Ambiens VR SRL – Via Marsala 29H 00185 – Rome (Italy) info@ambiensvr.com

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Latest update 27/01/2021
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Intro

Thank you for buying AT+Explore! This plugin is made by ArchViz professionals for architects and engineers to speed up the process of creating and build awesome interactive archviz presentations in Unity.

We are Ambiens VR, an Italian company focused on the creation of software that helps architects and engineers building advanced projects presentations for their design team and clients.

AT+Explore is only a piece of the ArchToolkit Suite, a series of plugins, software and cloud services aimed to solve any major problem encountered by professionals when switching from offline/static render to Real Time dynamic presentations.

Useful Links:

1. AmbiensVR YouTube Channel
2. ArchToolkit Facebook Group
3. ArchToolkit website

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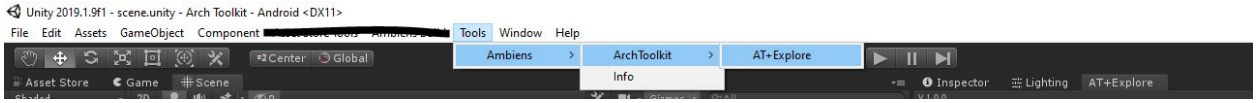
First steps

Open the AT+Explore panel



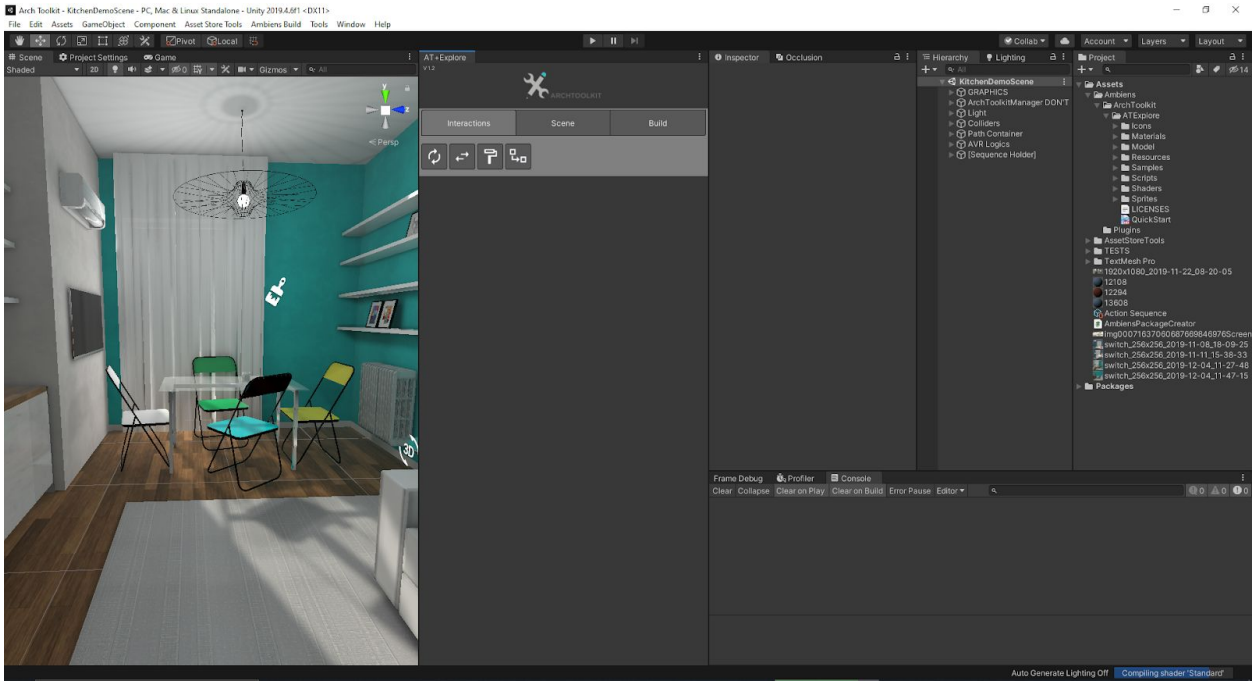
AT+Explore is a single panel in the Unity Editor containing every function.

To open the panel, click on the top menu: **Tools > Ambiens > ArchToolkit > AT+Explore**

Explore the panel options

The panel is composed of three main tabs:

