Box2D Main Project

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Contents

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Hierarchical Index

1.1 Class Hierarchy

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

Chapter 2

Class Index

2.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

Chapter 3

Class Documentation

3.1 Arrow Class Reference

Public Types

- enum **Angle** { **e_angleRight** = 0, **e_angleLeft** = 180 }

Public Member Functions

- **Arrow** (const float32 angle, const float32 scale, const b2Vec2 &position, const uint32 identifier, const b2Vec2 ∗viewCenter, const b2Vec2 ∗extents)
- uint32 **GetIdentifier** () const
- uint32 **Hit** (const b2Vec2 &position, uint32 notSelectedIdentifier) const
- void **Draw** (const uint32 selectedIdentifier) const
- void **SetViewParameters** (const b2Vec2 ∗viewCenter, const b2Vec2 ∗extents)

Static Public Attributes

- static const float32 **k_size** = 3.5f

Protected Member Functions

- float32 **CalculateScale** () const
- b2Vec2 ∗ **CalculateViewportPosition** (b2Vec2 ∗const viewportPosition) const

Static Protected Member Functions

- static void **DrawArrow** (const b2Color &color, const float32 angle, const float32 scale, const b2Vec2 &position)

3.1.1 Detailed Description

Definition at line 25 of file Arrow.h.

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

- /home/surender/box2dpro/liquidfun/Box2D/Testbed/Framework/Arrow.h
- /home/surender/box2dpro/liquidfun/Box2D/Testbed/Framework/Arrow.cpp

3.2 ContactPoint Struct Reference

Public Attributes

- b2Fixture ∗ **fixtureA**
- b2Fixture ∗ **fixtureB**
- b2Vec2 **normal**
- b2Vec2 **position**
- b2PointState **state**
- float32 **normalImpulse**
- float32 **tangentImpulse**
- float32 **separation**

3.2.1 Detailed Description

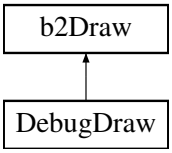
Definition at line 141 of file Test.h.

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

- /home/surender/box2dpro/liquidfun/Box2D/Testbed/Framework/Test.h

3.3 DebugDraw Class Reference

Inheritance diagram for DebugDraw:



Public Member Functions

- void **DrawPolygon** (const b2Vec2 ∗vertices, int32 vertexCount, const b2Color &color)
- void **DrawFlatPolygon** (const b2Vec2 ∗vertices, int32 vertexCount, const b2Color &color)
- void **DrawSolidPolygon** (const b2Vec2 ∗vertices, int32 vertexCount, const b2Color &color)
- void **DrawCircle** (const b2Vec2 &center, float32 radius, const b2Color &color)
- void **DrawSolidCircle** (const b2Vec2 &center, float32 radius, const b2Vec2 &axis, const b2Color &color)
- void **DrawSegment** (const b2Vec2 &p1, const b2Vec2 &p2, const b2Color &color)
- void **DrawParticles** (const b2Vec2 ∗centers, float32 radius, const b2ParticleColor ∗colors, int32 count)
- void **DrawTransform** (const b2Transform &xf)
- void **DrawPoint** (const b2Vec2 &p, float32 size, const b2Color &color)
- void **DrawString** (int x, int y, const char ∗string,...)
- void **DrawString** (const b2Vec2 &p, const char ∗string,...)
- void **DrawAABB** (b2AABB ∗aabb, const b2Color &color)

3.3.1 Detailed Description

Definition at line 36 of file Render.h.

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

- /home/surender/box2dpro/liquidfun/Box2D/Testbed/Framework/Render.h
- /home/surender/box2dpro/liquidfun/Box2D/Testbed/Framework/Render.cpp

3.4 ParticleParameter::Definition Struct Reference

Public Member Functions

- uint32 **CalculateValueMask** () const

Public Attributes

- const Value * **values**
- uint32 **numValues**

3.4.1 Detailed Description

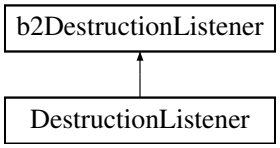
Definition at line 59 of file ParticleParameter.h.

