Changes Made to the Chipmunk Engine

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Contents

1 Purpose of Document

This document lists the changes that have been made to the the Chipmunk engine. The first section describes what has been changed in the code of the engine and the second section describes the changes to the comments

2 Changes to the Code

This section lists the changes made to the code in the chipmunk engine.

2.1 chipmunk_private

This file was split into 8 seperate files to follow the seperation of concerns principle. The 8 files are listed below:

- cpArbiter_private
- cpArray_private
- cpBody_private
- cpConstraint_private
- cpHashSet_private
- cpShape_private
- cpSpace_private
- cpSpatialIndex_private

3 Changes to the Comments

This section lists the comments added to and/or the comments modified in each file of the chipmunk engine.

3.1 cpBody

This section lists the comments added and modified in the cpBody file

3.1.1 Comments Added

No comments were added to the cpBody file

3.1.2 Comments Modified

- Changed "Set the position of a body" to "Get the position of a body" above the function cpBodyGetPosition

3.2 cpConstraint

This section lists the comments added and modified in the cpConstraint file

3.2.1 Comments Added

- Added a detailed description to the top of the file: "Constraints connect two cpBody objects together. cpConstraint is the base constraint struct that the other constraints build off of."

3.2.2 Comments Modified

No comments were modified in the cpConstraint file.

3.3 cpDampedRotarySpring

This section lists the comments added and modified in the cpDampedRotarySpring file

3.3.1 Comments Added

- Added a detailed description to the top of the file: "Like a cpDampedSpring, but operates in a rotational fashion."

3.3.2 Comments Modified

- Changed "Get the damping of the spring." to "Get the damped rotary spring force callback" above the function cpDampedRotarySpringGetSpringTorqueFunc
- Changed "Set the damping of the spring." to "Set the damped rotary spring force callback" above the function cpDampedRotarySpringSetSpringTorqueFunc

3.4 cpDampedSpring

This section lists the comments added and modified in the cpDampedSpring file

3.4.1 Comments Added

- Added a detailed description to the top of the file: "A spring with a damper. While a spring is not technically a constraint, the damper is. The spring forces are simply a convenience."

3.4.2 Comments Modified

- Changed "Check if constraint is a slide joint" to "Check if constraint is a damped spring" above the function cpConstraintIsDampedSpring
- Changed "Get the damping of the spring." to "Get the damped spring force callback" above the function cpDampedSpringGetSpringForceFunc
- Changed "Set the damping of the spring." to "Set the damped spring force callback" above the function cpDampedSpringSetSpringForceFunc

3.5 cpGearJoint

This section lists the comments added and modified in the cpGearJoint file

3.5.1 Comments Added

- Added a detailed description to the top of the file: "Maintains a specific angular velocity between the two bodies."

3.5.2 Comments Modified

- Changed "Check if constraint is a damped rotary springs" to "Check if constraint is a gear joint" above the function cpConstraintIsGearJoint
- Changed "Get the angular distance of each ratchet". to "Get the ratio of a gear joint" above the function cpGearJointGetRatio

3.6 cpGrooveJoint

This section lists the comments added and modified in the cpGrooveJoint file

3.6.1 Comments Added

- Added a detailed description to the top of the file: "'Similar to a pivot joint, but one of the anchors is a line segment that the pivot can slide in."

3.6.2 Comments Modified

- Changed "Check if constraint is a slide joint" to "Check if constraint is a groove joint" above the function cpConstraintIsGrooveJoint

3.7 cpPinJoint

This section lists the comments added and modified in the cpPinJoint file

3.7.1 Comments Added

- Added a detailed description to the top of the file: "The two anchor points are always the same distance apart."

3.7.2 Comments Modified

No comments were modified in the cpPinJoint file.

3.8 cpPivotJoint

This section lists the comments added and modified in the cpPivotJoint file

3.8.1 Comments Added

- Added a detailed description to the top of the file: "Pivot joints hold two points on two bodies together allowing them to rotate freely around the pivot."

3.8.2 Comments Modified

- Changed "Check if constraint is a slide joint" to "Check if constraint is a pivot joint" above the function cpConstraintIsPivotJoint

3.9 cpPolyShape

This section lists the comments added and modified in the cpPolyShape file

3.9.1 Comments Added

- Added a detailed description to the top of the file:"A convex polygon shape. Slowest, but most flexible collision shape."

3.9.2 Comments Modified

No comments were modified in the cpPolyShape file.