Interaction Tab

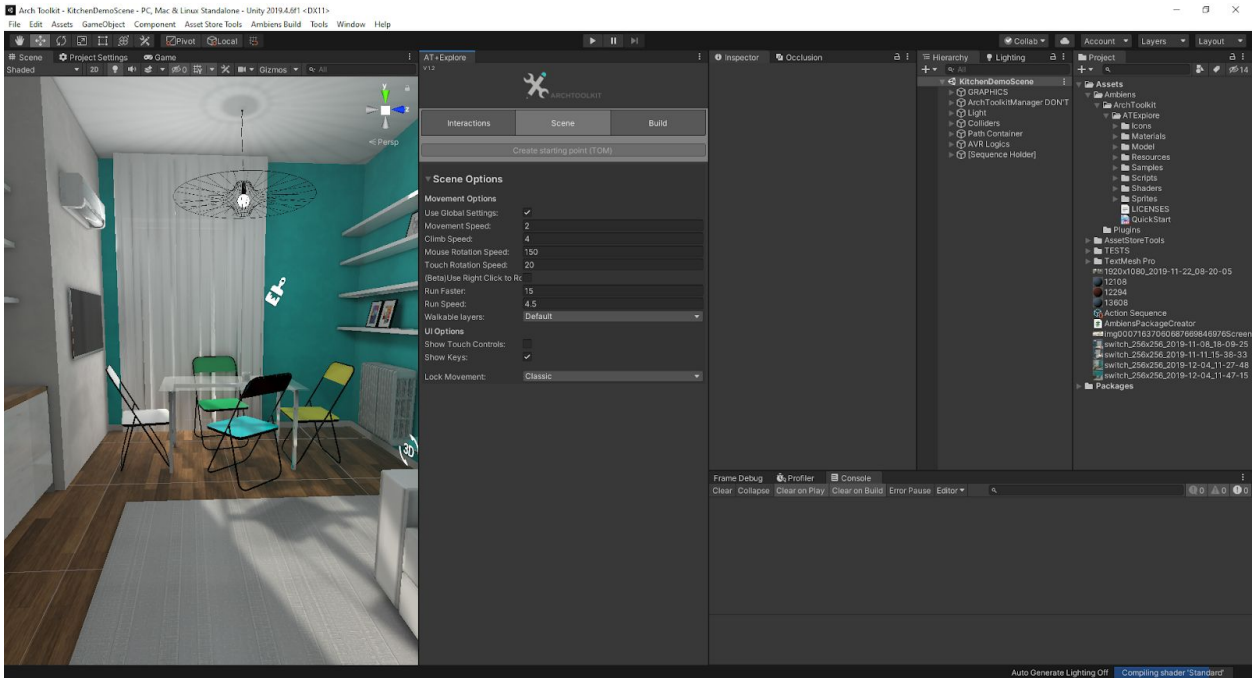


Once you have created the scene you can count on this tab to add the magic.

Here you can find all fast-interaction buttons that will let you create dynamic doors, drawers, dynamic material switches and so on.

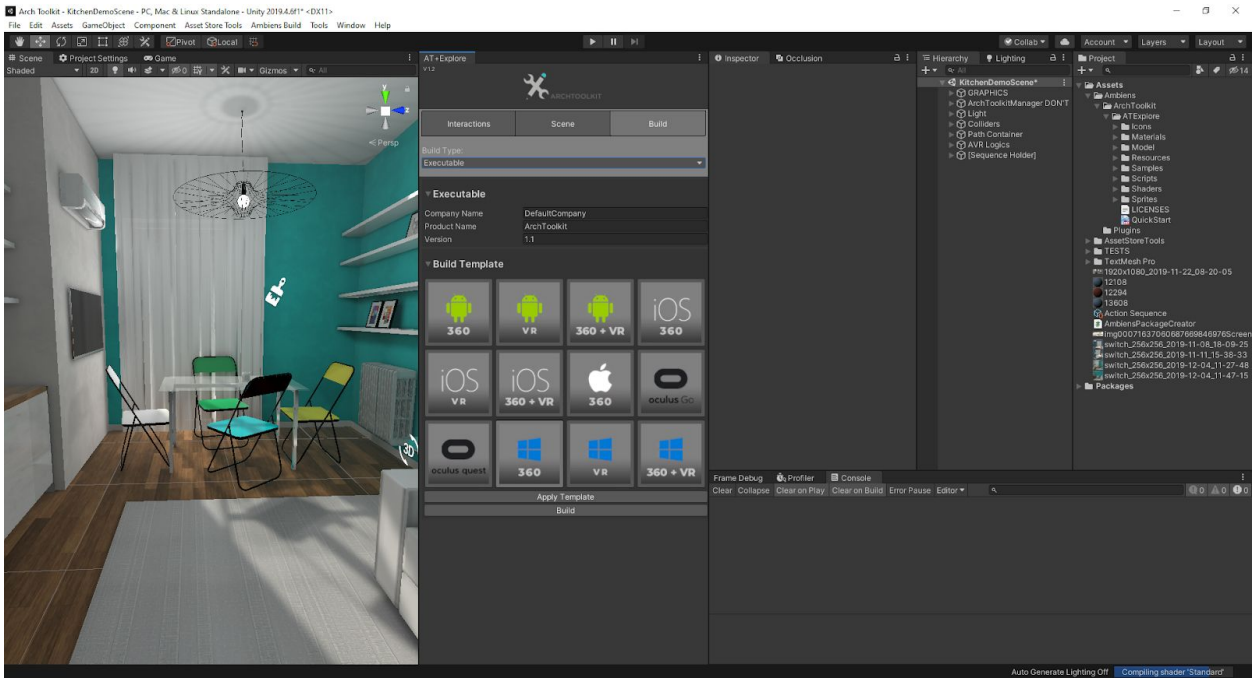
When you need to create a different set of interactions you can use the Action Sequence system (described below).

Scene Tab



Contains all movement options like movement and rotation speeds and scene-specific options.

Build Tab



Introduced in v1.2, it contains all different build options. Every button is a “build template”. A build template is a mix of platform (PC, Android, iOS etc) and movement type (touchscreen, VR, AR etc).

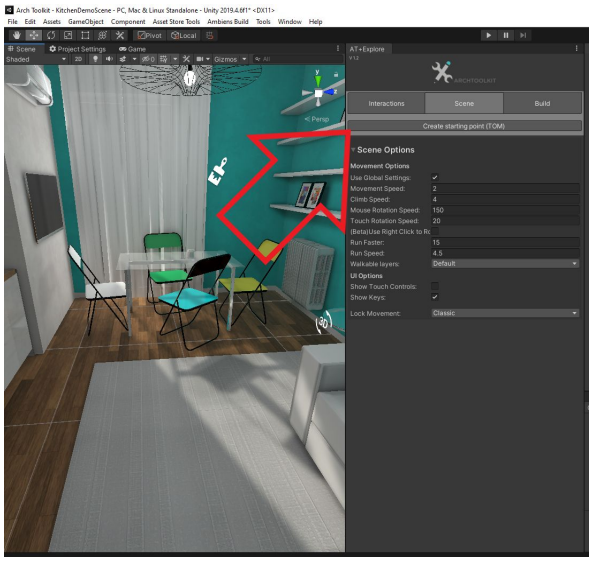
When you select a build template you’ll need to click on “Apply Template”, this option will update the project options and needed packages via the package manager. IE. when you select Oculus Quest Template Explore will do this set of operations automatically:

