

# NEON86

## LEGEND

color: Color(r,g,b,a=255)  
vec: Vector3 / Vector4  
mat: Matrix  
tex: Material / RTT / texture handle  
rtt: Render Target  
texHandle: texture handle  
eye.at.up: Vector3  
key: "a" or KEY\_SPACE etc.  
su.tv: UV coordinates (floats)  
nx.ny.nz: normal  
v1.v2.v3: Vertex  
Sound support: WAV, OGG

## EVENTS

\_init()  
\_shutdown()  
\_update(dt)  
\_render()  
\_render2D()  
\_charInput(letter)

## BASE

ShowMessage(caption, text)  
LogString(text)  
ExitGame()  
RestartGame()  
IsDebugMode()  
SetFPS(fps)  
doFile(scriptName)  
loadFile(fileName)  
getTime()/GetTime()  
SaveState(data)  
LoadState()

## AUDIO

### SOUND

Sound(path)  
play()  
pause()  
stop()  
setVolume(vol)  
setPan(val)  
setFrequency(val = -1)  
setCursor(val)  
loop(state)  
isLooping()  
isPlaying()  
getVolume()  
getPan()  
getFrequency()  
getCursor()  
getData()

## MATH

Color(r,g,b,a=255)  
ColorLinear(r,g,b,a=1.0)  
str2vec(text)  
vec2str(vec)

### MATRIX

Matrix()  
translate(x,y,z)  
rotate(x,y,z)  
scale(x,y,z)  
inverse()  
shadow(planeVec,lightVec)  
reflect(planeVec)  
lookAt(eye.at.up)  
m(row,col)  
row(index)  
col(index)

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```
bind(kind)
persp(eye.atPos,UP)
ortho(w,h,near,far,flipLH)
orthoEx(l,r,t,b,near,far,flipLH)
```

## VECTOR

```
Vector3(x,y,z)
Vector4(x,y,z,w)
cross(vec)
get()
color()
mag()
magSq()
lerp(b,t)
neg()
normalize()
n(index,val)
x().y().z().w()
```

## RENDERER

```
ClearScene(color)
CameraPerspective(fov,near,far,flipLH)
CameraOrthographic(w,h,near,far,flipLH)
CameraOrthographicEx(l,r,t,b,near,far,flipLH)
BindTexture(tex)
GetResolution()
GetMatrix(kind)
IsFocused()
RenderState(kind,state)
ToggleWireframe(state)
SetFog(color,kind,start,end)
SetFog(color,kind,density)
ClearFog()
SamplerState(stage,kind,state)
EnableLighting(state)
ToggleDepthTest(state)
AmbientColor(color)
ClearTarget()
```

```
DrawBox(mat,dims,color)
DrawQuad(x1,x2,y1,y2,color,flipY)
DrawQuad3D(x1,x2,y1,y2,z1,z2,color)
DrawQuadEx(vec3,color,usesDepth,flipY)
DrawPolygon(v1,v2,v3)
CullMode(mode)
FillScreen(color,flipY)
RegisterFontFile(path)
```

## SCENE

```
Scene(modelName,loadMaterials=true,optimizeMesh=false)
draw(mat)
drawSubset(index,mat)
loadModel(modelName,loadMaterials=true,optimizeMesh=false)
loadScene(modelName,loadMaterials=true,optimizeMesh=false)
getMeshes()
getLights()
getFlattenNodes()
getTargets()
findMesh(name)
findLight(name)
findTarget(name)
getRootNode()
```

## NODE

```
Node()
clone()
getName()
setName(name)
getTransform()
setTransform(mat)
getFinalTransform()
addNode(node)
addMesh(mesh)
draw(mat)
drawSubset(index, mat)
getMeshes()
getMeshParts()
```

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```
getLights()
getTargets()
getNodes()
findMesh(name)
findLight(name)
findTarget(name)
findNode(name)
getMeta(name)
```

