



## **YETI3D ++ (BennuGD port)**

Yeti3d Engine (c) Derek John Evans

Bennugd (c) Jose Luis Cebrian, Fenix Team, SplinterGU.

Downloads, Updates, codes, tutorials in:

<http://code.google.com/p/yeti3dplusplus/>

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(Copyleft) Colombian Developers

## Functions

### CORE

`int YETI_INIT(TYPE_ENTITY_3D cameraEntityVar, string pathMapfile)`

Initialize a 3d engine, return zero if error

`YETI_FREE()`

Terminate engine and free memory

`int YETI_LOADTEXTUREFPG(int fileFPG, int graphId)`

load a bennu fpg textures, return zero if error

`YETI_SETRENDERGRAPH(int fileFPG, int GraphID )`

Set a render graph in bennu

`int YETI_LOADTEXTURE(string texturePath, string PalettePath)`

Load textures and palette , Returns zero if error.

Created with Texture Editor available in tools directory

`YETI_SETRENDERFX(int idEffect)`

Set a postprocess effect. See "yeti3d.h" for more info.

`YETI_SETVISUAL( int YETI_RAY_WIDTH, int YETI_RAY_MAX, int YETI_CELL_MAX )`

Set render params to improve performance/render quality.

`YETI_SETSKY (int idsprite)`

Set a sky.

## ENTITIES AND PROPERTIES

YETI\_LOADSPRITE(string FilePath)

Load a sprite data file.

YETI\_ADDSPRITE(int SpriteID, TYPE\_ENTITY\_3D EntityVar)

Add a billboard(3D Sprite) entity.

int YETI\_ADDMODEL(int fileIdmodel, TYPE\_ENTITY\_3D modelEntityVar )

Load a 3d polygon model, and assign to var. return zero if error.

YETI\_MODELANIM(TYPE\_ENTITY\_3D Entity, int start, int length, int speed, int loops)

Set 3d model animation. For loops see "yeti3d.h" .

YETI\_ENTITY\_SETVISUAL(TYPE\_ENTITY\_3D entity, int width, int height, int drawmode)

Set visual data (draw params). To Drawmode params see "yeti3d.h".

YETI\_ENTITY\_GETVISUAL(TYPE\_ENTITY\_3D entity, int pointer width, int pointer height, int pointer drawmode)

Get visual data (draw params).

int YETI\_ENTITY\_LINE\_OF\_SIGHT(TYPE\_ENTITY\_3D Entity1, TYPE\_ENTITY\_3D Entity2)

Returns TRUE if two entities have a line of sight.

YETI\_ENTITY\_LOOK\_AT(TYPE\_ENTITY\_3D Entity, int x, int y, int z )

Setup a entities turn and pitch so it points towards a given point. (Doesn't use a sqrt)

YETI\_ENTITY\_LOOK\_AT2(TYPE\_ENTITY\_3D Entity, int x, int y, int z)

Setup a entities turn and pitch so it points towards a given point.

YETI\_ENTITY\_FREEZE()

Stop motion in a entity. Zeros all entity velocities. Used for pain & death AI.

YETI\_ENTITY\_FRICTION(TYPE\_ENTITY\_3D Entity, int amount)

Set friction.

YETI\_ENTITY\_MOVE\_FORWARD(TYPE\_ENTITY\_3D Entity)

Move forward a entity.

YETI\_ENTITY\_MOVE\_BACKWARDS(TYPE\_ENTITY\_3D Entity)

Move backwards a entity.

YETI\_ENTITY\_TURN\_RIGHT(TYPE\_ENTITY\_3D Entity)

Turn right a entity.

YETI\_ENTITY\_TURN\_LEFT(TYPE\_ENTITY\_3D Entity)

Turn left a entity.

YETI\_ENTITY\_TURN\_TOWARDS(TYPE\_ENTITY\_3D Entity, int x, int y)

Turn towards a given point.

YETI\_ENTITY\_SET\_VELOCITY(TYPE\_ENTITY\_3D Entity)

Setup a entities velocity based on its turn & pitch.

YETI\_ENTITY\_FORCE\_TOWARDS(TYPE\_ENTITY\_3D Entity, int x, int y, int z, int shift )

Force towards a given point.