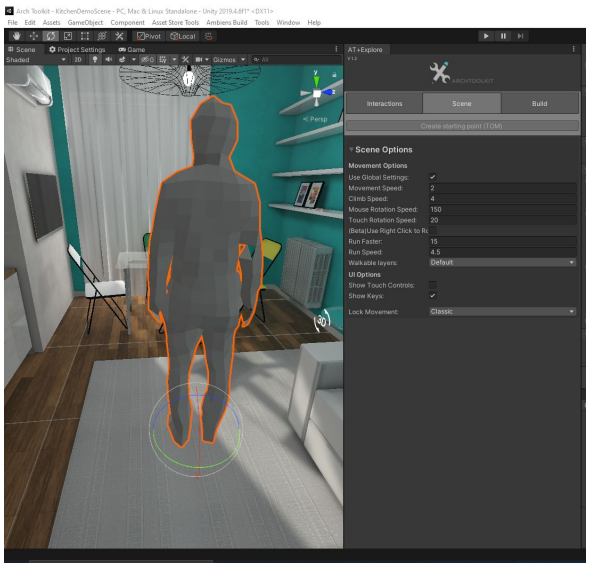
- Set the right graphics api
- Set the right platform
- Import XR Legacy input (needed as of v1.2 for VR)
- Import textmesh pro
- Setup the XR options

You can also choose to build the scene as an Asset bundle. This option can be useful when you’re deploying an application that needs to be updated after the deploy and can be easily set up using the Action Sequence.

Your first interactive scene

STEP 1 - add Tom





Tom corresponds to the starting of the real time experience on every build template.
In the editor it is represented by a humanoid figure with ~1.70mt of height.
We experienced problems with import scale working with various import files, especially during first times using Unity: once you have Tom inside your scene you can automatically understand if the units of your input file are correct.

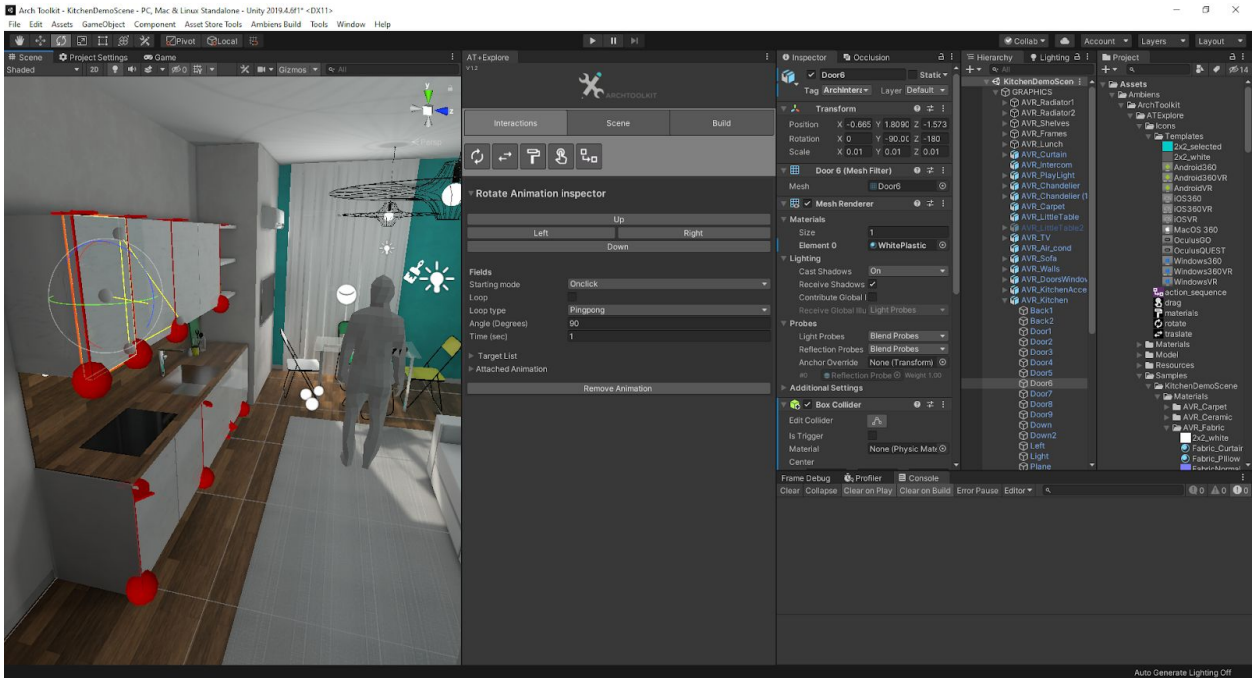
To add Tom in the scene simply click on “Create starting point (TOM)” in the *Scene Tab.*

Don’t worry about placing Tom precisely on the floor. The system will automatically set the height of the character once you play your scene.

NB: Tom can walk automatically on every surface that has the Default Layer. If your scene has different layers and you want to walk on these you can add them in the Walkable Layer mask.

That’s it! you can now just hit play and move freely in your scene.