## MESH

```
Mesh()
addFGroup(Part)
addPart(Part)
draw(mat)
clone()
getFGroups()
getParts()
clear()
setName(name)
getName()
setMaterial(tex)
getMaterial(matId)
```

## PART / FACEGROUP

```
FaceGroup()
clone()
addVertex(vert)
addIndex(index)
addTriangle(a,b,c)
setMaterial(mat)
getMaterial()
draw(mat)
build()
calcNormals()
clear()
getVertices()
getIndices()
```

## MATERIAL

```
Material()
Material(textureName)
Material(w,h)
setSamplerState(sampler,state)
getSamplerState(sampler)
loadFile(textureName)
res()
data()
getHandle(slot)
setHandle(slot, texHandle)
setDiffuse(color)
setAmbient(color)
setSpecular(color)
setEmission(color)
setPower(val)
setOpacity(val)
alphaIsTransparency(state)
alphaTest(state)
setAlphaRef(val)
setShaded(state)
```

## VERTEX

```
Vertex(x,y,z,su,tv,color,nx,ny,nz)
get()
```

## FONT

```
Font(fontFamily,size,boldness,italic)
drawText(color,text,x,y,w=0,h=0,flags)
measureText(text,flags,width)
```

## RENDER TARGET

```
RenderTarget()
RenderTarget(w,h)
RenderTarget(w,h,hasDepth=false)
getHandle()
bind()
```

## EFFECT

```
Effect(effectPath)
begin(technique)
```

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```
end().flush()
beginPass(pass)
endPass()
commit()
setBool(name,val)
setFloat(name,val)
setMatrix(name,mat)
setVector3(name,vec)
setVector4(name,vec)
setInteger(name,val)
setTexture(name,texHandle)
setTexture(name,slot,mat)
setTexture(name,rtt)
```

## LIGHT

```
Light(slot)
enable(state,slot)
setPosition(vec)
setDirection(vec)
setDiffuse(color)
setSpecular(color)
setAmbient(color)
setRange(val)
setFalloff(val)
setAttenuation(a,b,c)
setInnerAngle(val)
setOuterAngle(val)
setType(kind)
setSlot(slot)
getType()
getSlot()
```

## INPUT

```
GetKey(key)
GetKeyDown(key)
GetKeyUp(key)
GetMouseXY()
```

```
GetMouseDelta()
SetMouseXY(x,y)
GetMouse(button)
GetMouseDown(button)
GetMouseUp(button)
IsCursorVisible()
ShowCursor(state)
GetCursorMode()
SetCursorMode(mode)
ShowCursor(state)
```

## GLOBALS

### RENDERER

```
PRIMITIVEKIND_POINTLIST
PRIMITIVEKIND_LINELIST
PRIMITIVEKIND_LINESTRIP
PRIMITIVEKIND_TRIANGLELIST
PRIMITIVEKIND_TRIANGLESTRIP
PRIMITIVEKIND_TRIANGLEFAN
```

```
MATRIXKIND_VIEW
MATRIXKIND_PROJECTION
MATRIXKIND_TEXTURE0
MATRIXKIND_TEXTURE1
MATRIXKIND_TEXTURE2
MATRIXKIND_TEXTURE3
MATRIXKIND_TEXTURE4
MATRIXKIND_TEXTURE5
MATRIXKIND_TEXTURE6
MATRIXKIND_TEXTURE7
MATRIXKIND_WORLD
```

