FmvMaker

FmvMaker was designed for creating FMVs, point'n click adventures, or other types of games/plugins, which use some kind of video playlist with possible interactions. **FmvMaker** uses only (!) native Unity components to ensure a maximum of compatiblity with all of Unity's supported build platforms. If you encounter errors or problems, pls create a new issue at the Github repository. We'll try to help you asap. :)

Getting started

You can get **FmvMaker** either via the Unity AssetStore (link-->) or the Releases section of this Github repository. After importing the **FmvMaker** asset into your Unity project, you'll find a separate **FmvMaker** folder as subfolder of your Assets folder. The **FmvMaker** directory contains all necessary data, to get started. All examples are currently online videos, provided via static link on github, as Unity does not support Youtube video streaming. Furthermore Unity AssetStore developers are not allowed to ship videos, with their packages. Please note, that the music tracks used in our demos are from https://www.bensound.com

Important for you are the Resources folder (within the **FmvMaker** folder) where you'll be placing your content (videos, images, etc...) as well as your configuration files. The Prefabs folder contains default prefabs, especially for prototyping. In the Scenes folder are demo scenes, to give you an overview of the comprehensive possibilities of **FmvMaker**.

If you want to use the demo videos provided by us (Unity doesn't like video files in their AssetStore assets), pls check out the Releases section of this repository. Each release will contain a separate .zip file with the current demo videos in it. See https://github.com/FireDragonGameStudio/FmvMaker/releases for details. For an easier start, we decided to add an online reference for all demo videos. For how to use videos from within your Assets folder, check the FmvMaker configuration section.

VideoData for FmvMaker is a configuration file stored within its Resources folder (*FmvMaker/Resources/*) and is basically a JSON list of single video elements, which are qualified via their names. This means that there is no complex hierarchy to build, each video element stands for its own. Please always choose simple, but unique names for your video elements. You can compare a video element to some kind of *state*, which will lead to *1 to n* next *states*. The previous *state* doesn't matter at all. Yes, this leads to a long list of elements, but it also helps to keep things simple.

The next kind of important data are so called **Clickables**. Informations about **Clickables** is also stored within the **FmvMaker** Resources folder in the Unity project (*FmvMaker/Resources/*) in a separate configuration file. These elements stand for triggering actions when clicking on it. It doesn't matter if these actions are e.g. items or the trigger for the next video. The only difference is the item handling, of which a basic version is already included in **FmvMaker** and will be explained in the further sections.

How do I build a video JSON list?

For those who are not familiar with JSON everything you need to know for now is, that there is a certain structure that has to be followed. Everything where a single "Element" (either **VideoData** or **Clickables**) belongs, is represented by ...

```
{ [ {...},{...},{...},{...},{...},{...},{...} ] }
```

So there is one pair of curly brackets (one bracket at the beginning and on at the end), which defines a single element scope. The square brackets represent an array. This array is the collection of either **Video Data** elements or **Clickables**, depending on what file you're creating. Curly brackets, within the square brackets represent the scopre for an item (represented by ...) of the previous defined array. It´s simple right? Usually there is some formatting done, to keep the overview. Like this:

```
{
   [{
       ...
       },{
       ...
       },{
       ...
       },{
       ...
       }
   ]
}
```

A good introduction to JSON can be found here https://developer.mozilla.org/en-US/docs/Learn/JavaScript/Objects/JSON

Please make sure, you don't forget the brackets or commas in your configuration file!!! There is no JSON error check at the moment (it's on our ToDo list!), so if you're encountering an error, when loading your data it's very likely that you forgot a bracket, or have an issue with the overall structure.

We'll create a simple prototype called CircleFmv along the next sections. This prototype is also shipped as demo project within **FmvMaker**.

What does a “VideoElement” look like?

In this section we'll start to create our configuration file for our **VideoData** as well as our first video element. We'll add data step by step, so pls make sure to follow along and don't skip a section. First create a new configurtaion file (e.g. DemoVideoData.json) within the **FmvMaker** Resources folder (*FmvMaker/Resources/*), which will hold the **VideoData** information.

Basic structure

The version, including a basic structure of our **VideoData** file will look like this:

```
{
  "VideoList": [{
      "Name": "UniqueVideoName",
    }
  ]
}
```

This is the minimum configuration for a single video elememt. It has a *Name* field, which corresponds to your desired video filename within the **FmvMaker** Resources video folder (*FmvMaker/Resources/FmvMakerVideos*). Please remember to use the filename without the file extension within the configuration files.

Add navigation actions

Having the player moving from one to the next video file is made possible via the so called **NavigationTargets**. A video can have *1-n* **NavigationTargets** which are represented as an array of so called **Clickables**. This array contains the name/s of objects which control the next video/s and actions. Dont't forget: the value of the *Name* field (in this Case UniqueVideName) corresponds to your desired video filename within the Resources folder (*FmvMaker/Resources/FmvMakerVideos*). Remember to use the filename without the file extension. The *Name* field/s of the **NavigationTargets** corresponds to **Clickables** which are defined in a separate configuration file. When having multiple **NavigationTargets**, make sure that the entries are separated via ,

```
{
  "VideoList": [{
      "Name": "UniqueVideoName",
      "NavigationTargets": [{
          "Name": "NextUniqueClickable"
        }, {
          "Name": "AnotherUniqueClickable"
        }
      ]
    }
  ]
}
```

Field	Type	Default value	Optional	Description
Name	string	""		A unique name, which is set via the *Name* field and should match the filename of the video file, which sould be played.
NavigationTargets	string[]	[]		A video can have *1-n* **NavigationTargets** which are represented as an array of so called **Clickables**. This array contains the name/s of objects which control the next video/s and actions.

Each name used as **NavigationTarget** must have it's own **Clickable** within our **Clickables** configuration file. Similar to our first video element, the additional video elements can also reference **NagivationTargets**.

Let's try to build a circle navigation, where our player can move from **UniqueVideoName** to **NextUniqueVideoName**. From there to **AnotherUniqueVideoName** and from **AnotherUniqueVideoName** back to **UniqueVideoName**. Usually there is some kind of video elemtent to start, so we'll use **UniqueVideoName** for that. As a result we need a fourth video element called **DifferentUniqueVideoName** to have a video transition from **AnotherUniqueVideoName** back to **UniqueVideoName**. This results in a simple circular video route through our game. Pls note that the needed **Clickables** will be created within the next sections.

IMPORTANT: The **UniqueVideoName** and **DifferentUniqueVideoName** are representing basically the same video element, but offer different approaches.

```
{
  "VideoList": [{
      "Name": "UniqueVideoName",
      "NavigationTargets": [{
          "Name": "UniqueClickable"
        }
      ]
    }, {
      "Name": "NextUniqueVideoName",
      "NavigationTargets": [{
          "Name": "NextClickable"
        }
      ]
    }, {
      "Name": "AnotherUniqueVideoName",
      "NavigationTargets": [{
          "Name": "AnotherClickable"
        }
      ]
    }, {
      "Name": "DifferentUniqueVideoName",
      "NavigationTargets": [{
          "Name": "UniqueClickable"
        }
      ]
    }
  ]
}
```

What does a “ClickableElement” look like?

In this section we'll start to create our configuration file for our **Clickables** as well as reference our video elements to our **Clickables**. We'll add data step by step, so pls make sure to follow along and don't skip a section.