STEP 2 - Add interactions



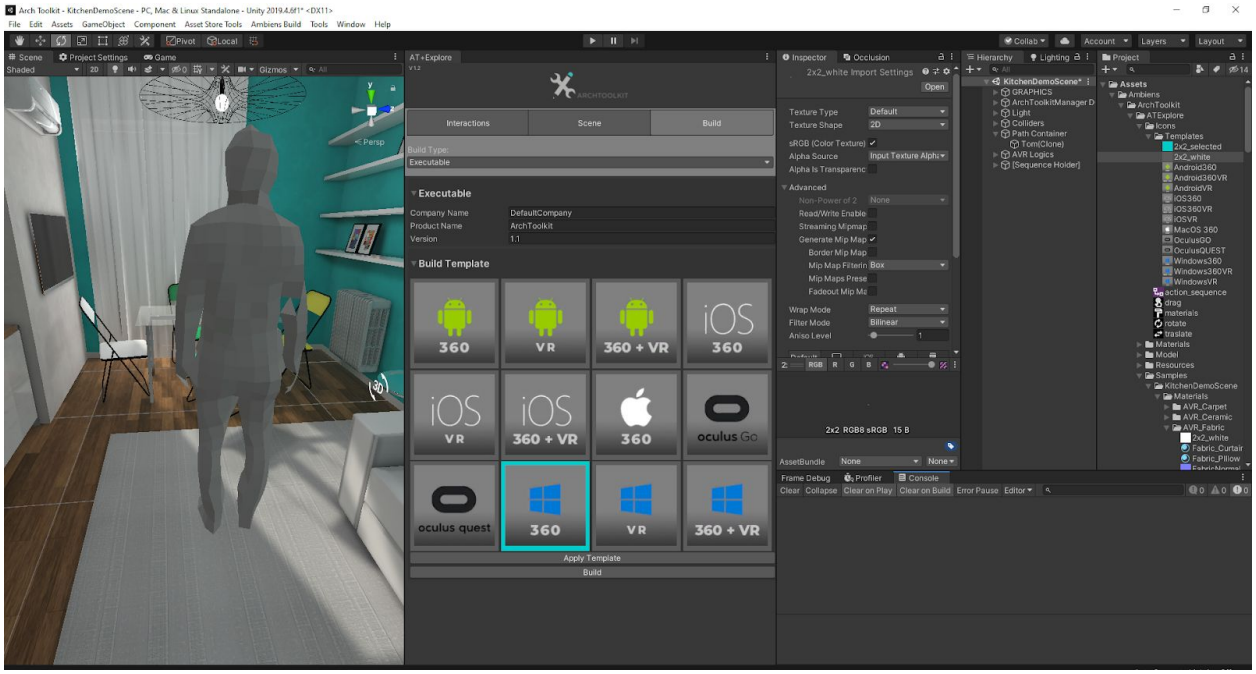
Once we have our starting point set up we can start adding dynamicity to our scene. AT+Explore has a prebuilt set of interactions available directly on the *Interaction tab.*

The process to add a prebuilt interaction is the same for each interaction:

4. Select the mesh/object to animate
5. Select the interaction to add
6. Edit the interaction options using the inspector available below the interaction buttons

In the above figure we have just added some rotation to the branches of kitchen, you can try this on the demo scene available in the package.

STEP 3 – choose the visualization type



Starting from v1.2 all the managed possibilities are listed in the **build tab.**

Just select the type of visualization you need and click on “apply template”, the plugin will automatically set all options and packages for you.

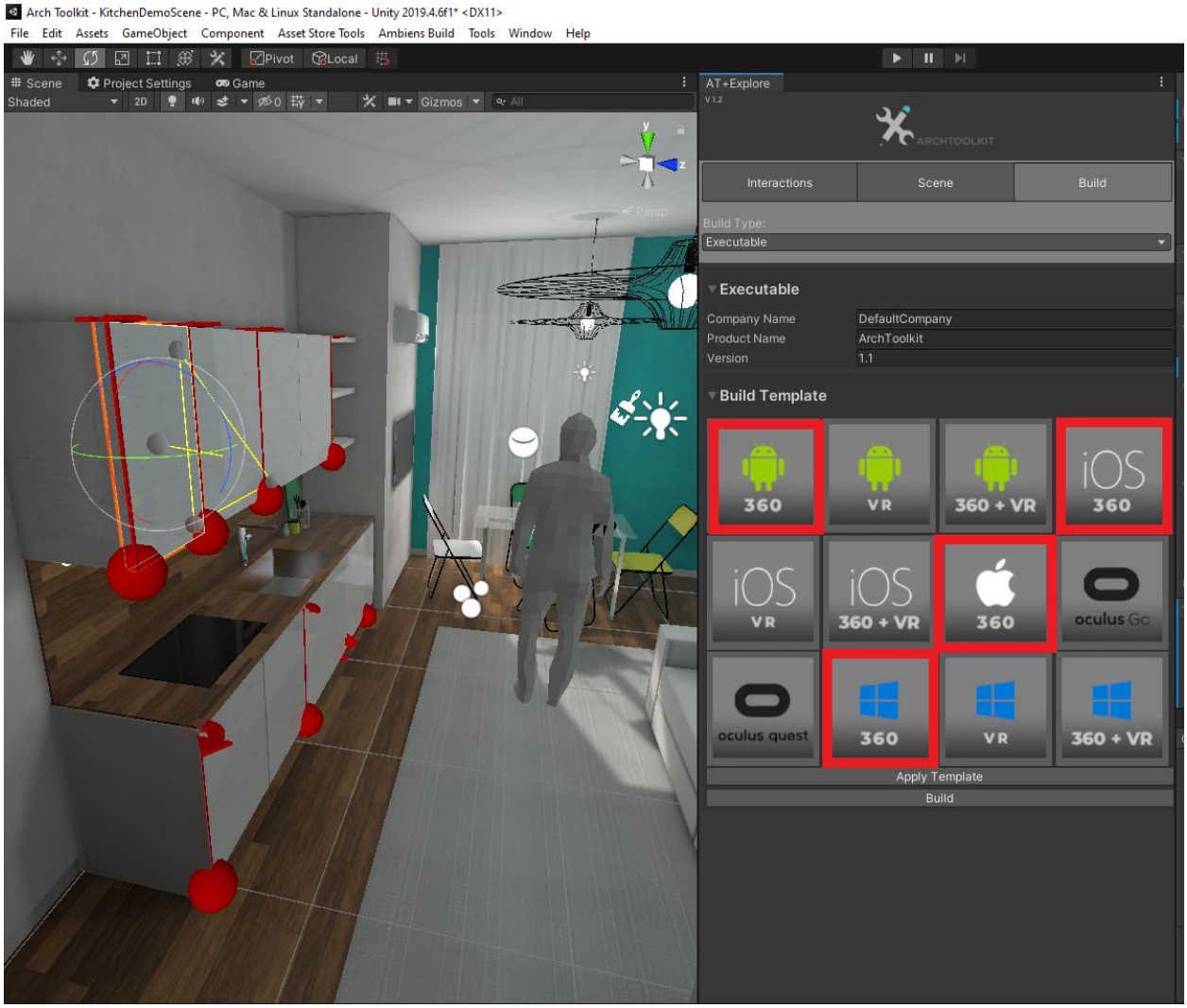
Available build templates:

- **Android**: 360, VR, VR/360 or AR (added in v1.3)
- **iOS**: 360, VR, VR/360 or AR (added in v1.3)
- **MacOS**: 360
- **Oculus GO**
- **Oculus Quest**
- **Windows**: 360, VR, VR/360

-

Once you have set up the build template you can press the “build” button that will open the Unity Build Settings dialog where you can add scenes and choose other build options.

Building a full-screen experience for smartphones and PC

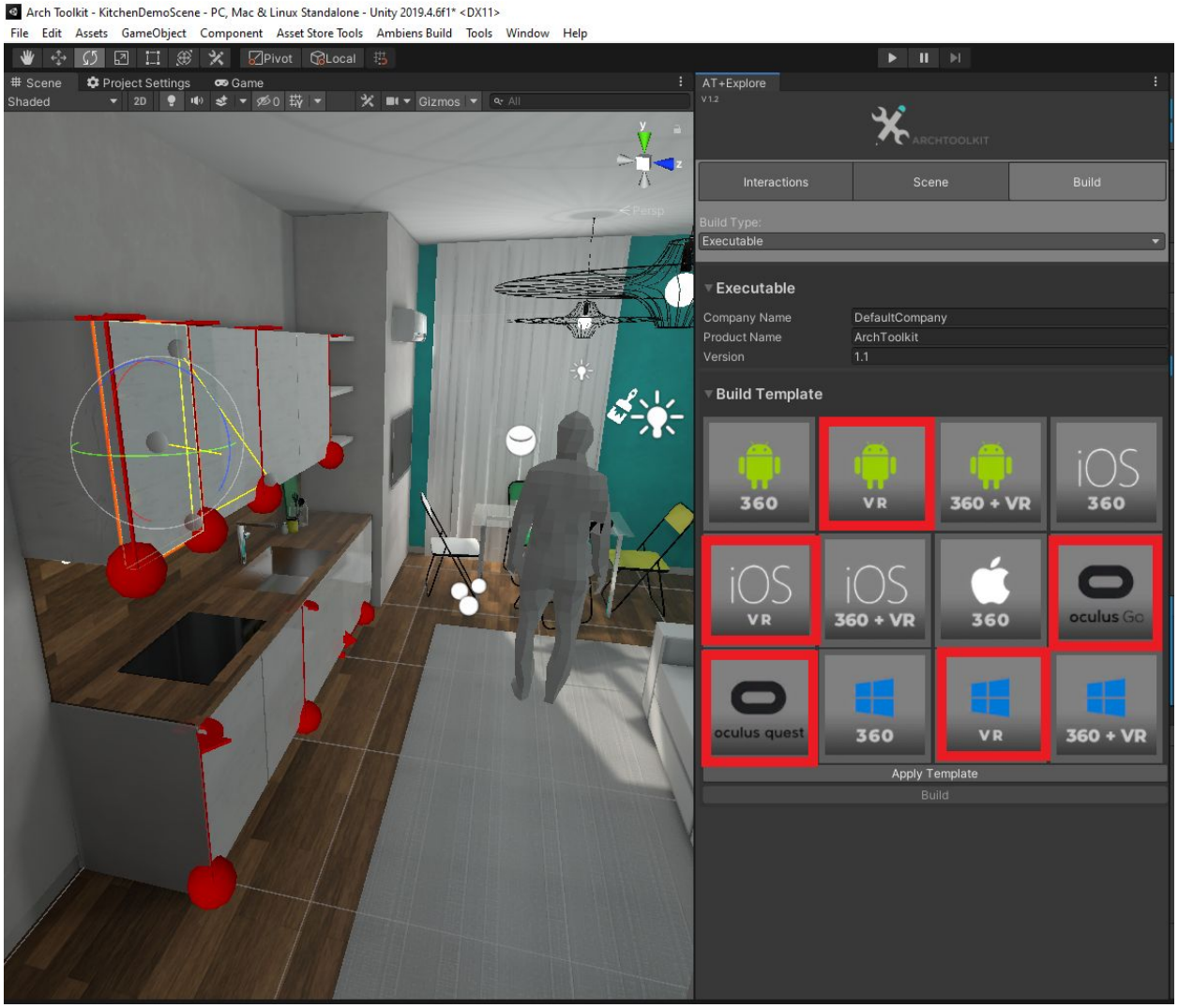


You can easily change the platform for which you want to create your build. In the above figure we selected all “360” or fullscreen build template available right now.

When you choose between one of them the project will be optimized for the experience.

You can choose one of the 360 templates to test at runtime the scene before building on other platforms: if an interaction works in 360 then it will work also on VR.

