Anibody

A 2d Canvas-based game engine

*Version: 1.1.8*

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# Preface

## About this document

This documentation will cover the Anibody Engine in great detail. Please note, that not all of the components, methods and attributes are described here. This can have one of the following reasons:

1. The feature is not important or deprecated.
2. The feature should only be used internally (often marked by the underscore “\_” in front of the name)
3. It was simply forgotten to be added to the document. In that case, a reminder or a short message is more than welcomed.

## About the methodology

In this document, the methodology is a combination of listing the features with further description plus a short excerpt of an example (code snippets), in which the respective feature is being used.

|  |
| --- |
| // It is hoped that by doing so the learning effect will be increased |

Please see: FAQ for further examples.

## Who wants to use Anibody?

Anyone who wants to bring his or her interactive animations or games to live and does not want to start from scratch. Anyone who wants to express them on the web and does not want to discriminate the viewer for what operation system or browser they use.

## Idea of the Engine

It provides the developer a possibility to implement game elements or interactive animations with less writing effort in a short period of time.

It is HTML5-conform and hence cross-browser friendly.

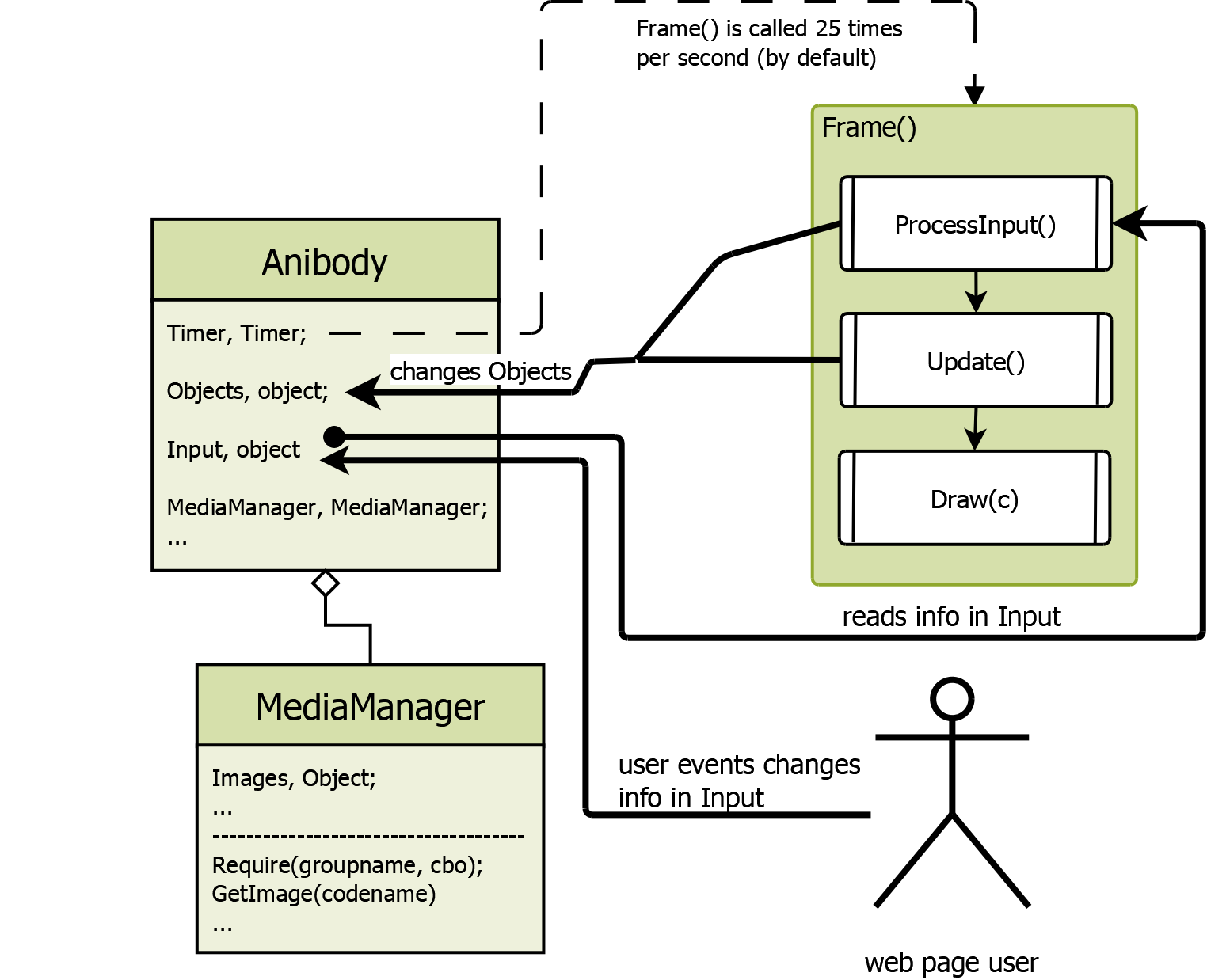
## Installation

|  |
| --- |
| <!-- You do not have to use jquery but if you do than jquery should be included before anibody -->  <script type="text/javascript" src="jqueryXYZ.js"></script>  <script type="text/javascript" src="anibodyXYZ.js"></script> |

## Basic Concept

All game related objects, which are registered for the Anibody engine, are going through the “game cycle”, when the Frame() method is called.

By default, a Timer calls the Frame() method 25 times per second – also known as FPS ( frames per second).



### The Game Cycle — here Frame()

**ProcessInput()**

In this phase of the game cycle, it is usual practice to read the information, which is saved in Anibody.Input, and manipulate the representative object or the environment according to your game logic.

