Animation

This module serves as a way to store the animation information exported from Maya files using our exporter. The animation player will use this in conjunction with the Mesh ID in order to produce an animated model.

**Dependencies**

* Access to the following:
  + KeyFrame
  + Frame
* Accessed by the following:
  + Animation Manager
  + Animation Blender
  + Frame Interpolator

**Public Interface**

|  |  |  |  |
| --- | --- | --- | --- |
| **Return** | **Name** | **Parameters** | **Description** |
| bool | Load | Const char\* filename  // name of the file we will be loading in to read | Opens a file and reads all relevant information and initializes the variables to the appropriate data. Returns false if given an invalid file or if it reads invalid information. |
| float | GetFrameDuration | void | Returns the duration of the animation. |
| Bool | GetLoopingFlag | Void | Returns the bIsLooping flag |
| Void | SetLoopingFlag | Const bool IsLooping | Sets the Animation’s bIsLooping to the passed in value |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

**Time to Complete Estimate**

* Total 2 days
* 1 day Implementation
* 1 day Testing/Integration

**Module Author(s)**

* Justin Maza

Animation Blender

This module serves as a way to blend multiple animations together in order to interpolate them and their frames.

**Dependencies**

* Access to the following:
  + Animation
  + Frame Interpolator
* Accessed by the following:
  + Animation Player

**Public Interface**

|  |  |  |  |
| --- | --- | --- | --- |
| **Return** | **Name** | **Parameters** | **Description** |
| void | Process | Animation\* current,  Animation\* previous | Takes a previous and a current animation and finds the appropriate frames on both to interpolate them |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

**Time to Complete Estimate**

* Total 3 days
* 2 days Implementation
* 1 day Testing/Integration

**Module Author(s)**

* Justin Maza

Animation Player

This module serves as a way to play the interpolated animation.

**Dependencies**

* Access to the following:
  + Animation
  + Frame Interpolator
* Accessed by the following:
  + Animation Player

**Public Interface**

|  |  |  |  |
| --- | --- | --- | --- |
| **Return** | **Name** | **Parameters** | **Description** |
| void | Play | Animation\* pAnimation | Sets the passed in animation’s m\_bIsPlaying to true and then processes the animation; Checks to see if the animation is looping or not. |
| Void | Stop | Void | Stops the current animation by setting its m\_bIsPlaying to false |
| void | Reset | Void | Sets the key time of the current animation to 0 |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

**Time to Complete Estimate**

* Total 2 days
* 1 day Implementation
* 1 day Testing/Integration

**Module Author(s)**

* Justin Maza

Animation Manager

This module serves as a way to access all the possible animations within the game using an enumerated value to act as an index into the vector of animations within the class. This is a singleton, and as such has a single static instance since we will only need one instance of this in order to do what we need.

**Dependencies**

* Access to the following:
  + Animation
* Accessed by the following:
  + Animation Player
  + Frame Interpolator
  + Animation Blender
  + Renderer

**Public Interface**

|  |  |  |  |
| --- | --- | --- | --- |
| **Return** | **Name** | **Parameters** | **Description** |
| Static AnimationManager\* | GetInstance | void | Returns the static instance of the class |
| Static void | DeleteInstance | Void | Deletes the current instance of the animation manager |
| Void | Initialize | Void | Initializes the animation manager and all its member variables |
| Int | LoadAnimation | Const char\* filename | Creates a new instance of the Animation class and calls its load function using the passed in file name. It then adds this newly-created animation to the manager’s vector of Animations |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

**Time to Complete Estimate**

* Total 2 days
* 1 day Implementation
* 1 day Testing/Integration

**Module Author(s)**

* Justin Maza

Frame Interpolator

This module serves as a way to interpolate frames either within one animation or within two separate animations to create a smooth transition between animations.

**Dependencies**

* Access to the following:
  + Animation
  + KeyFrame
* Accessed by the following:
  + Animation Blender

**Public Interface**

|  |  |  |  |
| --- | --- | --- | --- |
| **Return** | **Name** | **Parameters** | **Description** |
| void | SetAnimation | Const Animation\* pAnimation | Sets the Frame Interpolator’s Animation instance to that of the passed in Animation |
| Void | AddTime | Float fTime | Adds the passed in time to the current time |
| void | SetTime | Float fTime | Sets the current time to that of the passed in value |
| Void | Process | Void | Interpolates between KeyFrames based on the Interpolator’s current time. |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

**Time to Complete Estimate**

* Total 2 days
* 1 day Implementation
* 1 day Testing/Integration

**Module Author(s)**

* Justin Maza