YETI\_ENTITY\_DEFAULT(TYPE\_ENTITY\_3D Entity, int isjumping, int iscrawling, int xyfriction)

Smooth entity motion, and height fixes.

## COLLISIONS

YETI\_ENTITY\_COLLISION (TYPE\_ENTITY\_3D Entity, int enable, int CollisionId, int CollisionWithId)

Enable collision with walls and entities. Used with (CollisionWithEntity, CollisionWithWall) entity vars.

YETI\_ENTITY\_MSG ( int yeti\_entity\_pointer, int msg)

Send message to yeti entity. Used with *CollisionWithEntity* entity Var.

*By example: if (ent. CollisionWithEntity) YETI\_ENTITY\_MSG(ent. CollisionWithEntity, 100); end;*

YETI\_ENTITY\_DATA (TYPE\_ENTITY\_3D Entity, int entitydata, int type\_entity)

Set entity data, too change sprite to model and viceversa, or only change entity data.

By example: YETI\_ENTITY\_DATA(&ent, filemodel, TYPE\_MODEL3D);

## CELLS (WALLS)

`int` YETI\_LOADMAP (`string` filePath)

Load a map file.

`int` YETI\_SAVEMAP (`string` filePath)

Save a current map file .

YETI\_GETCELL(`int` x, `int` y, `TYPE_CELL_3D` cell)

Get a cell information.(Walls)

YETI\_SETCELL( `TYPE_CELL_3D` cell)

Set a cell information. (update a modified Wall)

`int` YETI\_CELLBOT(`TYPE_CELL_3D` cell, `TYPE_ENTITY_3D` Entity )

Get bottom data, compare with entity.

`int` YETI\_CELLTOP(`TYPE_CELL_3D` cell, `TYPE_ENTITY_3D` Entity )

Get top data, compare with entity.

`int` YETI\_LOADFILE(`string` filePath)

Load a disk file, returns a file ID. Returns zero if error.

`int` YETI\_FIXCOS(`int` value)

returns a fixed cosine.

`int YETI_FIXSIN(int value)`

returns a fixed sine.

`Int YETI_FIXANGLE(int x, int y)`

Return a fix angle

`Int YETI_FIXARCTAN(int y, int x)`

Returns an approximate arctan2 angle. Angles are  $0..2048 = 0..360$  degrees.

`Int YETI_FIXSQRT(int value)`

Return a Integer square root.

`int YETI_ANSIC_FRICTION( int a, int b)`

return ansic friction.

## **BULLETS**

`YETI_BULLETSHOOT (TYPE_ENTITY_3D Entity, int spriteid, int CollisionId, int CollisionWithId)`

Shoot bullet from entity.

## GLOBAL VARS

Int YETI\_AUTO\_RENDER - enable render engine

Int YETI\_BULLET\_WIDTH - bullet sprite width

Int YETI\_BULLET\_HEIGHT - bullet sprite height

Int YETI\_BULLET\_DRAWMODE - bullet sprite drawmode

Int YETI\_BULLET\_Z - bullet z var

Int YETI\_BULLET\_RADIUS - bullet radius



# **Resources**

## **MD2 Models**

<http://code.google.com/p/otherfenixbennuprojects/downloads/list>

## **External Tools:**

### **Particle generator**

Particle illusion

<http://www.wondertouch.com/>

After effects

[www.adobe.com/es/products/aftereffects.html](http://www.adobe.com/es/products/aftereffects.html)

### **Texture creator**

Texture maker

<http://www.i-tex.de/>

## **Model Editors/Converters (MD2 - quake2 model )**

Blender (MD2 exporter script)

<http://www.blender.org/>

Misfit

<http://www.misfitcode.com/misfitmodel3d/>

Quark Army Knife

<http://quark.sourceforge.net/>

Fragmotion

<http://www.fragmosoft.com/>

Milkshape

<http://chumbalum.swissquake.ch/>

Deep exploration

<http://www.righthemisphere.com/products/dexp/>

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# Port Thanks to...

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ThunderZ

SOD\_THOR

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FreeYourMind,

Josebita

Bennugd Community

Coldev - Team

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