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

- /home/surender/box2dpro/liquidfun/Box2D/Testbed/Framework/ParticleParameter.h

3.5 DestructionListener Class Reference

Inheritance diagram for DestructionListener:



Public Member Functions

- void **SayGoodbye** (b2Fixture *fixture)
- void **SayGoodbye** (b2Joint *joint)
- void **SayGoodbye** (b2ParticleGroup *group)

Public Attributes

- Test * **test**

3.5.1 Detailed Description

Definition at line 129 of file Test.h.

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

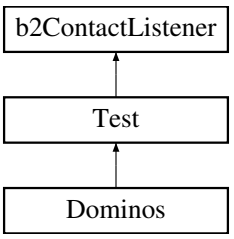
- /home/surender/box2dpro/liquidfun/Box2D/Testbed/Framework/Test.h
- /home/surender/box2dpro/liquidfun/Box2D/Testbed/Framework/Test.cpp

3.6 Dominos Class Reference

The Dominos class which makes all the elements in simulation.

`#include <Dominos.h>`

Inheritance diagram for Dominos:



Public Member Functions

- Dominos ()
- float32 GetDefaultViewZoom () const

Static Public Member Functions

- static Test * Create ()

Additional Inherited Members

3.6.1 Detailed Description

The Dominos class which makes all the elements in simulation.

It inherits Test class and has all the code to make all the elements It has two member functions GetDefaultViewZoom(), Create() and a constructor

Definition at line 27 of file Dominos.h.

3.6.2 Constructor & Destructor Documentation

3.6.2.1 Dominos::Dominos ( ) [inline]

Constructor for Dominos class A normal member taking no arguments and returning an float32 value representing the zoom.

Returns

The default zoom required, Here taken as 1.25f

Particles have radius set to 0.05f and damping to 0.1f

Definition at line 34 of file Dominos.h.

3.6.3 Member Function Documentation

3.6.3.1 static Test* Dominos::Create ( ) [inline], [static]

A normal member taking no arguments and returning an float32 value representing the zoom.

Returns

The default zoom required, Here taken as 1.25f

Definition at line 925 of file Dominos.h.

3.6.3.2 float32 Dominos::GetDefaultViewZoom ( ) const [inline], [virtual]

A normal member taking no arguments and returning an float32 value representing the zoom.

Returns

The default zoom required, Here taken as 1.25f

Reimplemented from Test.

Definition at line 917 of file Dominos.h.

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

- /home/surender/box2dpro/liquidfun/Box2D/Testbed/Tests/Dominos.h

3.7 EmittedParticleCallback Class Reference

Public Member Functions

- virtual void **ParticleCreated** (b2ParticleSystem *const system, const int32 particleIndex)=0

3.7.1 Detailed Description

Definition at line 25 of file ParticleEmitter.h.

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

- /home/surender/box2dpro/liquidfun/Box2D/Testbed/Framework/ParticleEmitter.h

3.8 FullscreenUI Class Reference

Public Types

- enum **Selection** {
  e_SelectionTestPrevious = 0, **e_SelectionTestNext**, **e_SelectionParameterPrevious**, **e_SelectionParameterNext**,
  e_SelectionNone }

Public Member Functions

- void **Reset** ()
- bool **GetEnabled** () const
- void **SetEnabled** (bool enable)
- uint32 **Mouse** (const int32 button, const int32 state, const int32 previousState, const b2Vec2 &mousePosition)
- uint32 **GetSelection** () const
- void **SetParticleParameterSelectionEnabled** (const bool enable)
- bool **GetParticleParameterSelectionEnabled** () const
- void **Draw** (const std::string &footer)
- void **SetViewParameters** (const b2Vec2 *viewCenter, const b2Vec2 *extents)

3.8.1 Detailed Description

Definition at line 26 of file FullscreenUI.h.

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

- /home/surender/box2dpro/liquidfun/Box2D/Testbed/Framework/FullscreenUI.h
- /home/surender/box2dpro/liquidfun/Box2D/Testbed/Framework/FullscreenUI.cpp

3.9 ParticleParameter Class Reference

Classes

- struct Definition
- struct Value

Public Types

- enum **Options** {
  OptionStrictContacts = 1 << 0, **OptionDrawShapes** = 1 << 1, **OptionDrawParticles** = 1 << 2, **OptionDrawJoints** = 1 << 3,
  OptionDrawAABBs = 1 << 4, **OptionDrawContactPoints** = 1 << 5, **OptionDrawContactNormals** = 1 << 6, **OptionDrawContactImpulse** = 1 << 7,
  OptionDrawFrictionImpulse = 1 << 8, **OptionDrawCOMs** = 1 << 9, **OptionDrawStats** = 1 << 10, **OptionDrawProfile** = 1 << 11 }

