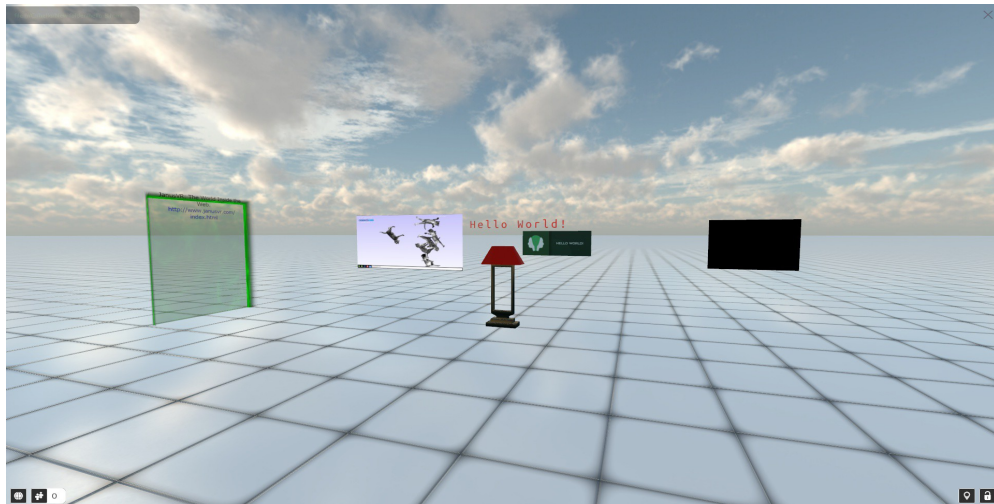




Introduction to JanusVR Lesson 8

HOW TO ADD A LINK TO A ROOM



June 2017

This instructional guide is designed to teach some of the fundamental skills needed to create virtual reality spaces using JanusVR.

This eighth lesson of the series explains how to add a portal and a mirror, and builds on the room made in previous lessons.

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1. Adding a Link to a Room

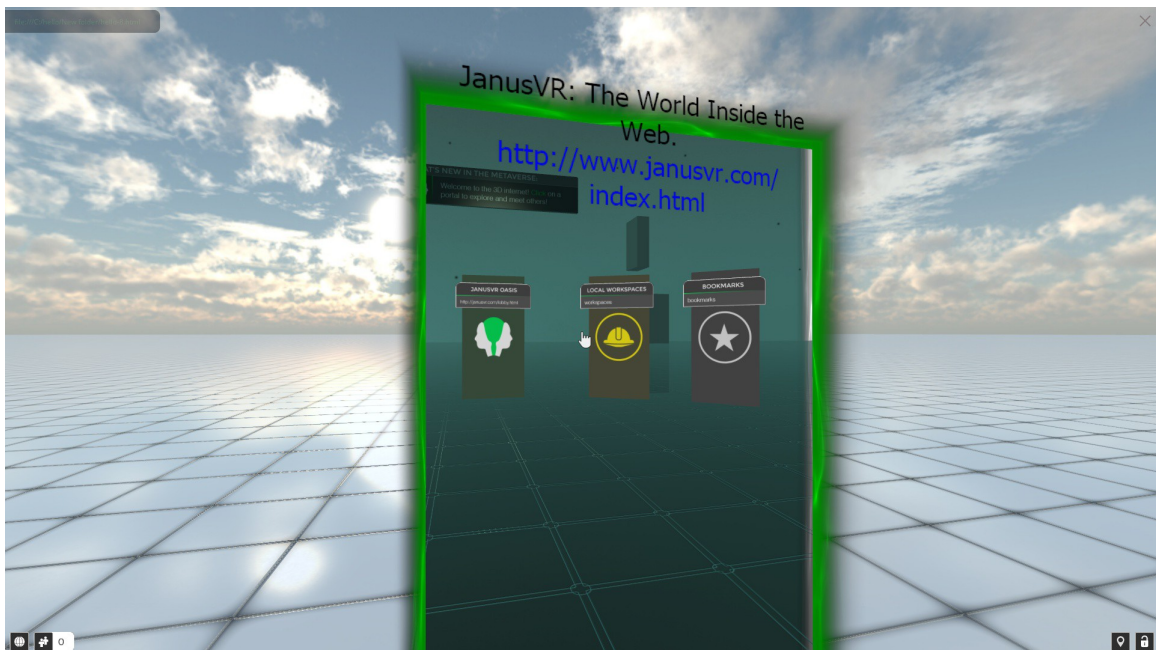
In this example we have added a 'Link' (or portal) to the room.