For example: If the W key is pressed then move the representative game object 10 pixel upwards.

|  |
| --- |
| //this.Engine is a reference to the Anibody engine  if (this.Engine.Input.Keys.W.FramesPressed === 1) {  this.Move(0, -10);  } |

**Update()**

In this phase, if it is necessary to your game logic, you can check the respective object or the general environment and handle the situation accordingly.

For example: If the mouse is over the graphical representation of the object, switch the cursor of the mouse to the “pointer”.

|  |
| --- |
| if(this.IsMouseOver)  this.Engine.Input.Mouse.Cursor.pointer(); |

Note: *At the end of ProcessInput(), the engine will resolve over which object the mouse is hovering, so now in the Update() you can safely check for this.*

**Draw(c)**

In this phase every object with a graphical representation will be drawn on the canvases context (c variable).

# Documentation

## Anibody

Description:

This is the main class. This is the engine. By default, it contains a timer, which calls the Frame()-Methode 25 times per second (known as FPS, “frames per second”). Through an option parameter the engine’s timer can be set to a different value or being canceled completely.

Extends from: none

Parameter:

|  |  |  |  |
| --- | --- | --- | --- |
| Parameter | | | |
| Nr. | Name | Type | Description |
| 1 | html\_id | string | The id of the targeted canvas as a string |
| 2 | opt | object | Object that contains further engine configuration. (See example) |

|  |
| --- |
| var engine = new Anibody("ExampleID",{  flagConstantLoop : true,  flagPreventKeyboardStrokesToBubbleUp : true,  flagPreventContextClickBubbleToUp : true,  flagMediaManager : true,  flagMouseInput : true,  flagKeyboardInput : true,  flagTouchHandler : true,  flagTouch2FakeMouseClick : true,  flagStorage : true,  flagIntervalHandler : true,  fps : 25  }); |

Attributes

|  |  |  |
| --- | --- | --- |
| Name | Type | Description |
| EI | integer | Engine Index of this engine |
| CurrentFrame | integer | The current frame |
| Objects | object | Object that holds the game related Objects. |
| Canvas | <canvas> | Reference to the canvas html element |
| Context | CanvasRenderingContext2D | Reference to the context of this canvas |