```
CLEARFLAG_COLOR
CLEARFLAG_DEPTH
CLEARFLAG_STENCIL
CLEARFLAG_STANDARD
```

TEXTURESLOT\_ALBEDO  
TEXTURESLOT\_SPECULAR  
TEXTURESLOT\_NORMAL  
TEXTURESLOT\_DISPLACE  
TEXTURESLOT\_USER\_END  
MAX\_TEXTURE\_SLOTS

FOGKIND\_NONE  
FOGKIND\_EXP  
FOGKIND\_EXP2  
FOGKIND\_LINEAR

WORLD  
VIEW  
PROJ

CULLKIND\_NONE  
CULLKIND\_CW  
CULLKIND\_CCW

LIGHTKIND\_DIRECTIONAL  
LIGHTKIND\_POINT  
LIGHTKIND\_SPOT

RENDERSTATE\_ZENABLE  
RENDERSTATE\_FILLMODE  
RENDERSTATE\_SHADEMODE  
RENDERSTATE\_ZWRITEENABLE  
RENDERSTATE\_ALPHATESTENABLE  
RENDERSTATE\_LASTPIXEL  
RENDERSTATE\_SRCBLEND  
RENDERSTATE\_DESTBLEND  
RENDERSTATE\_CULLMODE  
RENDERSTATE\_ZFUNC  
RENDERSTATE\_ALPHAREF  
RENDERSTATE\_ALPHAFUNC

RENDERSTATE\_DITHERENABLE  
RENDERSTATE\_ALPHABLENDENABLE  
RENDERSTATE\_FOGENABLE  
RENDERSTATE\_SPECULARENABLE  
RENDERSTATE\_FOGCOLOR  
RENDERSTATE\_FOGTABLEMODE  
RENDERSTATE\_FOGSTART  
RENDERSTATE\_FOGEND  
RENDERSTATE\_FOGDENSITY  
RENDERSTATE\_RANGEFOGENABLE  
RENDERSTATE\_STENCILENABLE  
RENDERSTATE\_STENCILFAIL  
RENDERSTATE\_STENCILZFAIL  
RENDERSTATE\_STENCILPASS  
RENDERSTATE\_STENCILFUNC  
RENDERSTATE\_STENCILREF  
RENDERSTATE\_STENCILMASK  
RENDERSTATE\_STENCILWRITEMASK  
RENDERSTATE\_TEXTUREFACTOR  
RENDERSTATE\_WRAP0  
RENDERSTATE\_WRAP1  
RENDERSTATE\_WRAP2  
RENDERSTATE\_WRAP3  
RENDERSTATE\_WRAP4  
RENDERSTATE\_WRAP5  
RENDERSTATE\_WRAP6  
RENDERSTATE\_WRAP7  
RENDERSTATE\_CLIPPING  
RENDERSTATE\_LIGHTING  
RENDERSTATE\_AMBIENT  
RENDERSTATE\_FOGVERTEXMODE  
RENDERSTATE\_COLORVERTEX  
RENDERSTATE\_LOCALVIEWER  
RENDERSTATE\_NORMALIZENORMALS  
RENDERSTATE\_DIFFUSEMATERIALSOURCE  
RENDERSTATE\_SPECULARMATERIALSOURCE  
RENDERSTATE\_AMBIENTMATERIALSOURCE

RENDERSTATE\_EMISSIVEMATERIALSOURCE  
RENDERSTATE\_VERTEXBLEND  
RENDERSTATE\_CLIPPLANEENABLE  
RENDERSTATE\_POINTSIZE  
RENDERSTATE\_POINTSIZE\_MIN  
RENDERSTATE\_POINTSPRITEENABLE  
RENDERSTATE\_POINTSCALEENABLE  
RENDERSTATE\_POINTSCALE\_A  
RENDERSTATE\_POINTSCALE\_B  
RENDERSTATE\_POINTSCALE\_C  
RENDERSTATE\_MULTISAMPLEANTIALIAS  
RENDERSTATE\_MULTISAMPLEMASK  
RENDERSTATE\_PATCHEDGESTYLE  