The url of the room we want to link to is "<http://www.janusvr.com/index.html>"

The position of the link is 6 metres to the left and 2 metres forward.

The orientation of the link (xdir, ydir and zdir) is rotated 90 on the y-axis.

The colour of the link is green, and the title is "JanusVR"



```
<html>
<head>
<title>Hello World!</title>
</head>
<body>
<FireBoxRoom>
<Assets>
<AssetImage id="hello_world" src="http://i.imgur.com/yLxgtkE.png" />
<AssetWebSurface id="cats" src="http://cat-bounce.com/" width="1280"
height="720" />
<AssetVideo id="vid"
src="http://janusvr.com.s3.amazonaws.com/janus_vid.mp4" />
<AssetObject id="lamp"
src="http://janusvr.com.s3.amazonaws.com/lamp.dae" />
<AssetSound id="drums"
src="http://janusvr.com.s3.amazonaws.com/drums.mp3" />
</Assets>
<Room use_local_asset="room_plane" >
<Text pos="0 2 4" xdir="-1 0 0" ydir="0 1 0" zdir="0 0 -1" col="red" scale="2 2
2" >Hello World!</Text>
<Image id="hello_world" pos="0 1.5 8" xdir="-1 0 0" ydir="0 1 0" zdir="0 0
-1" />
<Object id="plane" pos="5 1.5 8" xdir="-1 0 0" ydir="0 1 0" zdir="0 0 -1"
scale="4 2 1" collision_id="plane" lighting="false" websurface_id="cats" />
<Video id="vid" pos="-5 1.5 8" xdir="-1 0 0" ydir="0 1 0" zdir="0 0 -1"
scale="1 1 1" lighting="false" />
<Object id="lamp" pos="0 0 3" />
<Sound id="drums" rect="-100 -50 100 50" />
<Link url="http://www.janusvr.com/index.html" pos="6 0 2" xdir="0 0 1"
ydir="0 1 0" zdir="-1 0 0" col="green" title="JanusVR" />
</Room>
</FireBoxRoom>
</body>
</html>
```

2. Adding a mirror to a Room

The process for adding a mirror to a room is very similar to adding a portal. We add the attribute `mirror="true"`

The url for a mirror is `url=""`

The mirror is set to `auto_load`, which means it will open a link back to the room you are in, creating a mirror effect.

The mirror is set to locked (`locked="true"`)

The attribute 'active' has been set to false, to stop clicking on mirror and 'closing' it.

The position of the mirror is 6 metres to the left and 2 metres backwards.

The orientation of the link (`xdir`, `ydir` and `zdir`) is rotated 90 on the y-axis.

`draw_text` and `draw_glow` have been set to false, to complete the mirror effect.



