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

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(wavPath)
play()
pause()
stop()
setVolume(vol)
setPan(val)
setCursor(val)
loop(state)
isLooping()
isPlaying()
getVolume()
getPan()
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)
bind(kind)
persp(eye,at,pos,up)

NEON86

```
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,p,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)
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()
getLights()
```

```
NEON86

        getTargets()                          MATERIAL
        getNodes()                                Material()
        findMesh(name)                            Material(textureName)
        findLight(name)                           Material(w,h)
        findTarget(name)                          setSamplerState(sampler,state)
        findNode(name)                            getSamplerState(sampler)
        getMeta(name)                             loadFile(textureName)
                                                  res()
                                                  data()
    MESH                                          getHandle(slot)
        Mesh()                                    setHandle(slot,texHandle)
        addFGroup(part)                           setDiffuse(color)
        addPart(part)                             setAmbient(color)
        draw(mat)                                 setSpecular(color)
        clone()                                   setEmission(color)
        getFGroups()                              setPower(val)
        getParts()                                setOpacity(val)
        clear()                                   alphaIsTransparency(state)
        setName(name)                             alphaTest(state)
        getName()                                 setAlphaRef(val)
        setMaterial(tex)                          setShaded(state)
        getMaterial(matId)                    VERTEX
    PART / FACEGROUP                              Vertex(x,y,z,su,tv,color,nx,ny,nz)
        FaceGroup()                               get()
        clone()                               FONT
        addVertex(vert)                           Font(fontFamily,size,boldness,italic)
        addIndex(index)                           drawText(color,text,x,y,w=0,h=0,flags)
        addTriangle(a,b,c)                        measureText(text,flags,width)
        setMaterial(mat)                      RENDER TARGET
        getMaterial()                             RenderTarget()
        draw(mat)                                 RenderTarget(w,h)
        build()                                   RenderTarget(w,h,hasDepth=false)
        calcNormals()                             getHandle()
        clear()                                   bind()
        getVertices()                         EFFECT
        getIndices()                              Effect(effectPath)
                                                  begin(technique)
```

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```
        end().flush()                          GetMouseDelta()
        beginPass(pass)                        SetMouseXY(x,y)
        endPass()                              GetMouse(button)
        commit()                               GetMouseDown(button)
        setBool(name,val)                      GetMouseUp(button)
        setFloat(name,val)                     IsCursorVisible()
        setMatrix(name,mat)                    ShowCursor(state)
        setVector3(name,vec)                   GetCursorMode()
        setVector4(name,vec)                   SetCursorMode(mode)
        setInteger(name,val)                   ShowCursor(state)
        setTexture(name,texHandle)
        setTexture(name,slot,mat)
        setTexture(name,rtt)
```

GLOBALS

RENDERER

```
    LIGHT                                  PRIMITIVEKIND_POINTLIST
        Light(slot)                        PRIMITIVEKIND_LINELIST
        enable(state,slot)                 PRIMITIVEKIND_LINESTRIP
        setPosition(vec)                   PRIMITIVEKIND_TRIANGLELIST
        setDirection(vec)                  PRIMITIVEKIND_TRIANGLESTRIP
        setDiffuse(color)                  PRIMITIVEKIND_TRIANGLEFAN
        setSpecular(color)
        setAmbient(color)                  MATRIXKIND_VIEW
        setRange(val)                      MATRIXKIND_PROJECTION
        setFalloff(val)                    MATRIXKIND_TEXTURE0
        setAttenuation(a,b,c)              MATRIXKIND_TEXTURE1
        setInnerAngle(val)                 MATRIXKIND_TEXTURE2
        setOuterAngle(val)                 MATRIXKIND_TEXTURE3
        setType(kind)                      MATRIXKIND_TEXTURE4
        setSlot(slot)                      MATRIXKIND_TEXTURE5
        getType()                          MATRIXKIND_TEXTURE6
        getSlot()                          MATRIXKIND_TEXTURE7
                                           MATRIXKIND_WORLD

    INPUT
        GetKey(key)                        CLEARFLAG_COLOR
        GetKeyDown(key)                    CLEARFLAG_DEPTH
        GetKeyUp(key)                      CLEARFLAG_STENCIL
        GetMouseXY()                       CLEARFLAG_STANDARD
```

NEON86

```
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
```

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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_TWEENFACTOR
RENDERSTATE_BLENDOP
RENDERSTATE_NORMALDEGREE
RENDERSTATE_SCISSORTESTENABLE
RENDERSTATE_SLOPESCALEDEPTHBIAS
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

TEXF_NONE
TEXF_POINT
TEXF_LINEAR
TEXF_ANISOTROPIC
TEXF_PYRAMIDALQUAD

TEXF_GAUSSIANQUAD

TEXA_WRAP
TEXA_MIRROR
TEXA_CLAMP
TEXA_BORDER
TEXA_MIRRORONCE

FONTFLAG_TOP
FONTFLAG_LEFT
FONTFLAG_CENTER
FONTFLAG_RIGHT
FONTFLAG_VCENTER
FONTFLAG_BOTTOM
FONTFLAG_WORDBREAK
FONTFLAG_SINGLELINE
FONTFLAG_EXPANDTABS
FONTFLAG_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_END
KEY_HOME
KEY_LEFT
KEY_UP
KEY_RIGHT
KEY_DOWN
KEY_SELECT
KEY_PRINT
KEY_EXECUTE
KEY_SNAPSHOT

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_F4	KEY_LSHIFT
KEY_F5	KEY_RSHIFT
KEY_F6	KEY_LCONTROL
KEY_F7	KEY_RCONTROL
KEY_F8	KEY_LMENU
KEY_F9	KEY_RMENU
KEY_F10	KEY_BROWSER_BACK
KEY_F11	KEY_BROWSER_FORWARD
KEY_F12	KEY_BROWSER_REFRESH
KEY_F13	KEY_BROWSER_STOP
KEY_F14	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

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

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KEY_ZOOM
KEY_NONAME
KEY_PA1
KEY_OEM_CLEAR