Public Member Functions

- void **Reset** ()
- void **SetDefinition** (const Definition *definition, uint32 definitionCount)
- uint32 **Get** () const
- void **Set** (uint32 index)
- void **Increment** ()
- void **Decrement** ()
- bool **Changed** (bool *const restart)
- uint32 **GetValue** () const
- const char * **GetName** () const
- uint32 **GetOptions** () const
- void **SetRestartOnChange** (bool enable)
- bool **GetRestartOnChange** () const
- int32 **FindIndexByValue** (uint32 value) const

Static Public Attributes

- static const uint32 **k_DefaultOptions**
- static const Value * **k_particleTypesPtr**
- static const uint32 **k_particleTypesCount**
- static const Value **k_particleTypes** []
- static const Definition **k_defaultDefinition** []

Protected Member Functions

- const Value * **FindParticleParameterValue** () const

3.9.1 Detailed Description

Definition at line 24 of file ParticleParameter.h.

3.9.2 Member Data Documentation

3.9.2.1 const ParticleParameter::Definition ParticleParameter::k_defaultDefinition [static]

Initial value:

```
=
{
    {
        ParticleParameter::k_particleTypes,
        ParticleParameter::k_particleTypesCount
    },
}
```

Definition at line 165 of file ParticleParameter.h.

3.9.2.2 const uint32 ParticleParameter::k_DefaultOptions [static]

Initial value:

```
=
    OptionDrawShapes | OptionDrawParticles
```

Definition at line 44 of file ParticleParameter.h.

3.9.2.3 const ParticleParameter::Value ParticleParameter::k_particleTypes [static]

Initial value:

```
=
{
    { b2_waterParticle, ParticleParameter::k_DefaultOptions, "water" },
    { b2_waterParticle, ParticleParameter::k_DefaultOptions |
                ParticleParameter::OptionStrictContacts, "water (strict)" },
    { b2_springParticle, ParticleParameter::k_DefaultOptions, "spring" },
    { b2_elasticParticle, ParticleParameter::k_DefaultOptions, "elastic" },
    { b2_viscousParticle, ParticleParameter::k_DefaultOptions, "viscous" },
    { b2_powderParticle, ParticleParameter::k_DefaultOptions, "powder" },
    { b2_tensileParticle, ParticleParameter::k_DefaultOptions, "tensile" },
    { b2_colorMixingParticle, ParticleParameter::k_DefaultOptions,
        "color mixing" },
    { b2_wallParticle, ParticleParameter::k_DefaultOptions, "wall" },
    { b2_barrierParticle | b2_wallParticle,
        ParticleParameter::k_DefaultOptions, "barrier" },
    { b2_staticPressureParticle, ParticleParameter::k_DefaultOptions,
        "static pressure" },
    { b2_waterParticle, ParticleParameter::k_DefaultOptions |
                ParticleParameter::OptionDrawAABBs, "water (bounding boxes)" },
}
```

Definition at line 163 of file ParticleParameter.h.

3.9.2.4 const uint32 ParticleParameter::k_particleTypesCount [static]

Initial value:

```
=
    B2_ARRAY_SIZE(ParticleParameter::k_particleTypes)
```

Definition at line 161 of file ParticleParameter.h.

3.9.2.5 const ParticleParameter::Value * ParticleParameter::k_particleTypesPtr [static]

Initial value:

```
=
    ParticleParameter::k_particleTypes
```

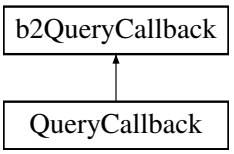
Definition at line 159 of file ParticleParameter.h.

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

- /home/surender/box2dpro/liquidfun/Box2D/Testbed/Framework/ParticleParameter.h
- /home/surender/box2dpro/liquidfun/Box2D/Testbed/Framework/ParticleParameter.cpp

3.10 QueryCallback Class Reference

Inheritance diagram for QueryCallback:



Public Member Functions

- **QueryCallback** (const b2Vec2 &point)
- bool **ReportFixture** (b2Fixture *fixture)

Public Attributes

- b2Vec2 **m_point**
- b2Fixture * **m_fixture**

3.10.1 Detailed Description

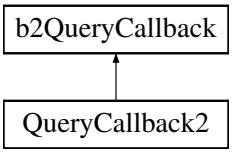
Definition at line 142 of file Test.cpp.