Add Clickable data

After defining our video route, we'll need **Clickables** to navigate through our defined route. This will we configured in our **Clickables** configuration file. Create a new file (e.g. DemoClickableData.json) in *FmvMaker/Resources/*, which will hold the **Clickables** information. A basic structure with one **Clickable** element will look like this:

```
{
  "ClickableList": [{
      "Name": "ClickableMe",
      "Description": "Fancy, but short description.",
      "PickUpVideo": "WhichVideoToPlayOnClick",
      "IsNavigation": true,
      "RelativeScreenPosition": {
        "x": 0.5,
        "y": 0.2
      }
    }
  ]
}
```

Field	Type	Default value	Optional	Description
Name	string	""		Similar to our **VideoData** the **Clickables** also need a unique name, which is set via the *Name* field.
Description	string	""	x	The *Description* will help to identify the usage.
PickUpVideo	string	""		*PickUpVideo* will refer to the video element to play, when the player clicks on this **Clickable**. The refered video element must exist with the same name within the **VideoData** configuration file.
IsNavigation	bool	false	x	*IsNavigation* helps to distinguish between pure navigation and collectable items. The item section will explain this in more detail.
RelativeScreenPosition	Vector2	x=0.5, y=0.5	x	Last but not least, the *RelativeScreenPosition* will define where this **Clickable** will be shown on screen. Pls make sure to only use values between 0 and 1, where x=0, y=0 refers to the lower left corner, x=0.5,y=0.5 to the center (default) and x=1, y=1 to the upper right corner.

If you're not providing optional fields, **FmvMaker** will use the default values. When now taking our already defined video data, we can now create the **Clickables**, which will result in a **Clickables** configuration file with the following content (Pls note that the *RelativeScreenPosition* was not filled in the third **Clickable** to show you a possible usage of the default values):

```
{
  "ClickableList": [{
      "Name": "UniqueClickable",
      "Description": "Go to NextUniqueVideo.",
      "PickUpVideo": "NextUniqueVideoName",
      "IsNavigation": true,
      "RelativeScreenPosition": {
        "x": 0.8,
        "y": 0.2
      }
    }, {
      "Name": "NextClickable",
      "Description": "Go to AnotherUniqueVideo.",
      "PickUpVideo": "AnotherUniqueVideoName",
      "IsNavigation": true,
      "RelativeScreenPosition": {
        "x": 0.2,
        "y": 0.5
      }
    }, {
      "Name": "AnotherClickable",
      "Description": "Go back to UniqueVideo.",
      "PickUpVideo": "DifferentUniqueVideoName",
      "IsNavigation": true
    }
  ]
}
```

Online video mapping configuration

In case you're using videos provided by an online resource, it's necessary to set your VideoSourceType to *ONLINE* in your FmvMaker configuration and provide links to your video data. Platforms like Youtube are currently not supported by native Unity VideoPlayer component. We're trx to provide a workaround asap. To get the correct mapping, you'll have to create a OnlineVideoMapping configuration file. Please check the following sample of our CircleFmv:

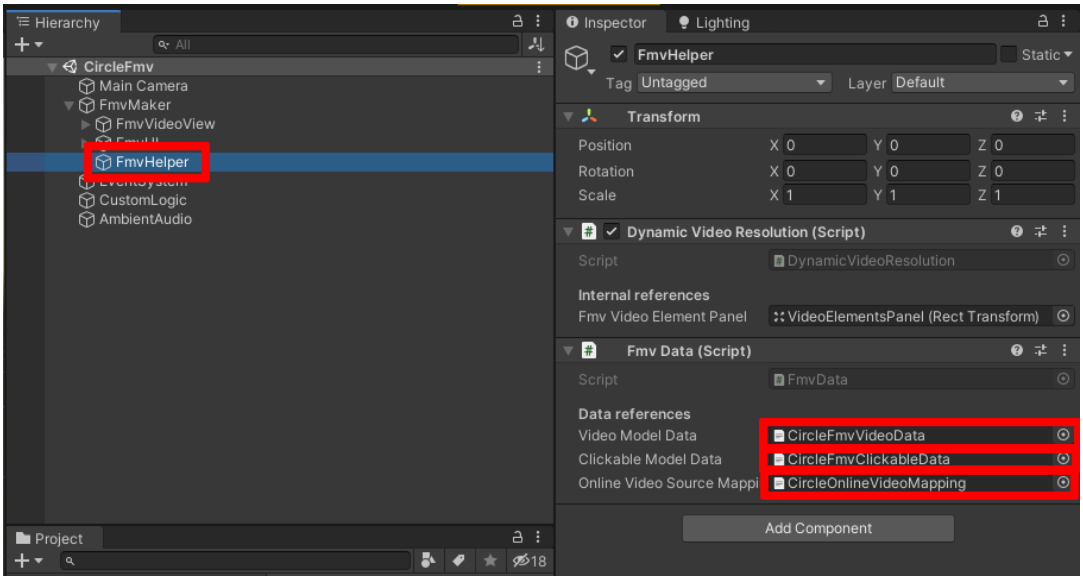
CircleOnlineVideoMapping.json

```
{
  "OnlineVideoSourceMappingList": [{
      "Name": "UniqueVideoName",
      "Link": "https://github.com/FireDragonGameStudio/FmvMaker/blob/master/Assets/FmvMaker/Resources/FmvMakerVideos/UniqueVideoName.mp4?raw=true"
    }, {
      "Name": "NextUniqueVideoName",
      "Link": "https://github.com/FireDragonGameStudio/FmvMaker/blob/master/Assets/FmvMaker/Resources/FmvMakerVideos/NextUniqueVideoName.mp4?raw=true"
    }, {
      "Name": "AnotherUniqueVideoName",
      "Link": "https://github.com/FireDragonGameStudio/FmvMaker/blob/master/Assets/FmvMaker/Resources/FmvMakerVideos/AnotherUniqueVideoName.mp4?raw=true"
    }, {
      "Name": "DifferentUniqueVideoName",
      "Link": "https://github.com/FireDragonGameStudio/FmvMaker/blob/master/Assets/FmvMaker/Resources/FmvMakerVideos/DifferentUniqueVideoName.mp4?raw=true"
    }, {
      "Name": "UniqueToDifferentVideoName",
      "Link": "https://github.com/FireDragonGameStudio/FmvMaker/blob/master/Assets/FmvMaker/Resources/FmvMakerVideos/UniqueToDifferentVideoName.mp4?raw=true"
    }, {
      "Name": "UniqueIdleVideoName",
      "Link": "https://github.com/FireDragonGameStudio/FmvMaker/blob/master/Assets/FmvMaker/Resources/FmvMakerVideos/UniqueIdleVideoName.mp4?raw=true"
    }
  ]
}
```

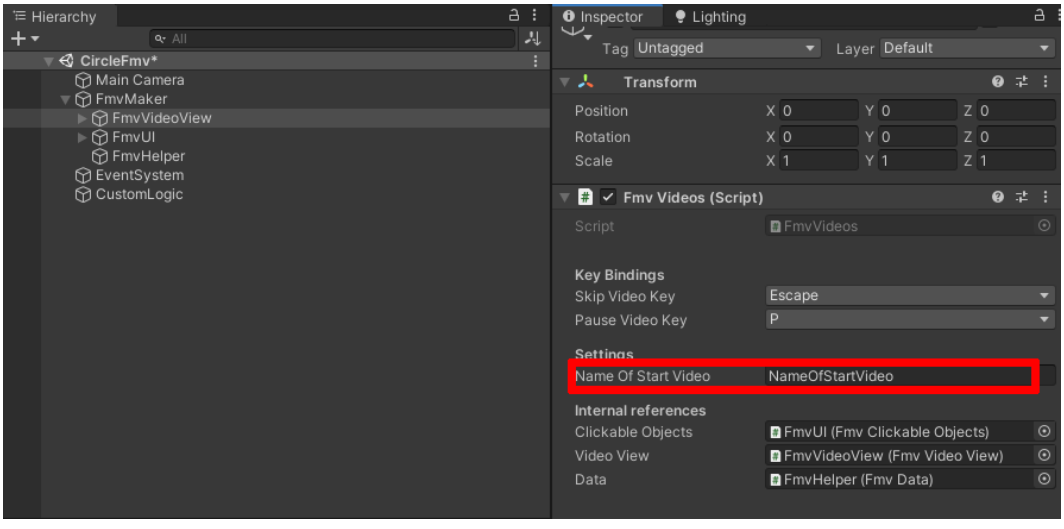
Field	Type	Default value	Optional	Description
Name	string	""		The name used in the**VideoData** configuration file. As it's the same with video element file names, pls make sure that the name you'll choose here is also unique.
Link	string	""		The link which'll provide the static video file to stream within your Unity game. Unity doesn't support direct streaming from platforms like Youtube (yet?). For more information about how to provide a link for the Unity VideoPlayer component, pls check the Unity VideoPlayer component documentation.