3.10 cpRatchetJoint

This section lists the comments added and modified in the cpRatchetJoint file

3.10.1 Comments Added

- Added a detailed description to the top of the file: "Create rotary ratchets similar to a socket wrench. Forces one body to only follow one direction of rotation from the other body."

3.10.2 Comments Modified

- Changed "Check if constraint is a damped rotary springs" to "Check if constraint is a ratchet joint" above the function cpConstraintIsRatchetJoint
- Changed "Get the phase offset of the ratchet" to "Set the phase offset of the ratchet" above the function cpRatchetJointSetPhase

3.11 cpRotaryLimitJoint:

This section lists the comments added and modified in the cpRotaryLimitJoint file

3.11.1 Comments Added

- Added a detailed description to the top of the file: "Constrains the bodies' orientations to be within a certain angle of each other."

3.11.2 Comments Modified

- Changed "Check if constraint is a damped rotary springs" to "Check if constraint is a rortary limit joint" above the function cpConstraintIsRotaryLimitJoint
- Changed "Allocate a damped rotary limit joint" to "Allocate a rotary limit joint" above the function cpRotaryLimitJointAlloc
- Changed "Initialize a damped rotary limit joint" to "Initialize a rotary limit joint" above the function cpRotaryLimitJointInit
- Changed "Allocate and initialize a damped rotary limit joint" to "Allocate and initialize a rotary limit joint" above the function cpRotaryLimitJointNew
- Changed "Get the minimum distance the joint will maintain between the two anchors." to "Get the minimum orientation the joint will maintain between the two anchors." above the function cpRotaryLimitJointGetMin
- Changed "Set the minimum distance the joint will maintain between the two anchors." to "Set the minimum orientation the joint will maintain between the two anchors." above the function cpRotaryLimitJointSetMin
- Changed "Get the maximum distance the joint will maintain between the two anchors." to "Get the maximum orientation the joint will maintain between the two anchors." above the function cpRotaryLimitJointGetMax
- Changed "Set the maximum distance the joint will maintain between the two anchors." to "Set the maximum orientation the joint will maintain between the two anchors." above the function cpRotaryLimitJointSetMax

3.12 cpShape

This section lists the comments added and modified in the cpShape file

3.12.1 Comments Added

- Added a detailed description to the top of the cpCircleShape group : " A perfect circle shape. Fastest and simplest collision shape."
- Added a detailed description to the top of the cpSegmentShape group : "Meant mainly as a static shape. Can be beveled in order to give them a thickness."

3.12.2 Comments Modified

- Changed "The cpShape struct defines the shape of a rigid body." to "The cpShape struct defines the shape of a rigid body. cpShape is the base struct that the other shapes build off of." as the detailed description at the top of the file

3.13 cpSimpleMotor

This section lists the comments added and modified in the cpSimpleMotor file

3.13.1 Comments Added

- Added a detailed description to the top of the file: "Maintains a specific angular relative velocity between two objects."

3.13.2 Comments Modified

- Changed "Check if constraint is a damped rotary springs" to "Check if constraint is a simple motor" above the function cpConstraintIsSimpleMotor
- Changed "Opaque struct type for damped rotary springs." to "Opaque struct type for simple motors" above the definition of the struct cpSimpleMotor

3.14 cpSlideJoint

This section lists the comments added and modified in the cpSlideJoint file

3.14.1 Comments Added

- Added a detailed description to the top of the file: "Slide joints hold the distance between points on two bodies between a minimum and a maximum."

3.14.2 Comments Modified

No comments were modified in the cpSlideJoint file.

3.15 cpSpace

This section lists the comments added and modified in the cpSpace file

3.15.1 Comments Added

- Added a detailed description to the top of the file: "Containers for simulating objects in Chipmunk. Controls how all the rigid bodies, shapes and constraints interact together."
- Split up the cpSpaceGetIterations and cpSpaceSetIterations comment into two separate comments.
- Split up the cpSpaceGetGravity and cpSpaceSetGravity comment into two separate comments.
- Split up the cpSpaceGetDamping and cpSpaceSetDamping comment into two separate comments.
- Split up the cpSpaceGetIdleSpeedThreshold and cpSpaceSetIdleSpeedThreshold comment into two separate comments.
- Split up the cpSpaceGetSleepTimeThreshold and cpSpaceSetSleepTimeThreshold comment into two separate comments.
- Split up the cpSpaceGetCollisionSlop and cpSpaceSetCollisionSlop comment into two separate comments.
- Split up the cpSpaceGetCollisionBias and cpSpaceSetCollisionBias comment into two separate comments.
- Split up the cpSpaceGetCollisionPersistence and cpSpaceSetCollisionPersistence comment into two separate comments.
- Split up the cpSpaceGetUserData and cpSpaceSetUserData comment into two separate comments.