RENDERSTATE\_DEBUGMONITORTOKEN  
RENDERSTATE\_POINTSIZE\_MAX  
RENDERSTATE\_INDEXEDVERTEXBLENDENABLE  
RENDERSTATE\_COLORWRITEENABLE  
RENDERSTATE\_TWEEENFACTOR  
RENDERSTATE\_BLENDOP  
RENDERSTATE\_NORMALDEGREE  
RENDERSTATE\_SCISSORTESTENABLE  
RENDERSTATE\_SLOPESCALEDDEPTHBIAS  
RENDERSTATE\_ANTIALIASEDLINEENABLE  
RENDERSTATE\_MINTESSELLATIONLEVEL  
RENDERSTATE\_MAXTESSELLATIONLEVEL  
RENDERSTATE\_ADAPTIVETESS\_X  
RENDERSTATE\_ADAPTIVETESS\_Y  
RENDERSTATE\_ADAPTIVETESS\_Z  
RENDERSTATE\_ADAPTIVETESS\_W  
RENDERSTATE\_ENABLEADAPTIVETESSELLATION  
RENDERSTATE\_TWOSIDEDSTENCILMODE  
RENDERSTATE\_CCW\_STENCILFAIL  
RENDERSTATE\_CCW\_STENCILZFAIL  
RENDERSTATE\_CCW\_STENCILPASS  
RENDERSTATE\_CCW\_STENCILFUNC  
RENDERSTATE\_COLORWRITEENABLE1  
RENDERSTATE\_COLORWRITEENABLE2

RENDERSTATE\_COLORWRITEENABLE3  
RENDERSTATE\_BLENDFACTOR  
RENDERSTATE\_SRGBWRITEENABLE  
RENDERSTATE\_DEPTHBIAS  
RENDERSTATE\_WRAP8  
RENDERSTATE\_WRAP9  
RENDERSTATE\_WRAP10  
RENDERSTATE\_WRAP11  
RENDERSTATE\_WRAP12  
RENDERSTATE\_WRAP13  
RENDERSTATE\_WRAP14  
RENDERSTATE\_WRAP15  
RENDERSTATE\_SEPARATEALPHABLENDENABLE  
RENDERSTATE\_SRCBLENDALPHA  
RENDERSTATE\_DESTBLENDALPHA  
RENDERSTATE\_BLENDOPALPHA

SAMPLERSTATE\_ADDRESSU  
SAMPLERSTATE\_ADDRESSV  
SAMPLERSTATE\_ADDRESSW  
SAMPLERSTATE\_BORDERCOLOR  
SAMPLERSTATE\_MAGFILTER  
SAMPLERSTATE\_MINFILTER  
SAMPLERSTATE\_MIPFILTER  
SAMPLERSTATE\_MIPMAPLODBIAS  
SAMPLERSTATE\_MAXMIPLEVEL  
SAMPLERSTATE\_MAXANISOTROPY  
SAMPLERSTATE\_SRGBTEXTURE  
SAMPLERSTATE\_ELEMENTINDEX  
SAMPLERSTATE\_DMAPOFFSET

TEXTF\_NONE  
TEXTF\_POINT  
TEXTF\_LINEAR  
TEXTF\_ANISOTROPIC  
TEXTF\_PYRAMIDALQUAD

TEXTF\_GAUSSIANQUAD

TEXTF\_WRAP

TEXTF\_MIRROR

TEXTF\_CLAMP

TEXTF\_BORDER

TEXTF\_MIRRORONCE

FONTFLAG\_TOP

FONTFLAG\_LEFT

FONTFLAG\_CENTER

FONTFLAG\_RIGHT

FONTFLAG\_VCENTER

FONTFLAG\_BOTTOM

FONTFLAG\_WORDBREAK

FONTFLAG\_SINGLELINE

FONTFLAG\_EXPANDTABS

FONTFLAG\_NOCLIP

FF\_TOP

FF\_LEFT

FF\_CENTER

FF\_RIGHT

FF\_VCENTER

FF\_BOTTOM

FF\_WORDBREAK

FF\_SINGLELINE

FF\_EXPANDTABS

FF\_NOCLIP

RTKIND\_COLOR