Building for VR headsets



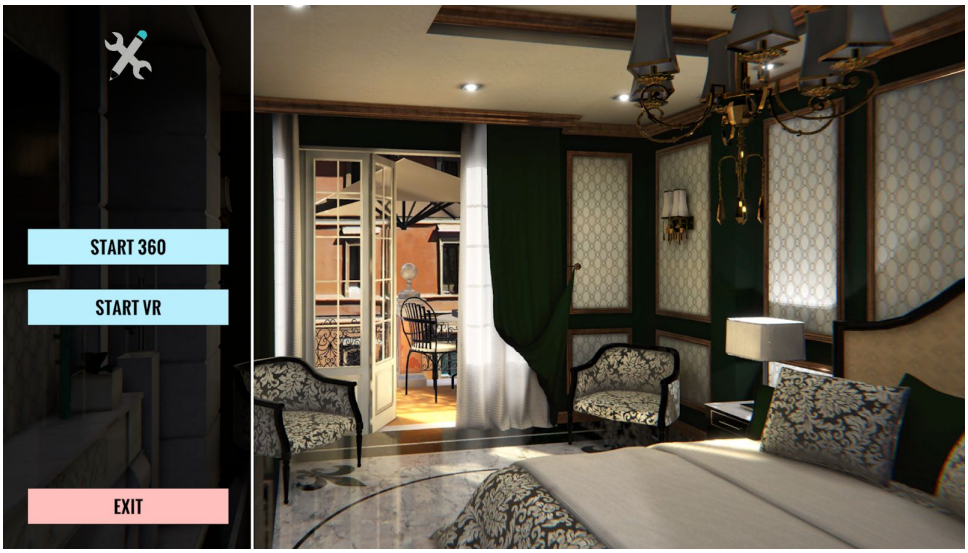
You can easily switch between a full screen to a VR experience.

In the image you can see the basic settings to enable a VR presentation.

Please note that all settings and required packages for the VR presentation are managed by AT Explore, do not install or tweak settings. If you have any issue please refer to the support.

Building for 360 and VR

If you choose between one of the above *build templates* (360+VR) the final app is ready to switch between the two modes.



Once you're using this mode you'll need to add another scene before the actual viz scene, in the example here you can see the main menù of an application where the user can choose between 360 and VR.

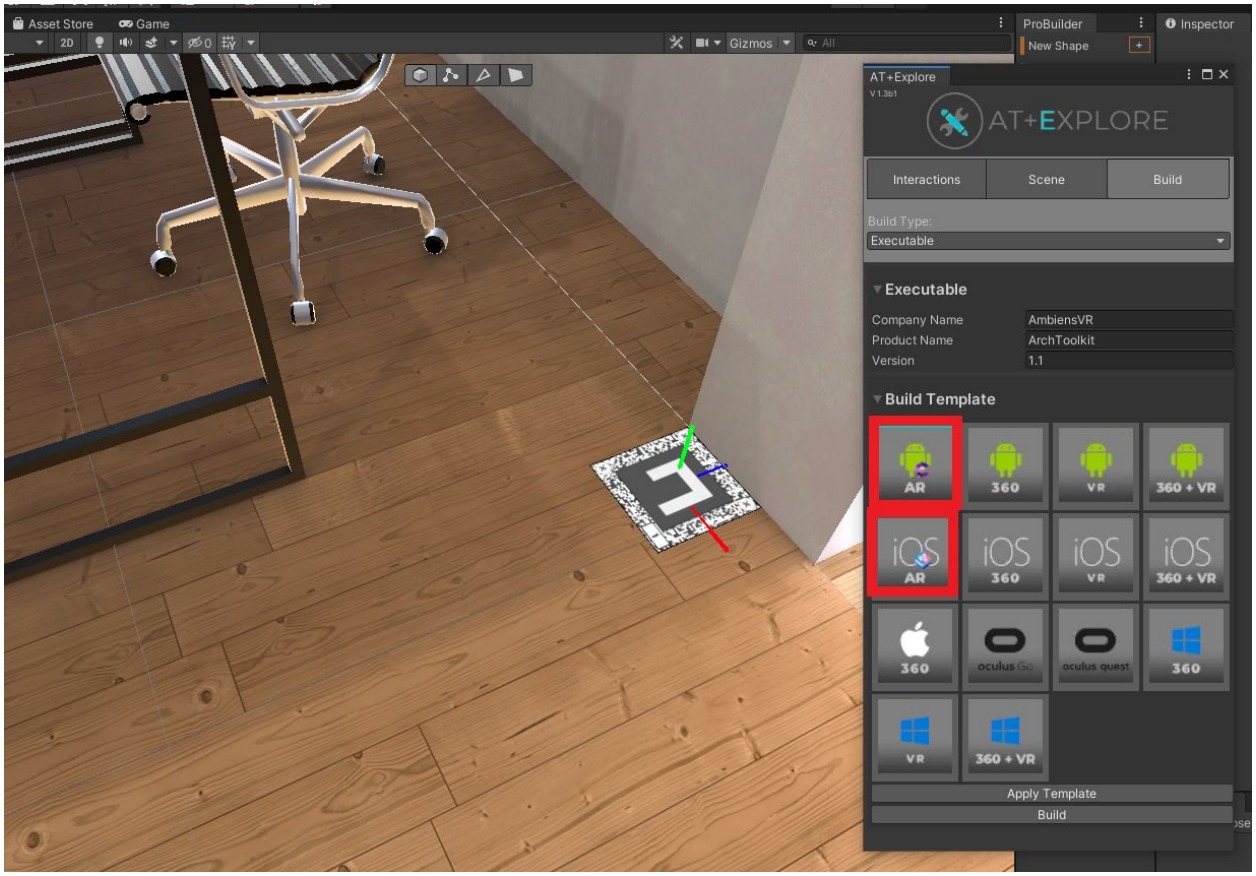
I this scene you can refer to the "settings" asset in the AT Explore folder.