3.15.2 Comments Modified

- Changed "Space/body iterator callback function type." to "Space/shape iterator callback function type." above the callback function cpSpaceShapeIteratorFunc
- Changed "Call @c func for each shape in the space." to " Call @c func for each constraint in the space." above the function cpSpaceEachConstraint

- Changed "Switch the space to use a spatial has as it's spatial index." to "Switch the space to use a spatial hash as it's spatial index."above the function cpSpaceUseSpatialHash

3.16 cpVect

This section lists the comments added and modified in the cpVect file

3.16.1 Comments Added

- Added a comment to the cpMat2x2New function"Convenience constructor for cpMat2x2 structs."
- Added a comment to the cpMat2x2Transform function"Multiply the matrix with a vector."

3.16.2 Comments Modified

No comments were modified in the cpVect file.

3.17 chipmunk

This section lists the comments added and modified in the chipmunk file

3.17.1 Comments Added

- Added a detailed description to the top of the Misc group :"A set of miscellaneous functions for calculating the area, moment of inertia and other properties of shapes."

3.17.2 Comments Modified

No comments were modified in the chipmunk file.

3.18 cpArbiter_private

This section lists the comments added and modified in the cpArbiter_private file

3.18.1 Comments Added

- Added a comment above the cpArbiterThread struct"A doubly linked list for the cpArbiter values."
- Added a comment above the cpArbiter struct"Tracks pairs of colliding shapes."
- Added a comment above the cpCollisionInfo struct"Holds information about the collision."

- Added a comment above the cpContact struct"Holds information about the contact points of the collision."

3.18.2 Comments Modified

No comments were modified in the cpArbiter_private file.

3.19 cpSpace_private

This section lists the comments added and modified in the cpSpace_private file

3.19.1 Comments Added

- Added a comment above the cpSpace struct"Containers for simulating objects in Chipmunk."

3.19.2 Comments Modified

No comments were modified in the cpSpace_private file.

3.20 cpArray_private

This section lists the comments added and modified in the cpArray_private file

3.20.1 Comments Added

- Added a comment above the cpArray struct"Chipmunk's array data structure."

3.20.2 Comments Modified

No comments were modified in the cpArray_private file.

3.21 cpShape_private

This section lists the comments added and modified in the cpShape_private file

3.21.1 Comments Added

- Added a comment above the cpCircleShape struct"A perfect circle shape."
- Added a comment above the cpPolyShape struct"A convex polygon shape."
- Added a comment above the cpSemgmentShape struct"A beveled (rounded) segment shape."

- Added a comment above the cpShape struct"The cpShape struct defines the shape of a rigid body"
- Added a comment above the cpShapeMassInfo struct"Struct that holds information about the mass of the shape"

3.21.2 Comments Modified

No comments were modified in the cpShape_private file.

3.22 cpConstraint_private

This section lists the comments added and modified in the cpConstraint_private file

3.22.1 Comments Added

- Added a comment above the cpConstraintClass struct"Struct that holds function callback pointers for constraints."
- Added a comment above the cpPinJoint struct"The two anchor points are always the same distance apart."
- Added a comment above the cpSlideJoint struct"Slide joints hold the distance between points on two bodies between a minimum and a maximum."
- Added a comment above the cpPivotJoint struct"Pivot joints hold two points on two bodies together allowing them to rotate freely around the pivot"
- Added a comment above the cpGrooveJoint struct"Similar to a pivot joint, but one of the anchors is a line segment that the pivot can slide in"
- Added a comment above the cpDampedSpring struct"A spring with a damper"
- Added a comment above the cpDampedRotarySpring struct"Like a cpDampedSpring, but operates in a rotational fashion"
- Added a comment above the cpRotaryLimitJoint struct"Constrains the bodies' orientations to be within a certain angle of each other"
- Added a comment above the cpRatchetJoint struct"Create rotary ratchet similar to a socket wrench"
- Added a comment above the cpGearJoint struct"Maintains a specific angular velocity between the two bodies"
- Added a comment above the cpSimpleMotor struct"Maintains a specific angular relative velocity between two objects"

3.22.2 Comments Modified

No comments were modified in the cpConstraint_private file.