RTKIND\_DEPTH

RTKIND\_COLOR16

RTKIND\_COLOR32

## INPUT

MOUSE\_LEFT\_BUTTON

MOUSE\_MIDDLE\_BUTTON

MOUSE\_RIGHT\_BUTTON

MOUSE\_WHEEL\_UP

MOUSE\_WHEEL\_DOWN

CURSORMODE\_DEFAULT

CURSORMODE\_CENTERED

CURSORMODE\_WRAPPED

KEY\_LBUTTON

KEY\_RBUTTON

KEY\_CANCEL

KEY\_MBUTTON

KEY\_XBUTTON1

KEY\_XBUTTON2

KEY\_BACK

KEY\_TAB

KEY\_CLEAR

KEY\_RETURN

KEY\_SHIFT

KEY\_CONTROL

KEY\_MENU

KEY\_PAUSE

KEY\_CAPITAL

KEY\_KANA

KEY\_HANGEUL

KEY\_HANGUL

KEY\_JUNJA

KEY\_FINAL

KEY\_HANJA

KEY\_KANJI

KEY\_ESCAPE

KEY\_CONVERT

KEY\_NONCONVERT

KEY\_ACCEPT

KEY\_MODECHANGE

KEY\_SPACE

KEY\_PRIOR

|               |                       |
|---------------|-----------------------|
| KEY_NEXT      | KEY_F4                |
| KEY_END       | KEY_F5                |
| KEY_HOME      | KEY_F6                |
| KEY_LEFT      | KEY_F7                |
| KEY_UP        | KEY_F8                |
| KEY_RIGHT     | KEY_F9                |
| KEY_DOWN      | KEY_F10               |
| KEY_SELECT    | KEY_F11               |
| KEY_PRINT     | KEY_F12               |
| KEY_EXECUTE   | KEY_F13               |
| KEY_SNAPSHOT  | KEY_F14               |
| KEY_INSERT    | KEY_F15               |
| KEY_DELETE    | KEY_F16               |
| KEY_HELP      | KEY_F17               |
| KEY_LWIN      | KEY_F18               |
| KEY_RWIN      | KEY_F19               |
| KEY_APPS      | KEY_F20               |
| KEY_SLEEP     | KEY_F21               |
| KEY_NUMPAD0   | KEY_F22               |
| KEY_NUMPAD1   | KEY_F23               |
| KEY_NUMPAD2   | KEY_F24               |
| KEY_NUMPAD3   | KEY_NAVIGATION_VIEW   |
| KEY_NUMPAD4   | KEY_NAVIGATION_MENU   |
| KEY_NUMPAD5   | KEY_NAVIGATION_UP     |
| KEY_NUMPAD6   | KEY_NAVIGATION_DOWN   |
| KEY_NUMPAD7   | KEY_NAVIGATION_LEFT   |
| KEY_NUMPAD8   | KEY_NAVIGATION_RIGHT  |
| KEY_NUMPAD9   | KEY_NAVIGATION_ACCEPT |
| KEY_MULTIPLY  | KEY_NAVIGATION_CANCEL |
| KEY_ADD       | KEY_NUMLOCK           |
| KEY_SEPARATOR | KEY_SCROLL            |
| KEY_SUBTRACT  | KEY_OEM_NEC_EQUAL     |
| KEY_DECIMAL   | KEY_OEM_FJ_JISHO      |