To choose between 360 and VR you can use these lines of code in your main menu:

```
//GO 360
settings.movementTypePerPlatform = ArchToolkit.MovementTypePerPlatform.FullScreen360;
//GO VR
settings.movementTypePerPlatform = ArchToolkit.MovementTypePerPlatform.VR;
```

(Here you can find the full source code)

Building for AR (beta)



The AR template is designed for 1:1 Augmented Reality projects. It lets you create digital versions of the real world and it needs markers for this real-to-digital link.

Please note that all scenes and interactions are the same, so for example you can choose to display the same scene via an Oculus Quest or your iPad in AR just by switching the build template.

AR Build Templates are currently in Beta, there are some things that do not reflect the way we want them to be:

1. The template code is ready to use more than one marker simultaneously but it needs more refinement so right now we deeply discourage you to use more than one marker per scene.
2. The template needs one additional step to do before building (see below)

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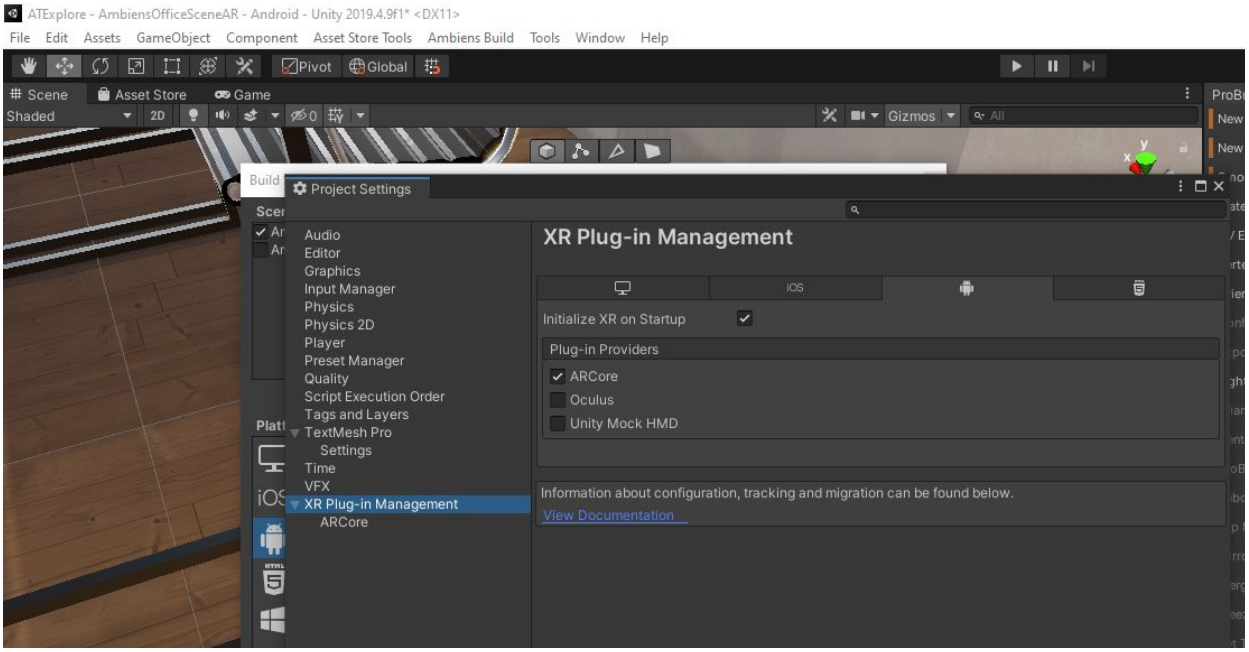
How to add AR functionality to your project/scene

1. Switch template to iOS AR or Android AR.

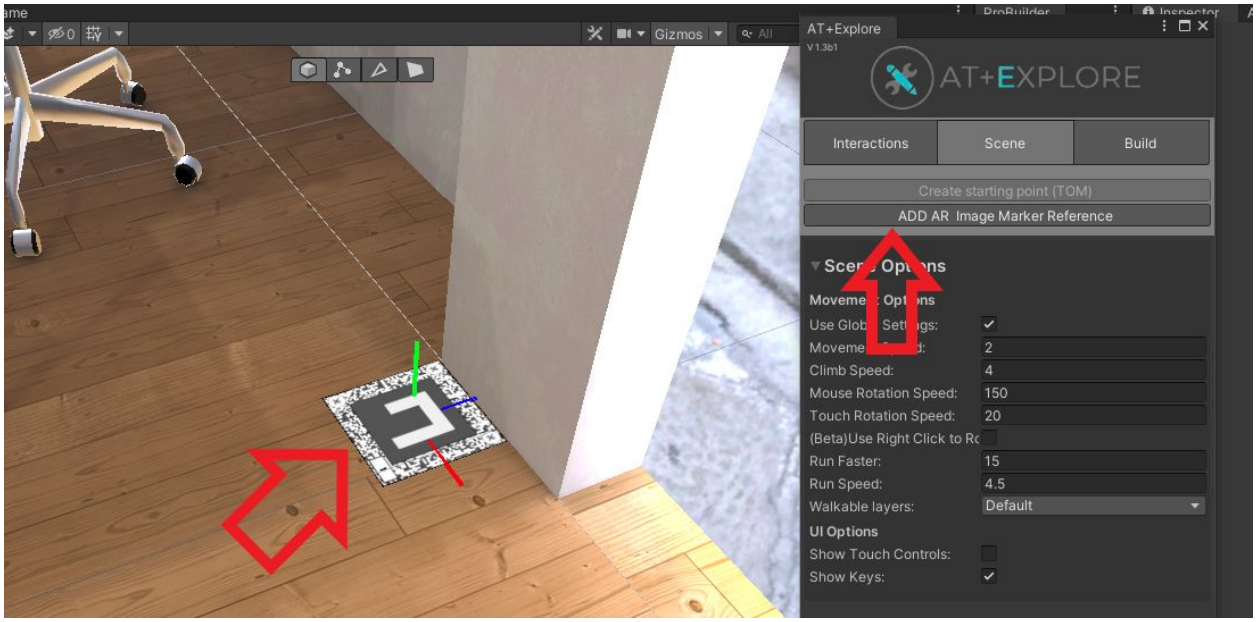
in the AT+Explore Panel -> Tab Build -> Select Android AR or iOS AR -> Click Apply Template (image above)