Enough explanation, can't we start already?

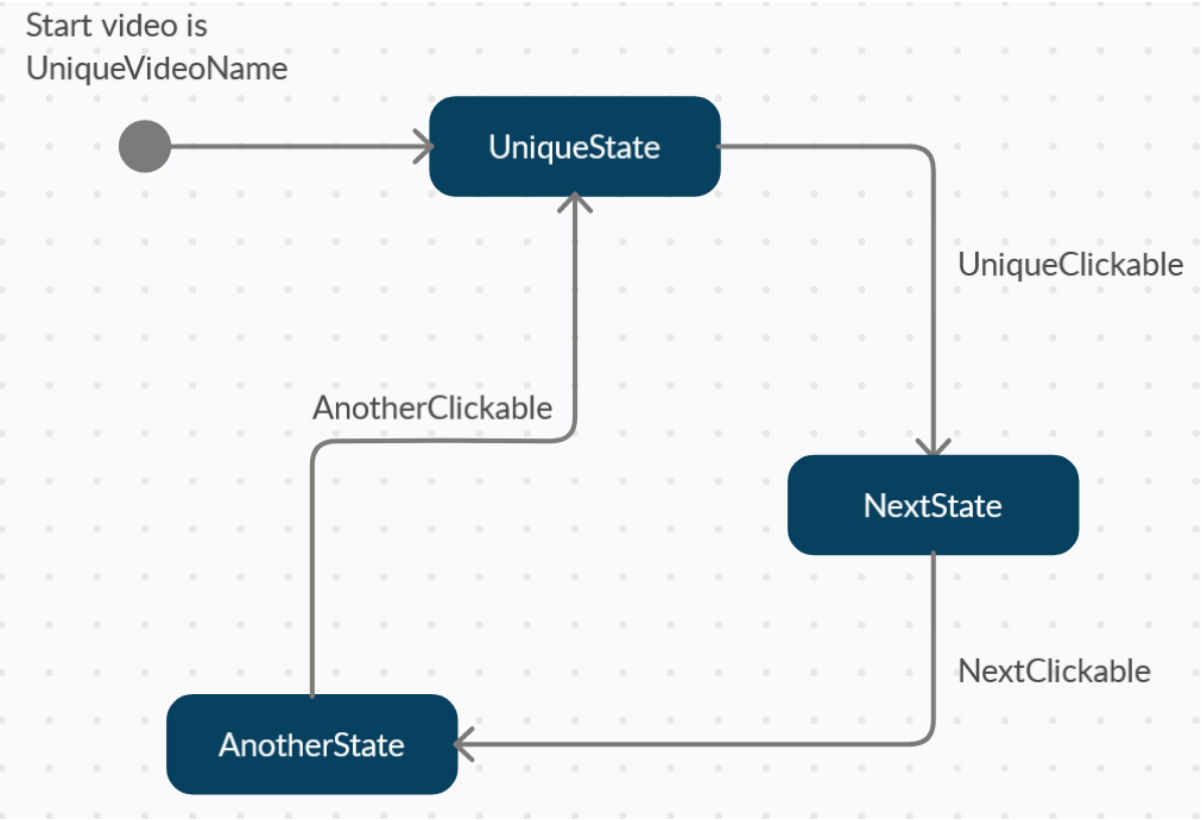
YES, we can. With the examples from the previous sections you've already created a simple prototype, which will allow us to navigate between video elements. If you want to use your own .mp4 videos, just copy them into *FmvMaker/Resources/FmvMakerVideos* and replace their names in the **VideoData** and **Clickables** configuration files. For the final touches, open Unity and open the EmptyFmv scenes, located in FmvMaker/Scenes. After selecting the FmvHelper GameObject in the hierarchy, drag the created JSON files into their corresponding fields of the FmvData component.



Select the *FmvMaker/FmvVideoView* from the hierarchy and set the field "Name Of Start Video" to the filename (without file extension) of the video which you want to be the initial/start video. In our example this will be changed to **UniqueVideoName**. This data can also be changed later, to react to the players progress.



Press play in Unity Editor and watch your **VideoData** play and interact with your configured **Clickables** to navigate. A predefined project (CircleFmv), which is based on the previous sections is also shipped with the FmvMaker package. To give you a better understanding, of how this behaviour works in this example, pls have a look at the following "state diagram". As mentioned before the **UniqueVideoName** and **DifferentUniqueVideoName** video elements are representing **UniqueState**, but offer different approaches to the player. The **Clickables** are transitions from an origin to the target, which is set via the *PickUpVideo* field.



The short explanation for this "state diagram" is: * UniqueVideoName starts. After it's finished the FMV is in **UniqueState** and shows the possible **NavigationTargets** * By clicking on **UniqueClickable**, the video **NextUniqueVideoName** is started and we'll transition to the **NextState**. When reached all **NavigationTargets** of **NextUniqueVideoName** will be shown. * Clicking on **NextClickable**, after the video has finished, will transition to **AnotherState**, where all **NavigationTargets** of **AnotherUniqueVideoName** will be shown. * Clicking on **AnotherClickable** will transfer us to **DifferentUniqueVideoName** which is basically the same as **UniqueVideoName**, but without the intro video part.

Advanced video navigation

The previous sections showed how to create a very simple FMV game. But **FmvMaker** will enable you to create far more complex games.

Multiple NavigationTargets in one screen

As you may already have noticed, each **VideoData** element has the possility to hold multiple **NavigationTargets**. This JSON array will accept multiple **Clickables**, as long as they are present in the **Clickables** configuration file.

You can either reuse already existing **Clickables** or create new ones. This may greatly depend on your game and design. For our example, we'll just add another **NavigationTarget** to our first video element and create a new **Clickable** (DifferentClickable). I'm sure you already guessed, that we'll need an additional video element to configure the movement from **UniqueState** to **AnotherState**. So we'll need to create a new element of **VideoData** and a new **Clickable**.

The new **VideoData** element (DifferentUniqueVideoName) will basically be the same like the AnotherUniqueVideoName video element, except for the linked video file. This kind of "duplication" behaviour is intended to give you the greatest possible flexibility, when configuring your game. E.g. the **NavigationTargets** can differ, depending on which route the player chooses, to get to his/her destination. Let's see how an full configuration example looks, based on our CircularFmv prototype:

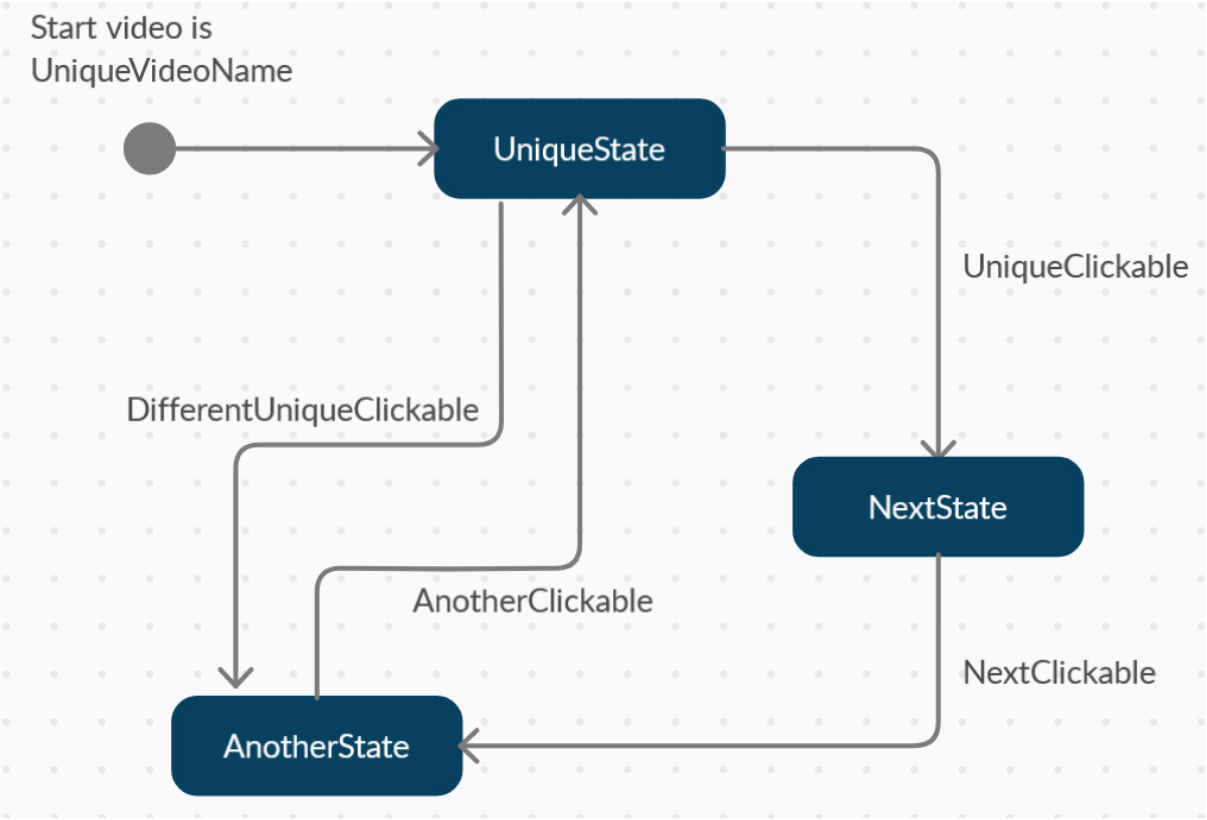
CircleFmvVideoData.json

```
{
  "VideoList": [{
      "Name": "UniqueVideoName",
      "NavigationTargets": [{
          "Name": "UniqueClickable"
        }, {
          "Name": "DifferentUniqueClickable"
        }
      ]
    }, {
      "Name": "NextUniqueVideoName",
      "NavigationTargets": [{
          "Name": "NextClickable"
        }
      ]
    }, {
      "Name": "AnotherUniqueVideoName",
      "NavigationTargets": [{
          "Name": "AnotherClickable"
        }
      ]
    }, {
      "Name": "DifferentUniqueVideoName",
      "NavigationTargets": [{
          "Name": "UniqueClickable"
        }, {
          "Name": "DifferentUniqueClickable"
        }
      ]
    }, {
      "Name": "UniqueToDifferentVideoName",
      "NavigationTargets": [{
          "Name": "AnotherClickable"
        }
      ]
    }
  ]
}
```

CircleFmvClickableData.json

```
{
  "ClickableList": [{
      "Name": "UniqueClickable",
      "Description": "Go to NextUniqueVideo.",
      "PickUpVideo": "NextUniqueVideoName",
      "IsNavigation": true,
      "RelativeScreenPosition": {
        "x": 0.8,
        "y": 0.2
      }
    }, {
      "Name": "NextClickable",
      "Description": "Go to AnotherUniqueVideo.",
      "PickUpVideo": "AnotherUniqueVideoName",
      "IsNavigation": true,
      "RelativeScreenPosition": {
        "x": 0.2,
        "y": 0.5
      }
    }, {
      "Name": "AnotherClickable",
      "Description": "Go back to UniqueVideo.",
      "PickUpVideo": "DifferentUniqueVideoName",
      "IsNavigation": true
    }, {
      "Name": "DifferentUniqueClickable",
      "Description": "Go to AnotherUniqueVideo.",
      "PickUpVideo": "UniqueToDifferentVideoName",
      "IsNavigation": true,
      "RelativeScreenPosition": {
        "x": 0.2,
        "y": 0.2
      }
    }
  ]
}
```

Our "state diagram" has now changed to this:



Instant NavigationTargets

Sometimes you want to jump from video element directly to another, without letting the user decide where to go. This can be useful in storytelling to avoid dead ends, or go quickly back to a video element from where the player can continue. Usually you'd record a video, which shows everything, but as things can become complex and you'll have to somehow have to combine videos, without shipping them multiple times with your projects, "Instant **NavigationTargets** can be rather useful. Let's take our CircleFmv prototype and replace our **AnotherClickable** & **DifferentUniqueClickable** with an "Instant **NavigationTarget**". A possibility for this behavour may be to show the player, that he'll have to approach **AnotherUniqueVideoName** by a different route. To change a **Clickable** into a "Instant **NavigationTarget**" you'll just omit the *Description* and *RelativeScreenPosition* fields. FmvMaker will take care of the rest. In this example the **DifferentUniqueClickable** points to **UniqueToDifferentVideoName**, which then points to **InstantAnotherUniqueClickable** and results in **DifferentUniqueVideoName**.

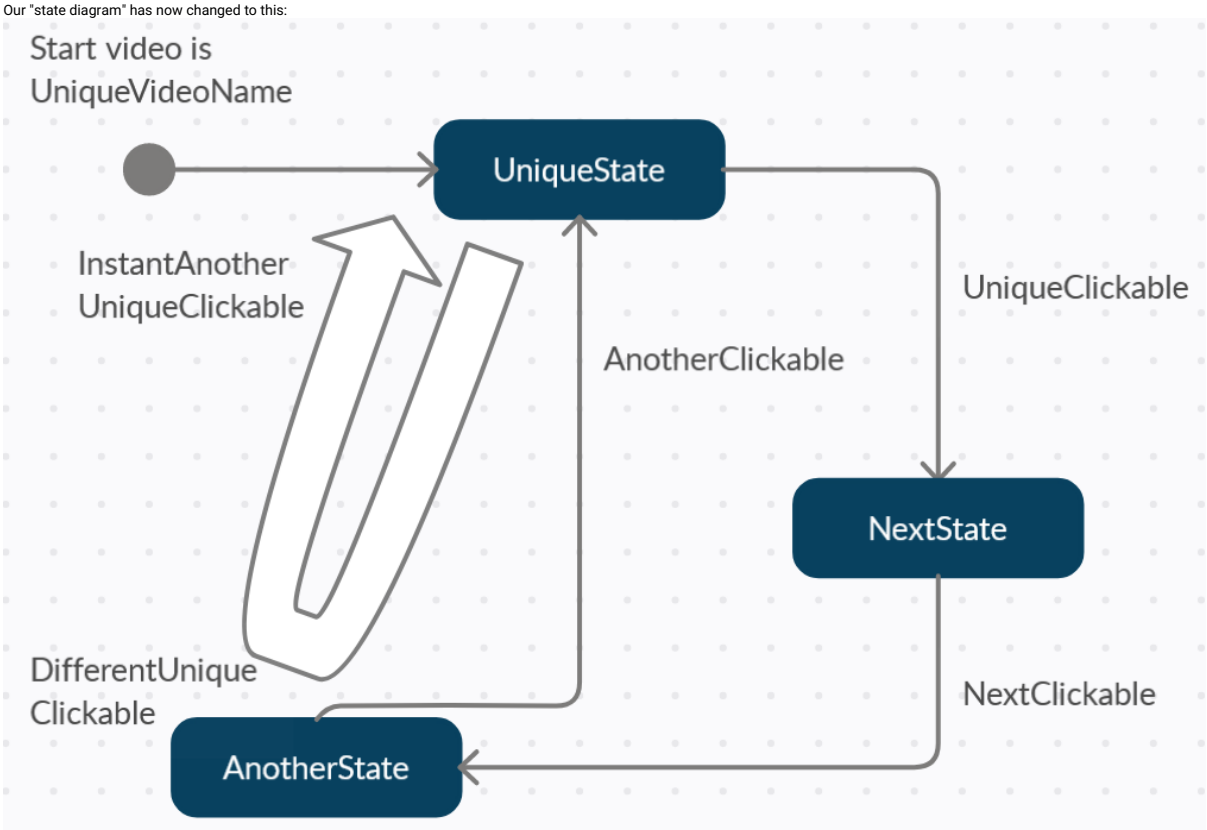
CircleFmvVideoData.json

```
{
  "VideoList": [{
      "Name": "UniqueVideoName",
      "NavigationTargets": [{
          "Name": "UniqueClickable"
        }, {
          "Name": "DifferentUniqueClickable"
        }
      ]
    }, {
      "Name": "NextUniqueVideoName",
      "NavigationTargets": [{
          "Name": "NextClickable"
        }
      ]
    }, {
      "Name": "AnotherUniqueVideoName",
      "NavigationTargets": [{
          "Name": "AnotherClickable"
        }
      ]
    }, {
      "Name": "DifferentUniqueVideoName",
      "NavigationTargets": [{
          "Name": "UniqueClickable"
        }, {
          "Name": "DifferentUniqueClickable"
        }
      ]
    }, {
      "Name": "UniqueToDifferentVideoName",
      "NavigationTargets": [{
          "Name": "InstantAnotherUniqueClickable"
        }
      ]
    }
  ]
}
```