Methods:

|  |  |  |
| --- | --- | --- |
| Name | Start | |
| Description | Starts the Game Cycle/Loop | |
| Parameter - none | | |
| Returns | undefined | undefined |
| Name | Stop | |
| Description | Stops the Game Cycle/Loop | |
| Parameter - none | | |
| Returns | undefined | undefined |

|  |  |  |
| --- | --- | --- |
| Name | Pause | |
| Description | Pauses the Game Cycle/Loop (keeps processing input and drawing) | |
| Parameter - none | | |
| Returns | undefined | undefined |

|  |  |  |
| --- | --- | --- |
| Name | Continue | |
| Description | Continues the Game Cycle/Loop | |
| Parameter - none | | |
| Returns | undefined | undefined |

|  |  |  |
| --- | --- | --- |
| Name | Frame | |
| Description | Calls one loop through the Game Cycle/Loop – Calls ProcessInput(), Update(), Draw() | |
| Parameter - none | | |
| Returns | undefined | undefined |

|  |  |  |
| --- | --- | --- |
| Name | ProcessInput | |
| Description | Calls the ProcessInput() of every registered object. More Info see The Game Cycle — here Frame() | |
| Parameter - none | | |
| Returns | undefined | undefined |

|  |  |  |  |
| --- | --- | --- | --- |
| Name | | Update | |
| Description | | Calls the Update() of every registered object. More Info see The Game Cycle — here Frame() | |
| Parameter - none | | | |
| Returns | | undefined | undefined |
|  | | | |
| Name | | Draw | |
| Description | | Calls the Draw() of every registered object. More Info see The Game Cycle — here Frame() | |
| Parameter | | | |
| Nr. | Name | Type | Description |
| 1 | c | CanvasRenderingContext2D | The Canvas’ context, on which will be used to draw (usually it is Anibody.Context) |
| Returns | | undefined | undefined |

|  |  |  |  |
| --- | --- | --- | --- |
| Name | | AddProcessInputFunctionObject | |
| Description | |  | |
| Parameter | | | |
| Nr. | Name | Type | Description |
| 1 | pio | object (cbo) |  |
| 2 | prio | number |  |
| Returns | | undefined | undefined |

Example

## Anibody.\*

### EngineObject

Description:

Every object used in the AniBody-Engine should derive from this class. EngineObjects are used in the background of the engine, not visible to the user.

Extends from: none

Parameter: none

Attributes

|  |  |  |
| --- | --- | --- |
| Name | Type | Description |
| Engine | Anibody | A reference to the engine, to which the EngineObject belongs. |
| EI | integer | Engine Index, the index of the engine, to which this |
| UniqueID | integer | Every EngineObject receives |

Methods:

|  |  |  |  |
| --- | --- | --- | --- |
| Name | | Register | |
| Description | | Adds the EngineObject to an engine | |
| Parameter | | | |
| Nr. | Name | Type | Description |
| 1 | prior | number | The priority in the Anibody.Objects.Queue (optional) |
| 2 | ei | integer | The Engine index of the engine, to which it should belong (default = 0) |
| Returns | | integer | Reference number – can be used for Anibody.RemoveObject() |

|  |  |  |
| --- | --- | --- |
| Name | Deregister | |
| Description | Removes a registered object.  This function should be called if the instance won't be used anymore | |
| Parameter | | |
| Returns | undefined |  |

Example

|  |
| --- |
| var s = new Anibody.shapes.Shape(5,1,8,3,1,3); // triangle  s.Register(); // you may use null if you don't need to use priorities  // ... let's say the Shape served its purpose  s.Deregister(); |

### ABO

### Widget

### DefaultCamera

### DefaultTerrain

## ECMAScriptExtension

## Anibody.debug.\*

### DumbObject

### Consolero

### DebugWindow

### Monitor

## Anibody.input.\*

- not the classes are important but the structure and the meaning of the data here

## Anibody.nav.\*

### BoxMenu

### Gallery

### SlideMenu > Tab

## Anibody.shapes.\*

### Shape

### Rectangle

### Circle

### Triangle

## Anibody.ui.\*

### Alert

### Confirm

### Prompt

### MultipleChoice

### ColorPicker

### Button

### InputField

### Slider

### Switch

### Toaster

## Anibody.util.\*

### PriorityQueue

### Timer

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### Task > Step

## Anibody.visual.\*

### ABOPresenter

### Animation

### ImageObject

### ABText

### CoordinateSystem

### Highlighting

### Spline

### Spotting

### Sprite

## Anibody.static.\*

# FAQ

## Where can I find an example project?

The Github repository is a big example. You can clone it and test it on your own server or click the link found in the README.md to test it without any further time to waste.