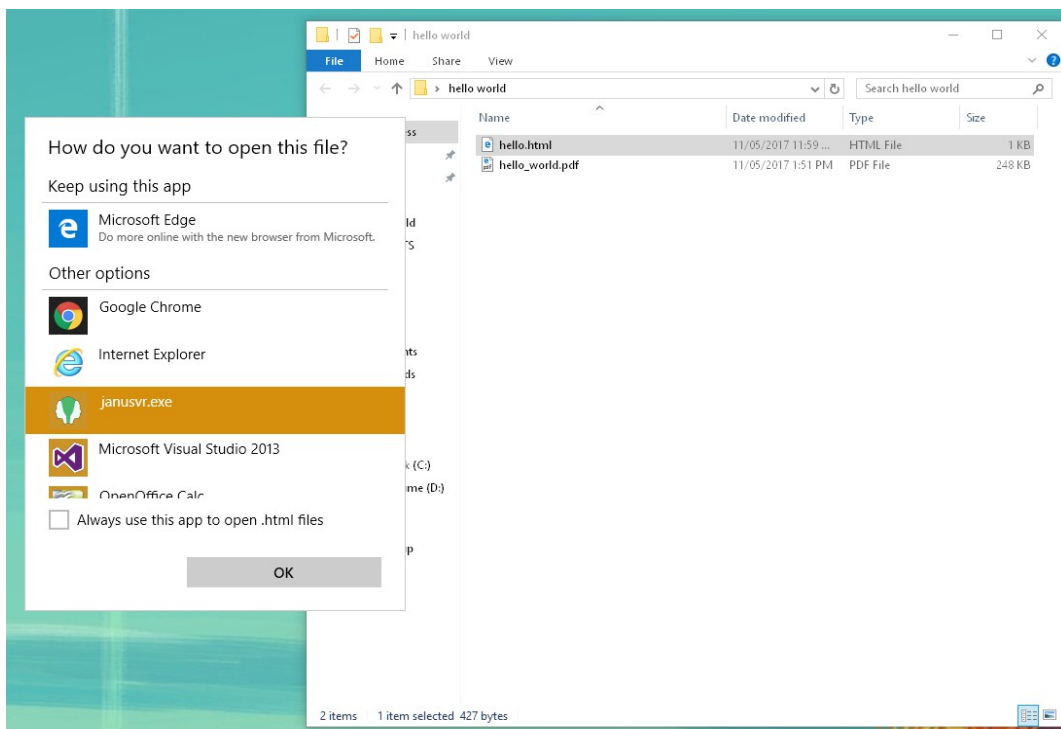
```
<html>
<head>
<title>Hello World!</title>
</head>
<body>
<FireBoxRoom>
<Assets>
<AssetImage id="hello_world" src="http://i.imgur.com/yLxgtkE.png" />
<AssetWebSurface id="cats" src="http://cat-bounce.com/" width="1280"
height="720" />
<AssetVideo id="vid"
src="http://janusvr.com.s3.amazonaws.com/janus_vid.mp4" />
<AssetObject id="lamp"
src="http://janusvr.com.s3.amazonaws.com/lamp.dae" />
<AssetSound id="drums"
src="http://janusvr.com.s3.amazonaws.com/drums.mp3" />
</Assets>
<Room use_local_asset="room_plane" >
<Text pos="0 2 4" xdir="-1 0 0" ydir="0 1 0" zdir="0 0 -1" col="red" scale="2 2
2" >Hello World!</Text>
<Image id="hello_world" pos="0 1.5 8" xdir="-1 0 0" ydir="0 1 0" zdir="0 0
-1" />
<Object id="plane" pos="5 1.5 8" xdir="-1 0 0" ydir="0 1 0" zdir="0 0 -1"
scale="4 2 1" collision_id="plane" lighting="false" websurface_id="cats" />
<Video id="vid" pos="-5 1.5 8" xdir="-1 0 0" ydir="0 1 0" zdir="0 0 -1"
scale="1 1 1" lighting="false" />
<Object id="lamp" pos="0 0 3" />
<Sound id="drums" rect="-100 -50 100 50" />
<Link mirror="true" url="" auto_load="true" locked="true" active="false"
pos="6 0 -5" xdir="0 0 1" ydir="0 1 0" zdir="-1 0 0" draw_text="false"
draw_glow="false" />
</Room>
</FireBoxRoom>
</body>
</html>
```

3. Viewing your Room

Save the file on your local drive as a .html.

There are 2 ways to see the room you have just made:

- i. Right click on the file and select 'open with' (Windows), select 'Choose another app' – scroll down and find JanusVR.
- ii. Start JanusVR and press 'Tab' – type or copy/paste the local file path for the .html file (c:\helloworld\hello.html for example). To paste a link in JanusVR desktop mode press 'Tab', click on input box and press Control-V



You now know how to display an object, the next section has some exercises to help you get more familiar with displaying an object

At the end of this document is a list of all the options for loading objects- have fun!