CircleFmvClickableData.json

```
{
  "ClickableList": [{
      "Name": "UniqueClickable",
      "Description": "Go to NextUniqueVideo.",
      "PickUpVideo": "NextUniqueVideoName",
      "IsNavigation": true,
      "RelativeScreenPosition": {
        "x": 0.8,
        "y": 0.2
      }
    }, {
      "Name": "NextClickable",
      "Description": "Go to AnotherUniqueVideo.",
      "PickUpVideo": "AnotherUniqueVideoName",
      "IsNavigation": true,
      "RelativeScreenPosition": {
        "x": 0.2,
        "y": 0.5
      }
    }, {
      "Name": "AnotherClickable",
      "Description": "Go to UniqueVideo.",
      "PickUpVideo": "UniqueVideoName",
      "IsNavigation": true
    }, {
      "Name": "DifferentUniqueClickable",
      "Description": "Go to AnotherUniqueVideo.",
      "PickUpVideo": "DifferentUniqueVideoName",
      "IsNavigation": true,
      "RelativeScreenPosition": {
        "x": 0.2,
        "y": 0.2
    }, {
      "Name": "InstantAnotherUniqueClickable",
      "PickUpVideo": "UniqueVideoName",
        "IsNavigation": true
      }
    }
  ]
}
```

Our "state diagram" has now changed to this:



Loopable video elements

It often makes sense to have some kind of hub, where the player originates from, or can choose multiple ways. A good example for this would be some kind of hanger in a space FMV game (Wing Commander FTW!!!). As a still image doesn't seem lively, a looping video makes sense, to convey an impression of an active environment to the player. For this you can define *Loopable* videos. When combining all configuration details from the previous sections, this is no longer a problem. Let's define our **UniqueState** as *Loopable* and create the necessary configuration, with the help of "Instant **NavigationTargets**.

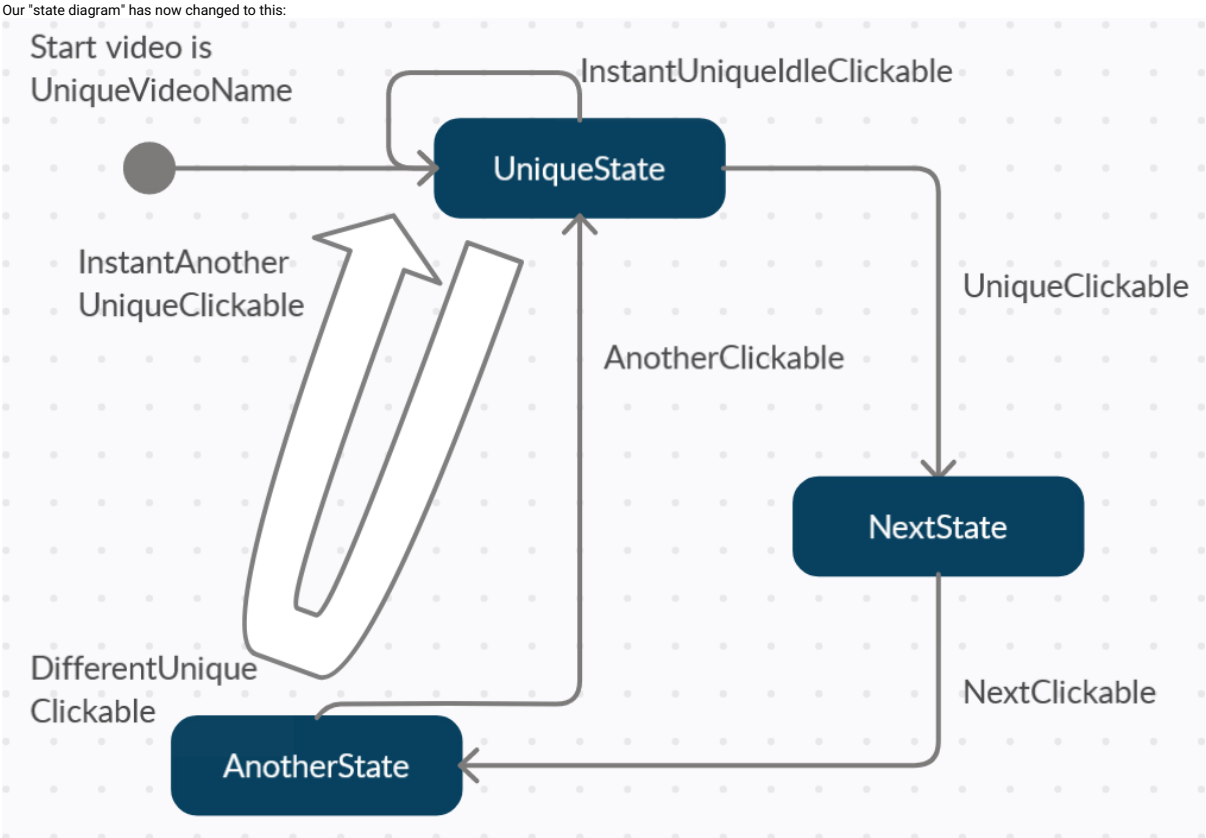
CircleFmvVideoData.json

```
{
  "VideoList": [{
      "Name": "UniqueVideoName",
      "NavigationTargets": [{
          "Name": "InstantUniqueIdleClickable"
        }
      ]
    }, {
      "Name": "NextUniqueVideoName",
      "NavigationTargets": [{
          "Name": "NextClickable"
        }
      ]
    }, {
      "Name": "AnotherUniqueVideoName",
      "NavigationTargets": [{
          "Name": "AnotherClickable"
        }
      ]
    }, {
      "Name": "DifferentUniqueVideoName",
      "NavigationTargets": [{
          "Name": "InstantUniqueIdleClickable"
        }
      ]
    }, {
      "Name": "UniqueToDifferentVideoName",
      "NavigationTargets": [{
          "Name": "InstantAnotherUniqueClickable"
        }
      ]
    }, {
      "Name": "UniqueIdleVideoName",
      "IsLooping": true,
      "NavigationTargets": [{
          "Name": "UniqueClickable"
        }, {
          "Name": "DifferentUniqueClickable"
        }
      ]
    }
  ]
}
```