| KEY_DIVIDE    | KEY_OEM_FJ_MASSHOU    |
| KEY_F1        | KEY_OEM_FJ_TOUROKU    |
| KEY_F2        | KEY_OEM_FJ_LOYA       |
| KEY_F3        | KEY_OEM_FJ_ROYA       |



KEY\_LSHIFT  
KEY\_RSHIFT  
KEY\_LCONTROL  
KEY\_RCONTROL  
KEY\_LMENU  
KEY\_RMENU  
KEY\_BROWSER\_BACK  
KEY\_BROWSER\_FORWARD  
KEY\_BROWSER\_REFRESH  
KEY\_BROWSER\_STOP  
KEY\_BROWSER\_SEARCH  
KEY\_BROWSER\_FAVORITES  
KEY\_BROWSER\_HOME  
KEY\_VOLUME\_MUTE  
KEY\_VOLUME\_DOWN  
KEY\_VOLUME\_UP  
KEY\_MEDIA\_NEXT\_TRACK  
KEY\_MEDIA\_PREV\_TRACK  
KEY\_MEDIA\_STOP  
KEY\_MEDIA\_PLAY\_PAUSE  
KEY\_LAUNCH\_MAIL  
KEY\_LAUNCH\_MEDIA\_SELECT  
KEY\_LAUNCH\_APP1  
KEY\_LAUNCH\_APP2  
KEY\_OEM\_1  
KEY\_OEM\_PLUS  
KEY\_OEM\_COMMA  
KEY\_OEM\_MINUS  
KEY\_OEM\_PERIOD  
KEY\_OEM\_2  
KEY\_OEM\_3  
KEY\_GAMEPAD\_A  
KEY\_GAMEPAD\_B  
KEY\_GAMEPAD\_X  
KEY\_GAMEPAD\_Y  
KEY\_GAMEPAD\_RIGHT\_SHOULDER  
KEY\_GAMEPAD\_LEFT\_SHOULDER

KEY\_GAMEPAD\_LEFT\_TRIGGER  
KEY\_GAMEPAD\_RIGHT\_TRIGGER  
KEY\_GAMEPAD\_DPAD\_UP  
KEY\_GAMEPAD\_DPAD\_DOWN  
KEY\_GAMEPAD\_DPAD\_LEFT  
KEY\_GAMEPAD\_DPAD\_RIGHT  
KEY\_GAMEPAD\_MENU  
KEY\_GAMEPAD\_VIEW  
KEY\_GAMEPAD\_LEFT\_THUMBSTICK\_BUTTON  
KEY\_GAMEPAD\_RIGHT\_THUMBSTICK\_BUTTON  
KEY\_GAMEPAD\_LEFT\_THUMBSTICK\_UP  
KEY\_GAMEPAD\_LEFT\_THUMBSTICK\_DOWN  
KEY\_GAMEPAD\_LEFT\_THUMBSTICK\_RIGHT  
KEY\_GAMEPAD\_LEFT\_THUMBSTICK\_LEFT  
KEY\_GAMEPAD\_RIGHT\_THUMBSTICK\_UP  
KEY\_GAMEPAD\_RIGHT\_THUMBSTICK\_DOWN  
KEY\_GAMEPAD\_RIGHT\_THUMBSTICK\_RIGHT  
KEY\_GAMEPAD\_RIGHT\_THUMBSTICK\_LEFT  
KEY\_OEM\_4  
KEY\_OEM\_5  
KEY\_OEM\_6  
KEY\_OEM\_7  
KEY\_OEM\_8  
KEY\_OEM\_AX  
KEY\_OEM\_102  
KEY\_ICO\_HELP  
KEY\_ICO\_00  
KEY\_PROCESSKEY  
KEY\_ICO\_CLEAR  
KEY\_PACKET  
KEY\_OEM\_RESET  
KEY\_OEM\_JUMP  
KEY\_OEM\_PA1  
KEY\_OEM\_PA2  
KEY\_OEM\_PA3  
KEY\_OEM\_WSCTRL  
KEY\_OEM\_CUSEL

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KEY\_OEM\_LATTN  
KEY\_OEM\_FINISH  
KEY\_OEM\_COPY  
KEY\_OEM\_AUTO  
KEY\_OEM\_ENLW  
KEY\_OEM\_BACKTAB  
KEY\_LATTN  
KEY\_CRSEL  
KEY\_EXSEL  
KEY\_EREOF  
KEY\_PLAY  
KEY\_ZOOM  
KEY\_NONAME  
KEY\_PA1  
KEY\_OEM\_CLEAR