Exercises:

Change the url="" to create a link to a different space.

Swap:

```
<Link url="http://www.janusvr.com/index.html" pos="6 0 2" xdir="0 0 1" ydir="0 1 0" zdir="-1 0 0" col="green" title="JanusVR" />
```

To:

```
<Link url="http://www.youtube.com" pos="6 0 2" xdir="0 0 1" ydir="0 1 0" zdir="-1 0 0" col="green" title="JanusVR" />
```

Or:

```
<Link url="http://www.reddit.com" pos="6 0 2" xdir="0 0 1" ydir="0 1 0" zdir="-1 0 0" col="green" title="JanusVR" />
```

Change the size of the portal - make it huge!

To:

```
<Link url="http://www.janusvr.com/index.html" pos="6 0 2" xdir="0 0 1" ydir="0 1 0" zdir="-1 0 0" col="green" title="JanusVR" />
```

Add:

```
<Link url="http://www.janusvr.com/index.html" pos="6 0 2" xdir="0 0 1" ydir="0 1 0" zdir="-1 0 0" col="green" title="JanusVR" scale="10 10 10" />
```

Add a thumbnail image to the portal

To:

```
<Link mirror="true" url="" auto_load="true" locked="true" active="false" pos="6 0 -5" xdir="0 0 1" ydir="0 1 0" zdir="-1 0 0" draw_text="false" draw_glow="false" />
```

Add:

```
<Link mirror="true" url="" auto_load="true" locked="true" active="false" pos="6 0 -5" xdir="0 0 1" ydir="0 1 0" zdir="-1 0 0" draw_text="false" draw_glow="false" thumb_id="hello_world" />
```

Displaying a portal in a Room:

A Link creates a portal which can be used to connect to another FireBoxRoom, or any other webpage specified with a URL.

- **url** (default "") - specify the URL to link to
- **title** (default "") - a title for the page the URL links to (shown until it is loaded)
- **pos** (default "0 0 0") - specify the position (anchor point is centered horizontally, and at the bottom vertically)
- **fwd** (default "0 0 1") - specify the orientation (or use xdir, ydir, zdir, defaults "1 0 0", "0 1 0", "0 0 1")
- **col** (default "#ffffff") - Allows the user to change the colour of the associated element. The formatting is as follows:
 - #rgb/#rrggb/#rrrgggb/#rrrrggggb where any valid hex color is accepted
 - r g b Where each value is from 0 to 1.
 - r g b a Where each value is from 0 to 1.
 - rgb(r,g,b) where r g and b are from 0 – 255
 - rgba(r,g,b,a) where r g and b are from 0 - 255, a is from 0 to 1.
 - hsl(h,s,l) where h is from 0 to 360, s & l are from 0 to 100.
 - hsla(h,s,l,a) where h is from 0 to 360, s & l are from 0 to 100, a is from 0 to 1.
 - Also, any legal web colour name is accepted as input.
- **scale** (default "1.8 2.5 1") - scale the portal, but note that scaling is only possible along x (horizontal, minimum scale 1.8), and y (vertical, minimum scale 2.5) directions
- **draw_glow** (default "true") - whether to show the portal glow along the boundary
- **draw_text** (default "true") - whether to show the text at the top of the portal for URL and page title
- **auto_load** (default "false") - if true, the room that the portal links to will be loaded immediately; if false, the portal must first be clicked before it will load the room

- **thumb_id** (default "") - if set to the id of an AssetImage, a "thumbnail image" will be displayed for the portal, useful for indicating what lies through it before it's loaded. The AssetImage content is expected to be square (width and height equal), and the portal will crop the image according to its dimensions to preserve the aspect ratio.
- **draw_layer** (default 0) - Allows the user to manually sort the depth order of an object. For instance, an object of depth 0 will draw above an object of depth 1. Priority may be negative. Each priority group is also sorted based on distance.
- **mirror** (default "false") - Boolean that determines whether or not the portal will be a mirror. To mirror the room's contents, the url of the link must be that of the containing room.

<http://www.janusvr.com/guide/markuplanguage/index.html#link>