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

- /home/surender/box2dpro/liquidfun/Box2D/Testbed/Framework/Test.cpp

3.11 QueryCallback2 Class Reference

Inheritance diagram for QueryCallback2:



Public Member Functions

- **QueryCallback2** (b2ParticleSystem ∗particleSystem, const b2Shape ∗shape, const b2Vec2 &velocity)
- bool **ReportFixture** (b2Fixture ∗fixture)
- bool **ReportParticle** (const b2ParticleSystem ∗particleSystem, int32 index)

Public Attributes

- b2ParticleSystem ∗ **m_particleSystem**
- const b2Shape ∗ **m_shape**
- b2Vec2 **m_velocity**

3.11.1 Detailed Description

Definition at line 174 of file Test.cpp.

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

- /home/surender/box2dpro/liquidfun/Box2D/Testbed/Framework/Test.cpp

3.12 RadialEmitter Class Reference

Public Member Functions

- void **SetPosition** (const b2Vec2 &origin)
- const b2Vec2 & **GetPosition** () const
- void **SetSize** (const b2Vec2 &size)
- b2Vec2 **GetSize** () const
- void **SetVelocity** (const b2Vec2 &velocity)
- const b2Vec2 & **GetVelocity** () const
- void **SetSpeed** (const float32 speed)
- float32 **GetSpeed** () const
- void **SetParticleFlags** (uint32 flags)
- uint32 **GetParticleFlags** () const
- void **SetColor** (const b2ParticleColor &color)
- const b2ParticleColor & **GetColor** () const
- void **SetEmitRate** (const float32 emitRate)
- float32 **GetEmitRate** () const
- void **SetParticleSystem** (b2ParticleSystem ∗const particleSystem)
- b2ParticleSystem ∗ **GetParticleSystem** () const
- void **SetCallback** (EmittedParticleCallback ∗const callback)
- EmittedParticleCallback ∗ **GetCallback** () const
- void **SetGroup** (b2ParticleGroup ∗const group)
- b2ParticleGroup ∗ **GetGroup** () const
- int32 **Step** (const float32 dt, int32 ∗const particleIndices, const int32 particleIndicesCount)

3.12.1 Detailed Description

Definition at line 36 of file ParticleEmitter.h.

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

- /home/surender/box2dpro/liquidfun/Box2D/Testbed/Framework/ParticleEmitter.h

3.13 Settings Struct Reference

Test settings. Some can be controlled in the GUI.

`#include <Test.h>`

Public Attributes

- b2Vec2 **viewCenter**
- float32 **hz**
- int32 **velocityIterations**
- int32 **positionIterations**
- int32 **particleIterations**
- int32 **drawShapes**
- int32 **drawParticles**
- int32 **drawJoints**
- int32 **drawAABBs**
- int32 **drawContactPoints**
- int32 **drawContactNormals**
- int32 **drawContactImpulse**
- int32 **drawFrictionImpulse**
- int32 **drawCOMs**
- int32 **drawStats**
- int32 **drawProfile**
- int32 **enableWarmStarting**
- int32 **enableContinuous**
- int32 **enableSubStepping**
- int32 **enableSleep**
- int32 **pause**
- int32 **singleStep**
- int32 **printStepTimeStats**
- int32 **strictContacts**
- float32 stepTimeOut

  Measures how long did the world step took, in ms.

3.13.1 Detailed Description

Test settings. Some can be controlled in the GUI.

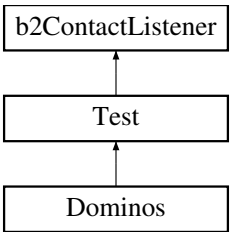
Definition at line 56 of file Test.h.