CircleFmvClickableData.json

```
{
  "ClickableList": [{
      "Name": "UniqueClickable",
      "Description": "Go to NextUniqueVideo.",
      "PickUpVideo": "NextUniqueVideoName",
      "IsNavigation": true,
      "RelativeScreenPosition": {
        "x": 0.8,
        "y": 0.2
      }
    }, {
      "Name": "NextClickable",
      "Description": "Go to AnotherUniqueVideo.",
      "PickUpVideo": "AnotherUniqueVideoName",
      "IsNavigation": true,
      "RelativeScreenPosition": {
        "x": 0.2,
        "y": 0.5
      }
    }, {
      "Name": "AnotherClickable",
      "Description": "Go back to UniqueVideo.",
      "PickUpVideo": "DifferentUniqueVideoName",
      "IsNavigation": true
    }, {
      "Name": "DifferentUniqueClickable",
      "Description": "Go to AnotherUniqueVideo.",
      "PickUpVideo": "UniqueToDifferentVideoName",
      "IsNavigation": true,
      "RelativeScreenPosition": {
        "x": 0.2,
        "y": 0.2
      }
    }, {
      "Name": "InstantAnotherUniqueClickable",
      "PickUpVideo": "DifferentUniqueVideoName",
      "IsNavigation": true
    }, {
      "Name": "InstantUniqueIdleClickable",
      "PickUpVideo": "UniqueIdleVideoName",
      "IsNavigation": true
    }
  ]
}
```

Our "state diagram" has now changed to this:



Use Clickable Items to enhanced your game

For now, we've only focused on the video navigation with the help of **NavigationTargets**. But **Clickables** can be used for a different purposes to. **Items** are basically the same as **NavigationTargets**, but they can be stored in an inventory and used to trigger actions. **FmvMaker** already comes with a basic inventory implementation, which allows you to already build a FMV game with various items. As it's for **NagivationTargets** there can be multiple **Items** (to either find and/or use) per video element. Let's take the example from our CircleFmv and add a few **Items** to enhance the prototype.

Items to find and use

Create a **Clickable** and a **VideoData** element for every **Item** you'd like to find. You can place them with the *RelativeScreenPosition* field. The **Items** themselfes will be linked via the *ItemsToFind* and *ItemsToUse* fields of the designated video element. In this example two items will trigger video sequences from our **UniqueState** when being found. Furthermore these items can also be used with different video elements.

CircleFmvVideoData.json

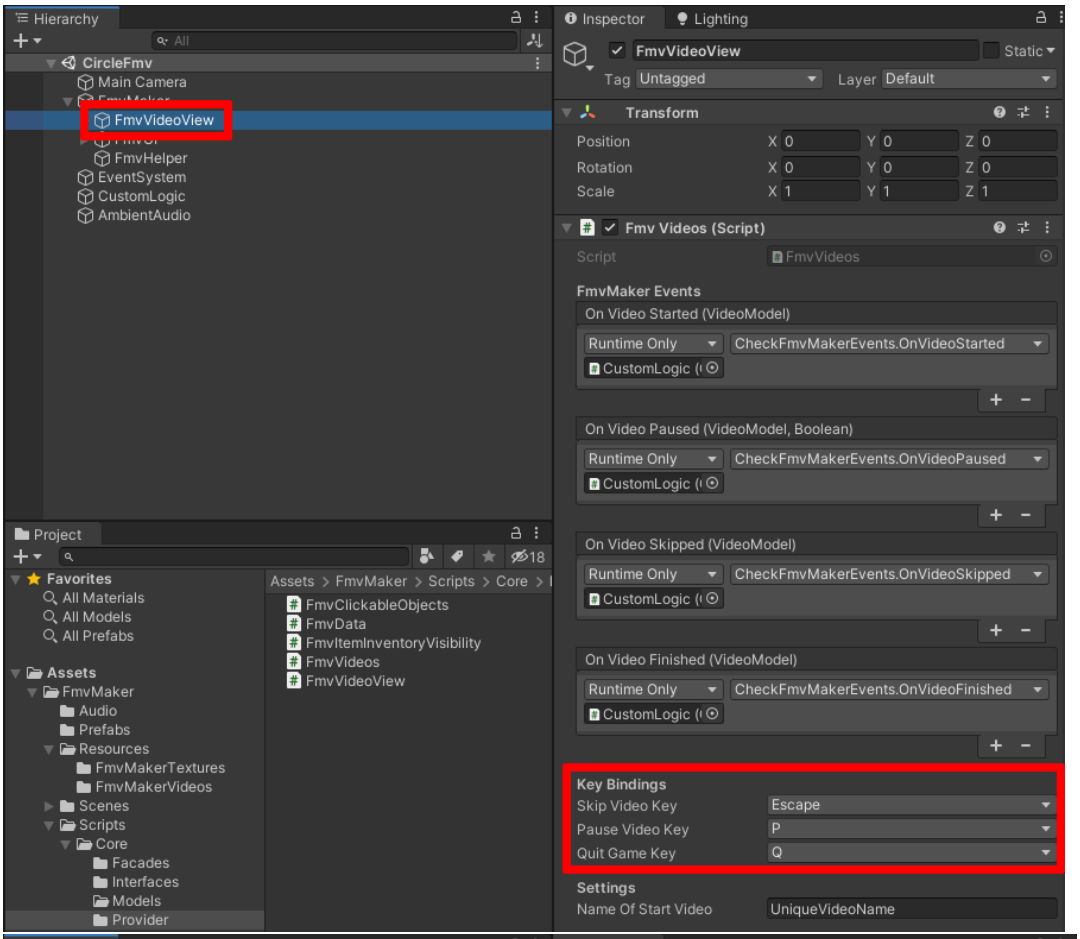
```
{
  "VideoList": [{
      "Name": "UniqueVideoName",
      "NavigationTargets": [{
          "Name": "InstantUniqueIdleClickable"
        }
      ]
    }, {
      "Name": "NextUniqueVideoName",
      "NavigationTargets": [{
          "Name": "NextClickable"
        }
      ]
    }, {
      "Name": "AnotherUniqueVideoName",
      "NavigationTargets": [{
          "Name": "AnotherClickable"
        }
      ],
      "ItemsToUse": [{
          "Name": "SecondItemClickable"
        }
      ]
    }, {
      "Name": "DifferentUniqueVideoName",
      "NavigationTargets": [{
          "Name": "InstantUniqueIdleClickable"
        }
      ]
    }, {
      "Name": "UniqueToDifferentVideoName",
      "NavigationTargets": [{
          "Name": "InstantAnotherUniqueClickable"
        }
      ]
    }, {
      "Name": "UniqueIdleVideoName",
      "IsLooping": true,
      "NavigationTargets": [{
          "Name": "UniqueClickable"
        }, {
          "Name": "DifferentUniqueClickable"
        }
      ],
      "ItemsToFind": [{
          "Name": "FirstItemClickable"
        }, {
          "Name": "SecondItemClickable"
        }
      ],
      "ItemsToUse": [{
          "Name": "FirstItemClickable"
        }
      ]
    }
  ]
}
```

