
Flood fill	fill 3d region
Extend	add empty planes on each side
Double size	double size in all directions
Half size	half size in all directions
Mirror left->right	mirror left part to right (control with center row, shift selection only)
Extrude cone	extrude selection as cone to mouse position
Extrude	flat extrude selection from start selection plane

Filtr	
Not	inverse cube
Boundary	remove inner cubes
Expand	set neiber cubes
Impand	leave only inner cubes
Sum ...	
View	
Wires	switch drawing wires
Wire front	switch drawing foreground faces with wires
Cross	switch camera cross display
Face filter	Various face filter cmds, switch some face display on/off
Anaglyph	switch anaglyph display
Cross eye	Side by side cross eye 3D view
Color	choose mesh color
Normal RGB	colors by face normal
Normal radial	colors by face angle to y axis
Light	set light direction from view
Shadows	calculate shadows (slow)
White	white wires or background
Bold Line	Switch wires line width (Ctrl 3,Shift 4)
Fullscreen	fullscreen view without,Esc or F11 switch back (mesh mode is without menu)

Camera
 Reset   reset camera
 Center   set actual position as view center
 Align Y   align Y axis to nearest axis
 Head reset reset head, align it with body
 Body reset reset body, align it with head
 Head only move only head
 Resolution set resolution
 Record   start/stop recording pictures
 Povray camera copy povray camera to clipboard

Mesh
 Mesh   switch to mesh view (ctrl for cube conversion)
 Rotoid   convert cubes to mesh as rotoid
 Relax   make mesh smoother
 Triangulation convert mesh rectangles to triangles
 Precise   replace polygon with more polygons (shift for triangle mode)
 Scale Y   scale mesh Y axis (tall, Shift for fat)
 Twist Z   twist around Z axis
 Cut Y   cuts out upper half of mesh
 Reverse   reverse each face points order (affects lightning)

Mouse:
Left button set cubes,Right button clear them
With shift for select
Wheel change z coord

in mesh mode:
Left button looks around with shift rotoate around center, with control rotate around z axis.
Right button move in xz plane with control move in xy plane.
Moves are affected with current moving speed.

Wheel zooms (change view angle)

Keys:
F10 or Space show board panel (Alt+~,Alt+1,... for panels)
F   fill (SHIFT inner boundary,CTRL outer boundary,CTRL+SHIFT inner area)
X   extrude selection in z
V   extrude cone to mouse position
B   extrude half sphere to mouse position
R   rotate selection clockwise (SHIFT counter)
E   mirror selection in x axis (SHIFT y)
M   switch to mesh mode
O   rotoid mesh

in mesh mode:
M   update mesh
N   edit mode
R   relax (smooth) mesh
P   precise mesh (shift for triangle mode)
T   triangulation
C   color (normal RGB with SHIFT)
L   light (invert direction with SHIFT,calculate shadows with CTRL)
X   mirror mesh points (SHIFT or CTRL for another axis)
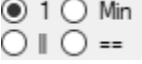F   rotate mesh points (only with SHIFT or/and CTRL)
G   face filter (R/SHIFT back or front faces)

ctrl+R	lathe, if selection then X or Y depends on cursor pos (no Selection for Z axis)
ctrl+X	cut in edit mode
ctrl+C	copy to clipboard, in mesh mode copy bitmap (emf with SHIFT)
ctrl+V	paste in edit mode,export vector in mesh mode

arrows	move in y plane
ctrl+arrows	move in z plane
shift+arrows	rotate around view center
W,S,A,D	look around (head only when moving with SHIFT)
Q,E	rotate around z axis (head only when moving with SHIFT)
CapsLock	switch head only mode

num-,num+	start moving (forward/backward with body direction),then accelerate/decelerate
num enter	stop moving (head reset with CONTROL,body reset with SHIFT)

Edit buttons and fields:

-,+	change z coodination
Pen	pen size
a	cube size (a for autosize)

rotate around axis (SHIFT selection only)

Pen	pen drawing tool
Lin	line drawing tool

box and cylinder drawing tools (CTRL or SHIFT for rectangle or ellipse)

cone drawing tool

Mode for flat drawing, || draw z depth as x, == draw z depth as y, Min draw z depth as min from x and y

Fill 3d	fill in all directions
Fill 2d	fill in z
Fill down	fill only down switch

mirror around axis

insert plane in given axis

delete plane in given axis

rotoid (number of sections)

command line:

-ip yxZr	permute mesh coords and/or reverese edges on mesh import
-is 1[,2,3]	import scale
-ir 1[,2,3]	import resize to bounding box
-ep yxZr	permute coords on mesh export
-erf xlyhzs	export resize flags (x,y,z:axis,l:lo,h:high,c:center,m:master,n:slave,e:extend)