

Java 3D: Collision Detection

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Multimedia and Computer Graphics



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Wake-Up Conditions and Criteria

- `WakeUpCondition` is an abstract class specifying a single wakeup Condition.
- It has a subclass called `WakeUpCriterion` ...
- ... and it has subclasses called `WakeUpOr`, `WakeUpAnd` (and others ...).
- The class `WakeUpCriterion` has subclasses `WakeUpOnExit`, `WakeUpOnEntry` (and others ...).
- These wake up criteria can be logically combined:

`WakeUpOr ([WakeUpOnExit, WakeUpOnEntry])`
arrayof `WakeUpCriterion`

The Behavior Class

- A `Behavior` *leaf node* in a scene graph allows the addition of user-defined “actions” to the scene graph, for example:
 - movements, rotations, color changes ...
- `Behavior` is an abstract class; it defines two methods that must be over-ridden (see `CollisionBehavior1`) by a subclass:
- `Initialization` method: called once when the behavior becomes "live". Sets the initial state of a `Behavior` object, and specifies its initial wakeup condition(s).
- `processStimulus` method: This is the important method ...

The Behavior Class

- A `Behavior` leaf node hands a `WakeupCondition` object to the behavior scheduler which returns `criteria`, an enumeration (`Enum`) of the conditions.
- `criteria` is produced by the `wakeupOn` method.
- The `processStimulus` method provides:
 - Code to extract wake up details, from `criteria`, that caused the object's awakening.
 - Code to perform the manipulations associated with the wake up details (eg a green sphere goes red),
 - Code to establish this behavior's next new `WakeupCondition`