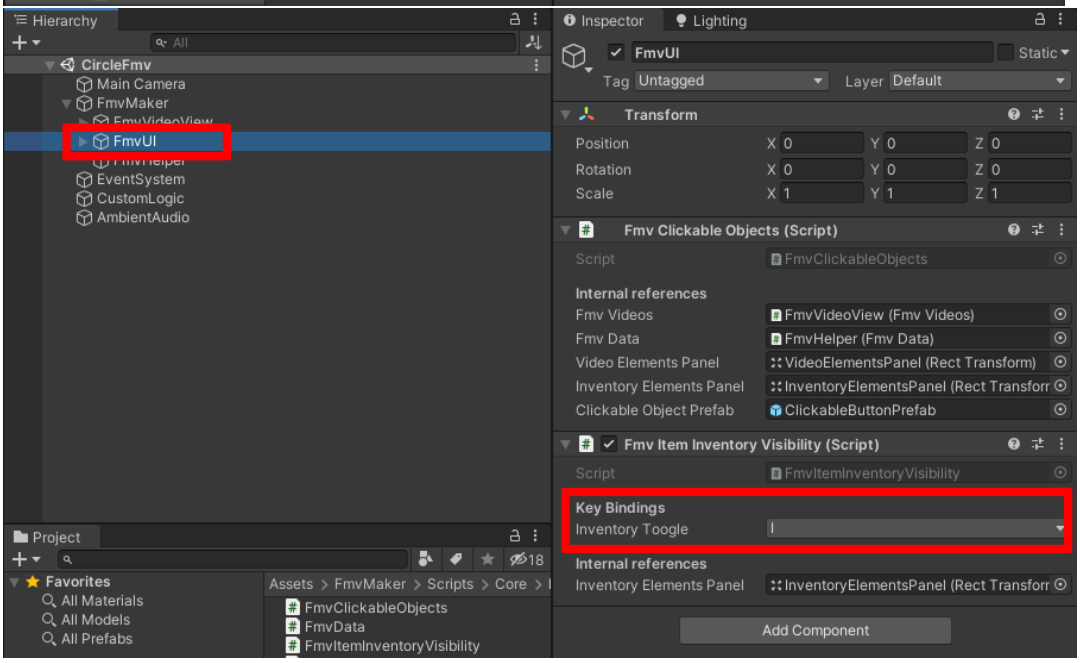
CircleFmvClickableData.json

```
{
  "ClickableList": [{
      "Name": "UniqueClickable",
      "Description": "Go to NextUniqueVideo.",
      "PickUpVideo": "NextUniqueVideoName",
      "IsNavigation": true,
      "RelativeScreenPosition": {
        "x": 0.8,
        "y": 0.2
      }
    }, {
      "Name": "NextClickable",
      "Description": "Go to AnotherUniqueVideo.",
      "PickUpVideo": "AnotherUniqueVideoName",
      "IsNavigation": true,
      "RelativeScreenPosition": {
        "x": 0.2,
        "y": 0.5
      }
    }, {
      "Name": "AnotherClickable",
      "Description": "Go back to UniqueVideo.",
      "PickUpVideo": "DifferentUniqueVideoName",
      "IsNavigation": true
    }, {
      "Name": "DifferentUniqueClickable",
      "Description": "Go to AnotherUniqueVideo.",
      "PickUpVideo": "UniqueToDifferentVideoName",
      "IsNavigation": true,
      "RelativeScreenPosition": {
        "x": 0.2,
        "y": 0.2
      }
    }, {
      "Name": "InstantAnotherUniqueClickable",
      "PickUpVideo": "DifferentUniqueVideoName",
      "IsNavigation": true
    }, {
      "Name": "InstantUniqueIdleClickable",
      "PickUpVideo": "UniqueIdleVideoName",
      "IsNavigation": true
    }, {
      "Name": "FirstItemClickable",
      "Description": "Hungry? Try this.",
      "PickUpVideo": "UniqueToDifferentVideoName",
      "UseageVideo": "NextUniqueVideoName",
      "DisplayText": "Delicious FirstItemClickable",
      "RelativeScreenPosition": {
        "x": 0.2,
        "y": 0.4
      }
    }, {
      "Name": "SecondItemClickable",
      "Description": "To buy something.",
      "PickUpVideo": "NextUniqueVideoName",
      "UseageVideo": "DifferentUniqueVideoName",
      "DisplayText": "Valueable SecondItemClickable",
      "RelativeScreenPosition": {
        "x": 0.6,
        "y": 0.8
      }
    }
  ]
}
```


Key bindings and already implemented game mechanics

FmvMaker already has common KeyBindings implemented, to help you. These bindings can be changed, when you click on the *FmvMaker/FmvVideoView* within the hierarchy objects and select the appropriate key from the dropdown field on the *FmvVideoView* component.





Key	Description
P	Pauses/Unpauses the playing video.
Escape	Skips the currently playing video. Note that the videos has to be watched at least once, to be able to skip it.
Q	Quits the game, when running the build. Doesn't stop the Editor from running.
I	Toggles the inventory visibility.

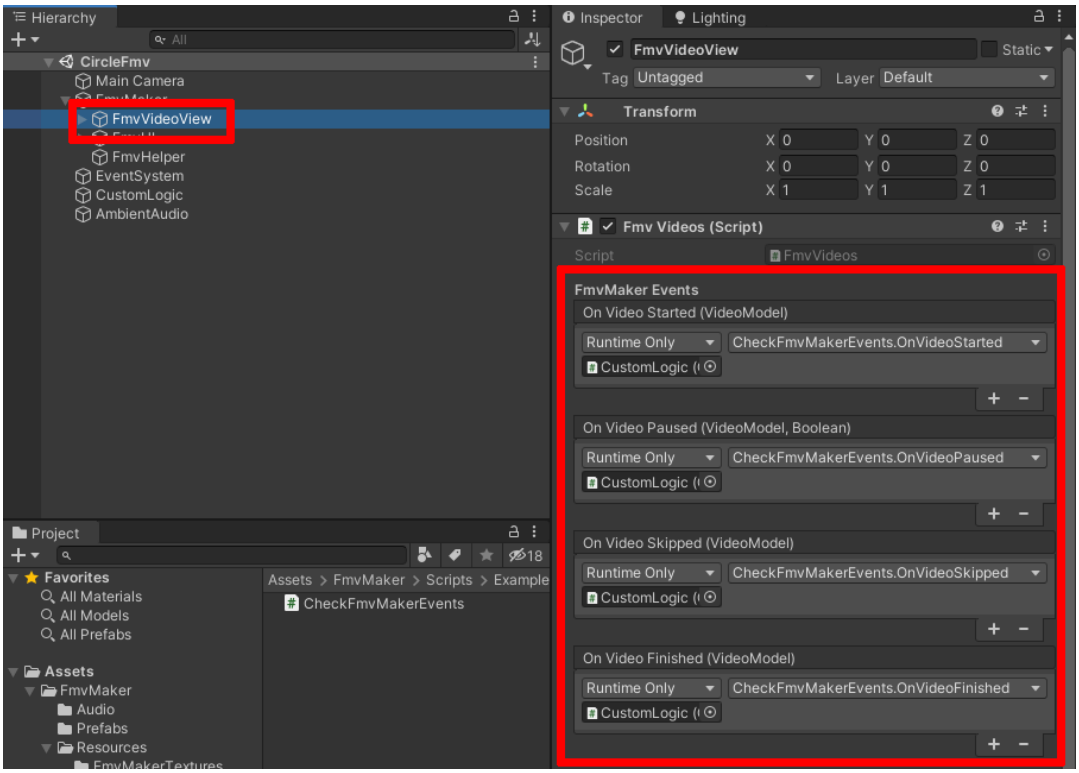
Use icons for NavigationTargets and Items

In the previous created FMV prototype, every **NavigationTarget** as well as the **Clickables** were represented by a Unity UI button with a text. To give your game your personal touch, it's possible to add icons to it. The easiest way to do this, is to add your icons (ideally square icons sized 256x256 pixels) to the *FmvMaker/Resources/FmvMakerTextures* and name them equally to your **Clickables** in your configuration file. **FmvMaker** will load these icons automatically, when a match is found. There are already a few icons shipped with the package. To prevent **FmvMaker** from showing the the default text, remove the *DisplayText* field from your configuration file.

