

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)
getPosition()
setPosition(val)
getTotalSize()
loop(state)
isLooping()
isPlaying()
getVolume()
getPan()
getFrequency()
getCursor()
getData()

MUSIC

Sound(path)
play()
pause()
stop()
setVolume(vol)
setPan(val)
isPlaying()
getVolume()
getPosition()
setPosition(val)
getTotalSize()
getPan()

NEON86

MATH

```
Color(r,g,b,a=255)
ColorLinear(r,g,b,a=1.0)
WorldToScreen(pos.view.proj)
ScreenToWorld(pos.view.proj)
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)
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()
m(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()
```

NEON86

```
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()
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)
getOwner()
```

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)
```

NEON86

```
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)
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()
getOwner()
```

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_PATCHEDGE
RENDERSTATE_DEBUGMONITORTOKEN
RENDERSTATE_POINTSIZE_MAX
RENDERSTATE_INDEXEDVERTEXBLENDENABLE
RENDERSTATE_COLORWRITEENABLE
RENDERSTATE_TWEENFACTOR
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_SEPARATEALPHAENABLE
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

TEXTA_WRAP
TEXTA_MIRROR
TEXTA_CLAMP
TEXTA_BORDER
TEXTA_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_NUMPAD2 |
| KEY_PAUSE | KEY_NUMPAD3 |
| KEY_CAPITAL | KEY_NUMPAD4 |
| KEY_KANA | KEY_NUMPAD5 |
| KEY_HANGEUL | KEY_NUMPAD6 |
| KEY_HANGUL | KEY_NUMPAD7 |
| KEY_JUNJA | KEY_NUMPAD8 |
| KEY_FINAL | KEY_NUMPAD9 |
| KEY_HANJA | KEY_MULTIPLY |
| KEY_KANJI | KEY_ADD |
| KEY_ESCAPE | KEY_SEPARATOR |
| KEY_CONVERT | KEY_SUBTRACT |
| KEY_NONCONVERT | KEY_DECIMAL |
| KEY_ACCEPT | KEY_DIVIDE |
| KEY_MODECHANGE | KEY_F1 |
| KEY_SPACE | KEY_F2 |
| KEY_PRIOR | KEY_F3 |
| 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_F24 | KEY_LAUNCH_MAIL |
| KEY_NAVIGATION_VIEW | KEY_LAUNCH_MEDIA_SELECT |
| KEY_NAVIGATION_MENU | KEY_LAUNCH_APP1 |
| KEY_NAVIGATION_UP | KEY_LAUNCH_APP2 |
| KEY_NAVIGATION_DOWN | KEY_OEM_1 |
| KEY_NAVIGATION_LEFT | KEY_OEM_PLUS |
| KEY_NAVIGATION_RIGHT | KEY_OEM_COMMA |
| KEY_NAVIGATION_ACCEPT | KEY_OEM_MINUS |
| KEY_NAVIGATION_CANCEL | KEY_OEM_PERIOD |
| KEY_NUMLOCK | KEY_OEM_2 |
| KEY_SCROLL | KEY_OEM_3 |
| KEY_OEM_NEC_EQUAL | KEY_GAMEPAD_A |
| KEY_OEM_FJ_JISHO | KEY_GAMEPAD_B |
| KEY_OEM_FJ_MASSHOU | KEY_GAMEPAD_X |
| KEY_OEM_FJ_TOUROKU | KEY_GAMEPAD_Y |
| KEY_OEM_FJ_LOYA | KEY_GAMEPAD_RIGHT_SHOULDER |
| KEY_OEM_FJ_ROYA | KEY_GAMEPAD_LEFT_SHOULDER |
| KEY_LSHIFT | KEY_GAMEPAD_LEFT_TRIGGER |
| KEY_RSHIFT | KEY_GAMEPAD_RIGHT_TRIGGER |
| KEY_LCONTROL | KEY_GAMEPAD_DPAD_UP |
| KEY_RCONTROL | KEY_GAMEPAD_DPAD_DOWN |
| KEY_LMENU | KEY_GAMEPAD_DPAD_LEFT |
| KEY_RMENU | KEY_GAMEPAD_DPAD_RIGHT |
| KEY_BROWSER_BACK | KEY_GAMEPAD_MENU |
| KEY_BROWSER_FORWARD | KEY_GAMEPAD_VIEW |
| KEY_BROWSER_REFRESH | KEY_GAMEPAD_LEFT_THUMBSTICK_BUTTON |
| KEY_BROWSER_STOP | KEY_GAMEPAD_RIGHT_THUMBSTICK_BUTTON |
| KEY_BROWSER_SEARCH | KEY_GAMEPAD_LEFT_THUMBSTICK_UP |
| KEY_BROWSER_FAVORITES | KEY_GAMEPAD_LEFT_THUMBSTICK_DOWN |
| KEY_BROWSER_HOME | KEY_GAMEPAD_LEFT_THUMBSTICK_RIGHT |
| KEY_VOLUME_MUTE | KEY_GAMEPAD_LEFT_THUMBSTICK_LEFT |
| KEY_VOLUME_DOWN | KEY_GAMEPAD_RIGHT_THUMBSTICK_UP |
| KEY_VOLUME_UP | KEY_GAMEPAD_RIGHT_THUMBSTICK_DOWN |
| KEY_MEDIA_NEXT_TRACK | KEY_GAMEPAD_RIGHT_THUMBSTICK_RIGHT |
| KEY_MEDIA_PREV_TRACK | KEY_GAMEPAD_RIGHT_THUMBSTICK_LEFT |
| KEY_MEDIA_STOP | KEY_OEM_4 |
| KEY_MEDIA_PLAY_PAUSE | 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
KEY_OEM_ATTN
KEY_OEM_FINISH
KEY_OEM_COPY
KEY_OEM_AUTO
KEY_OEM_ENLW
KEY_OEM_BACKTAB
KEY_ATTN
KEY_CRSEL
KEY_EXSEL
KEY_EREOF
KEY_PLAY
KEY_ZOOM
KEY_NONAME
KEY_PA1
KEY_OEM_CLEAR