

# **Gopher Engine**

Alessandra Chen  
aachen@ucsc.edu  
Version 1.0  
May 16,



# Class Index

## Class List

This inheritance list is sorted roughly, but not completely, alphabetically:

Ball .....	4
Camera .....	5
GameObject.....	7
Cup.....	6
Tee.....	16
InputManager .....	9
Level.....	10
Overlay .....	12
Hud.....	8
MenuScreen .....	11
Physics .....	13
Player .....	14
Shader.....	15
Tile .....	17
Vector3D.....	18



# Class Documentation

## Ball Class Reference

### Public Member Functions

- **Ball** (const **Vector3D** &, int)
- void **draw** ()
- void **drawDirection** ()
- void **push** (float &)
- void **rotateLeft** ()
- void **rotateRight** ()
- void **recharge** ()
- float **getRadius** ()

### Public Attributes

- **Vector3D** pos
- **Vector3D** vel
- **Vector3D** dir
- int **tileID**
- bool **isMoving**
- bool **isOnGround**

---

The documentation for this class was generated from the following files:

- Ball.h
- Ball.cpp

## Camera Class Reference

### Public Member Functions

- string **getModeName** ()
- void **setDefaultMode** ()
- void **setFreeMode** ()
- void **setTopViewMode** ()
- void **setToFollow** (Vector3D \*)
- void **rotLeftYAxis** ()
- void **rotRightYAxis** ()
- void **rotDownXAxis** ()
- void **rotUpXAxis** ()
- void **run** ()

---

The documentation for this class was generated from the following files:

- Camera.h
- Camera.cpp

## Cup Class Reference

Inherits **GameObject**.

### Public Member Functions

- **Cup** (char \*)
- void **draw** ()
- int **getTileId** ()
- float **getRadius** ()

### Public Attributes

- **Vector3D** pos

---

The documentation for this class was generated from the following files:

- Cup.h
- Cup.cpp

## GameObject Class Reference

Inherited by **Cup**, and **Tee**.

### Public Member Functions

- virtual void **draw** ()

### Protected Attributes

- int **tileID**
- **Vector3D** coord

---

The documentation for this class was generated from the following file:

- `GameObject.h`



## Hud Class Reference

Inherits **Overlay**.

### Public Member Functions

- **Hud** (**Player** \*, **Camera** \*)
- void **draw** ()
- void **drawResults** ()

---

The documentation for this class was generated from the following files:

- Hud.h
- Hud.cpp

## InputManager Class Reference

### Public Member Functions

- **InputManager** (**Camera \***, **Level \***, **Player \***)
- void **handleGameplayKey** (const char &)
- void **handleGameplayKeyUp** (const char &)
- void **handleCameraKey** (const char &)
- void **handleMenuKey** (const char &)

---

The documentation for this class was generated from the following files:

- InputManager.h
- InputManager.cpp

## Level Class Reference

### Public Member Functions

- void **load** (const string &)
- void **update** ()
- void **draw** ()
- void **setHiScore** (Player \*)
- bool **wonGame** ()
- **Ball** \* **getBall** ()

---

The documentation for this class was generated from the following files:

- Level.h
- Level.cpp

## MenuScreen Class Reference

Inherits **Overlay**.

### Public Member Functions

- **MenuScreen** (**Player** \*)
- void **draw** (const int &)
- int **drawLevelSelection** (const int &)
- void **setPlayerProfile** (**Player** \*p)
- void **showTopScore** ()

---

The documentation for this class was generated from the following files:

- MenuScreen.h
- MenuScreen.cpp

## Overlay Class Reference

Inherited by **Hud**, and **MenuScreen**.

### Public Member Functions

- virtual void **draw** ()

### Protected Member Functions

- void **orthoBegin** ()
- void **orthoEnd** ()
- void **drawString** (float, float, const char \*)

---

The documentation for this class was generated from the following files:

- Overlay.h
- Overlay.cpp

## Physics Class Reference

### Public Member Functions

- void **applyGravity** (**Ball \***, **Tile \***)
- void **applyBallPhysics** (**Ball \***, **Tile \***)
- bool **collision** (**Vector3D**, **Vector3D**, float, float)

---

The documentation for this class was generated from the following files:

- Physics.h
- Physics.cpp

## Player Class Reference

### Public Member Functions

- **Player** (const int &)
- int **getScore** ()
- void **resetScore** ()
- float **getPower** ()
- float **getMaxPower** ()
- void **charge** ()
- void **strike** (Ball \*)

### Public Attributes

- string **name**
- int **id**

---

The documentation for this class was generated from the following files:

- Player.h
- Player.cpp

## Shader Class Reference

### Public Member Functions

- **Shader** (char \*, char \*)
- void **bind** ()
- void **unbind** ()

---

The documentation for this class was generated from the following files:

- Shader.h
- Shader.cpp



## Tee Class Reference

Inherits **GameObject**.

### Public Member Functions

- **Tee** (char \*)
- void **draw** ()
- **Vector3D** **getCoord** () const
- int **getTileID** () const

---

The documentation for this class was generated from the following files:

- Tee.h
- Tee.cpp

## Tile Class Reference

### Public Member Functions

- **Tile** (char \*info)
- void **draw** ()
- void **drawEdges** ()
- GLfloat \* **normalize** (const GLfloat \*)

### Public Attributes

- int **numsides**
- int \* **edges**
- **Vector3D** \* **edge\_normals**
- float \* **edge\_dist**
- **Vector3D** \* **coords**
- **Vector3D** **normal**

---

The documentation for this class was generated from the following files:

- Tile.h
- Tile.cpp

## Vector3D Class Reference

### Public Member Functions

- **Vector3D** (const **Vector3D** &)
- **Vector3D** (const float &, const float &, const float &)
- **Vector3D** & **operator=** (const **Vector3D** &)
- **Vector3D** & **operator\*=** (const float &)
- **Vector3D** & **operator/=** (const float &)
- **Vector3D** **operator-** () const
- **Vector3D** **operator+** (const **Vector3D** &)
- **Vector3D** **operator-** (const **Vector3D** &)
- **Vector3D** **operator\*** (const **Vector3D** &)
- **Vector3D** **operator\*** (const float &)
- **Vector3D** **operator/** (const float &)
- bool **operator<=** (const float &)
- **Vector3D** **absolute** ()
- void **normalize** ()
- **Vector3D** **cross** (const **Vector3D** &)
- float **dot** (const **Vector3D** &)
- void **set** (const GLfloat &, const GLfloat &, const GLfloat &)

### Public Attributes

- float **x**
- float **y**
- float **z**

### Friends

- ostream & **operator<<** (ostream &, **Vector3D** &)

---

The documentation for this class was generated from the following files:

- Vector3D.h
- Vector3D.c