Adding your own logic

Sometimes it's necessary to have your own events triggered. **FmvMaker** offers you events for every type of video interactions (OnVideoStarted, OnVideoPaused, OnVideoSkipped, OnVideoFinished). First you either add the interface **IFmvMakerVideoEvents** to your Monobehaviour or implement the neede methods on your own. The Monobehaviour **CheckFmvMakerEvents** gives you a better idea, of how to use the interface and how the methods

must look like. After that, you'll have to register your implemented methods to the FmvMaker events and that's it. An example for console outputs registered with FmvMakers video events is shipped with the package.




```c# using FmvMaker.Core.Models; using FmvMaker.Utilities.Interfaces; using UnityEngine;

namespace FmvMaker.Examples.Scripts { public class CheckFmvMakerEvents : MonoBehaviour, IFmvMakerVideoEvents { public void OnVideoFinished(VideoModel videoModel) { Debug.Log($"CustomEvent: Video {videoModel.Name} finished."); }
```

```
 public void OnVideoPaused(VideoModel videoModel, bool isPaused) {
   Debug.Log($"CustomEvent: Video {videoModel.Name} paused. Pause: {isPaused}");
 }

 public void OnVideoSkipped(VideoModel videoModel) {
   Debug.Log($"CustomEvent: Video {videoModel.Name} skipped.");
 }

 public void OnVideoStarted(VideoModel videoModel) {
   Debug.Log($"CustomEvent: Video {videoModel.Name} started. Looping: {videoModel.IsLooping}");
 }
```

}}

The full VideoData JSON object

```javascript
{
  "VideoList": [{
      "Name": "UniqueVideoNameToChoose",
      "IsLooping": false,
      "NavigationTargets": [{
          "Name": "..."
        }, {
          "Name": "..."
        }, {
          "Name": "..."
        }
      ],
      "ItemsToFind": [{
          "Name": "..."
        }, {
          "Name": "..."
        }, {
          "Name": "..."
        }
      ],
      "ItemsToUse": [{
          "Name": "..."
        }
      ],
      "AlreadyWatched": false,
      "DisplayText": "DisplayText",
      "RelativeScreenPosition": {
        "x": 0,
        "y": 0
      }
    }
  ]
}
```

Field	Type	Default value	Optional	Description
Name	string	""		The video element need a unique name, which is set via the*Name* field.
IsLooping	bool	false	x	The *IsLooping* field can be used to create a looped video state, when set to true. This gives the player a better idea of the scenes by showing various impressions. E.g. wind movement, lively places, traffic, etc… Pls make sure to use loopable videos when using this property. If this field is not used or set to false, the video playing atm will stop at the last frame. After reaching this last frame all possible further actions (**NavigationTargets**, **ItemsToFind**) will be presented to the player (which is usually the way traditional FMV games do).
NavigationTargets	string[]	[]		A video can have *1-n* **NavigationTargets** which are represented as an array of the current video element. This array contains the name/s of the next video/s. Again the name corresponds to your desired video filename within the Resources folder (FmvMaker/Resources/FmvMakerVideos). Please remember to use the filename without the file extension. When having multiple names, make that the entries are separated via ,
ItemsToFind	string[]	[]	x	*ItemsToFind* references all items**Clickables** which can be found within this video element.
ItemsToUse	string[]	[]	x	*ItemsToFind* references all items**Clickables** which can be used within this video element. To use items, they have to be found first.
AlreadyWatched	bool	false	x	*AlreadyWatched* checks if a video was already watched. Players can skip already watched videos by pressing a predefined key. This field should NOT be used within your configuration files.
DisplayText	string	""	x	*DisplayText* does what it name says. It shows a set text. This field should NOT be used within your configuration files.
RelativeScreenPosition	Vector2	x=0.5, y=0.5	x	The *RelativeScreenPosition* should NOT be used within your video configuration file. This field is reserved for further useage to display multiple videos at once.

The full Clickable JSON object

```
{
  "ClickableList": [{
      "Name": "ClickableMe",
      "Description": "Description? Try this.",
      "PickUpVideo": "UniqueVideoName",
      "UseageVideo": "AnotherUniqueVideoName",
      "IsNavigation": false,
      "IsInInventory": false,
      "WasUsed": false,
      "DisplayText": "Delicious apple",
      "RelativeScreenPosition": {
        "x": 0.2,
        "y": 0.8
      }
    }
  ]
}
```

Field	Type	Default value	Optional	Description
Name	string	""		The **Clickable** needs a unique name, which is set via the *Name* field.
Description	string	""	x	*Description* does what it name says. It shows a set text, maybe as tooltip or something similar. When dealing with an instant **NavigationTarget** this field can be omited, to tell FmvMaker that the next video (linked in *PickUpVideo*) should be instantly played.
PickUpVideo	string	""		The *PickUpVideo* field links to the video element, which should be played, when this **Clickable** item is selected.
UseageVideo	string	""	x	The *UseageVideo* field links to the video element, which should be played, when this **Clickable** item is selected from the inventory in the correct screen. That means this **Clickable** must be referenced as a *ItemToUse* in the current video element.
IsNavigation	bool	false	x	*IsNavigation* helps to distinguish between pure navigation and collectable items. It it's true, the **Clickable** will be used as a **NavigationTarget**. It it's set to false, or the default value is used (by omiting this field), this **Clickable** will be an item.
IsInInventory	bool	false	x	*IsInInventory* checks if this item was already collected or not. It can be used to track the players progress, or preload certain items for the players inventory.
WasUsed	bool	false	x	*WasUsed* checks if item was already used, like intended. Items where this property is true, will not be loaded by FmvMaker. This can be useful for either testing, or tracking player progress.
DisplayText	string	""	x	*DisplayText* does what it name says. It shows a set text. This field should NOT be used within your configuration files.
RelativeScreenPosition	Vector2	x=0.5, y=0.5	x	The *RelativeScreenPosition* places your **Clickable** on the designated screen position. Pls make sure to only use values between 0 and 1, where x=0, y=0 refers to the lower left corner, x=0.5,y=0.5 to the center (default) and x=1, y=1 to the upper right corner.

FmvMaker configuration

```
{
  "AspectRatio": "16:9",
  "VideoSourceType": "ONLINE",
  "ImageSourceType": "INTERNAL",
  "LocalFilePath": "C:\\Data\\UnityProjects\\FmvMakerFiles\\"
}
```

Field	Type	Default value	Optional	Description
AspectRatio	string	""		Currently unused. Will be used in future to support different AspectRatios (e.g. 4:3, ...)
VideoSourceType	string	""		Tells **FmvMaker** where to look for video files. *ONLINE* will check for a video link provided via a online video mapping configuration file. *INTERNAL* will check for video files matching the video element name from the **VideoData** configuration file. Other types are currently not supported.
ImageSourceType	string	""		Tells **FmvMaker** where to look for image files (**Items** and **NagivationTargets**). *INTERNAL* will check for files matching the name from the **Clickable** configuration file. Other types are currently not supported.
LocalFilePath	string	""		Currently unused. Intended to load video files from local disk. Future use for prototyping or to keep git repository small.

Future plans

- [ ] It's currently not possible to have 100% transparent **Clickables**. We're on it.
- [ ] There is already a possility to use events, provided by FmvMaker. We'll extend them in future versions, to give you more possibilties to configure and adjust everything for your needs.
- [ ] We're already working on a JSON checker, to display possible errors, when reading to configuration files.
- [ ] Another extension on our ToDo list is a node-based editor window, to omit the troublesome configuration file writing and make it easier to create your project (like Bolt, VFX graph, etc...).
- [ ] Including online videos, as well as locally (outside of Unity) stored videos will also be possible soon.
- [ ] Including online images, as well as locally (outside of Unity) stored images will also be possible soon.
- [ ] Show multiple videos at the same time, to create some kind video matrix. Rare useage, but it's fancy. ^^
- [ ] FmvMaker currently only supports the Unity UI sytstem. We're working on TextMeshPro support.
- [ ] **Clickables** are currently not resizeable by the configuration file and bound to the prefab size. We're working on it, to make it easier configurable.
- [ ] Item tooltips are not available yet. It's on our list.
- [ ] It's currently not possible to combine items within the inventory. We're also working on this feature.
- [ ] It's nowadays common, to show all available, clickable options when pressing Spacebar. We'll implement this feature asap.

Known issues

- FmvMaker only supports video files, which are supported by Unity (https://docs.unity3d.com/Manual/VideoSources-FileCompatibility.html). Our recommendation: Pls try to use .mp4 or ogv files.
- It's not possible to edit or transform videos within Unity. Pls use an external video editor like Shotcut (https://shotcut.org/) to prepare your videos for use with FmvMaker.
- No UnitTests shipped yet. We run a few of them in the background, but they are not checking every critical point of our package.
- There is no menu or similar thing, when quitting the game. We're currently investigating a way to give developers a useful template for quitting.
- We only support videos with a ratio from 16:9 (currently).