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

- /home/surender/box2dpro/liquidfun/Box2D/Testbed/Framework/Test.h

3.14 Test Class Reference

Inheritance diagram for Test:



Public Member Functions

- void **DrawTitle** (const char ∗string)
- virtual void **Step** (Settings ∗settings)
- virtual void **Keyboard** (unsigned char key)
- virtual void **KeyboardUp** (unsigned char key)
- void **ShiftMouseDown** (const b2Vec2 &p)
- virtual void **MouseDown** (const b2Vec2 &p)
- virtual void **MouseUp** (const b2Vec2 &p)
- virtual void **MouseMove** (const b2Vec2 &p)
- void **LaunchBomb** ()
- void **LaunchBomb** (const b2Vec2 &position, const b2Vec2 &velocity)
- void **SpawnBomb** (const b2Vec2 &worldPt)
- void **CompleteBombSpawn** (const b2Vec2 &p)
- virtual void **JointDestroyed** (b2Joint ∗joint)
- virtual void **ParticleGroupDestroyed** (b2ParticleGroup ∗group)
- virtual void **BeginContact** (b2Contact ∗contact)
- virtual void **EndContact** (b2Contact ∗contact)
- virtual void **PreSolve** (b2Contact ∗contact, const b2Manifold ∗oldManifold)
- virtual void **PostSolve** (b2Contact ∗contact, const b2ContactImpulse ∗impulse)
- void **ShiftOrigin** (const b2Vec2 &newOrigin)
- virtual float32 **GetDefaultViewZoom** () const
- void **ColorParticleGroup** (b2ParticleGroup ∗const group, uint32 particlesPerColor)
- void **InitializeParticleParameters** (const uint32 filterMask)
- void **RestoreParticleParameters** ()

Protected Attributes

- b2Body ∗ **m_groundBody**
- b2AABB **m_worldAABB**
- ContactPoint **m_points** [k_maxContactPoints]
- int32 **m_pointCount**
- DestructionListener **m_destructionListener**
- DebugDraw **m_debugDraw**
- int32 **m_textLine**
- b2World ∗ **m_world**
- b2ParticleSystem ∗ **m_particleSystem**
- b2Body ∗ **m_bomb**
- b2MouseJoint ∗ **m_mouseJoint**
- b2Vec2 **m_bombSpawnPoint**
- bool **m_bombSpawning**
- b2Vec2 **m_mouseWorld**
- bool **m_mouseTracing**
- b2Vec2 **m_mouseTracerPosition**
- b2Vec2 **m_mouseTracerVelocity**

- int32 **m_stepCount**
- b2Profile **m_maxProfile**
- b2Profile **m_totalProfile**
- ParticleParameter::Value * **m_particleParameters**
- ParticleParameter::Definition **m_particleParameterDef**

Static Protected Attributes

- static const b2ParticleColor **k_ParticleColors** []
- static const uint32 **k_ParticleColorsCount**

Friends

- class **DestructionListener**
- class **BoundaryListener**
- class **ContactListener**

3.14.1 Detailed Description

Definition at line 153 of file Test.h.

3.14.2 Member Data Documentation

3.14.2.1 const b2ParticleColor Test::k_ParticleColors [static], [protected]

Initial value:

```
= {
    b2ParticleColor(0xff, 0x00, 0x00, 0xff),
    b2ParticleColor(0x00, 0xff, 0x00, 0xff),
    b2ParticleColor(0x00, 0x00, 0xff, 0xff),
    b2ParticleColor(0xff, 0x8c, 0x00, 0xff),
    b2ParticleColor(0x00, 0xce, 0xd1, 0xff),
    b2ParticleColor(0xff, 0x00, 0xff, 0xff),
    b2ParticleColor(0xff, 0xd7, 0x00, 0xff),
    b2ParticleColor(0x00, 0xff, 0xff, 0xff),
}
```

Definition at line 239 of file Test.h.

3.14.2.2 const uint32 Test::k_ParticleColorsCount [static], [protected]

Initial value:

```
=
    B2_ARRAY_SIZE(Test::k_ParticleColors)
```

Definition at line 240 of file Test.h.

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

- /home/surender/box2dpro/liquidfun/Box2D/Testbed/Framework/Test.h
- /home/surender/box2dpro/liquidfun/Box2D/Testbed/Framework/Test.cpp

3.15 TestEntry Struct Reference

Public Attributes

- const char * **name**
- TestCreateFcn * **createFcn**

3.15.1 Detailed Description

Definition at line 119 of file Test.h.

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

- /home/surender/box2dpro/liquidfun/Box2D/Testbed/Framework/Test.h

3.16 ParticleParameter::Value Struct Reference

Public Attributes

- uint32 **value**
- uint32 **options**
- const char * **name**

3.16.1 Detailed Description

Definition at line 47 of file ParticleParameter.h.

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

- /home/surender/box2dpro/liquidfun/Box2D/Testbed/Framework/ParticleParameter.h

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