2. Enable XR Plugins (ARCore and ARKit)



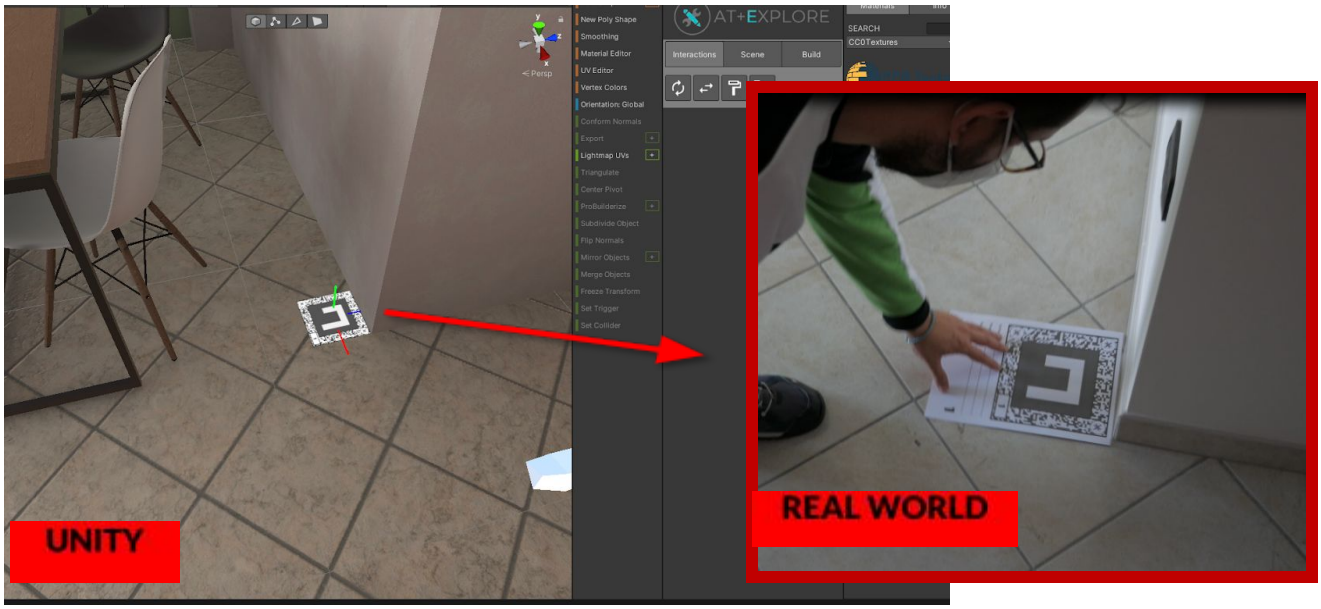
Go to *Edit->Project Settings->XR Plug-In Management* and Enable AR Core (if you're building on Android) or AR Kit (on iOS).

3. Add the Marker in the scene



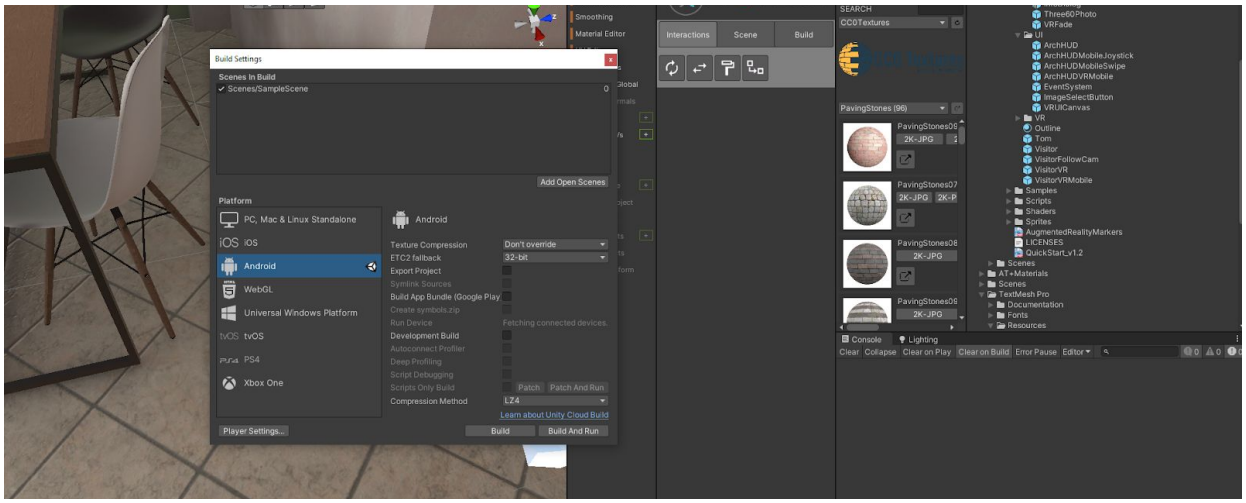
The marker should be on the floor, use an edge to maximize the alignment between the virtual marker and the real one.

4. Print the marker from the included pdf and put it on the floor of the "real" World



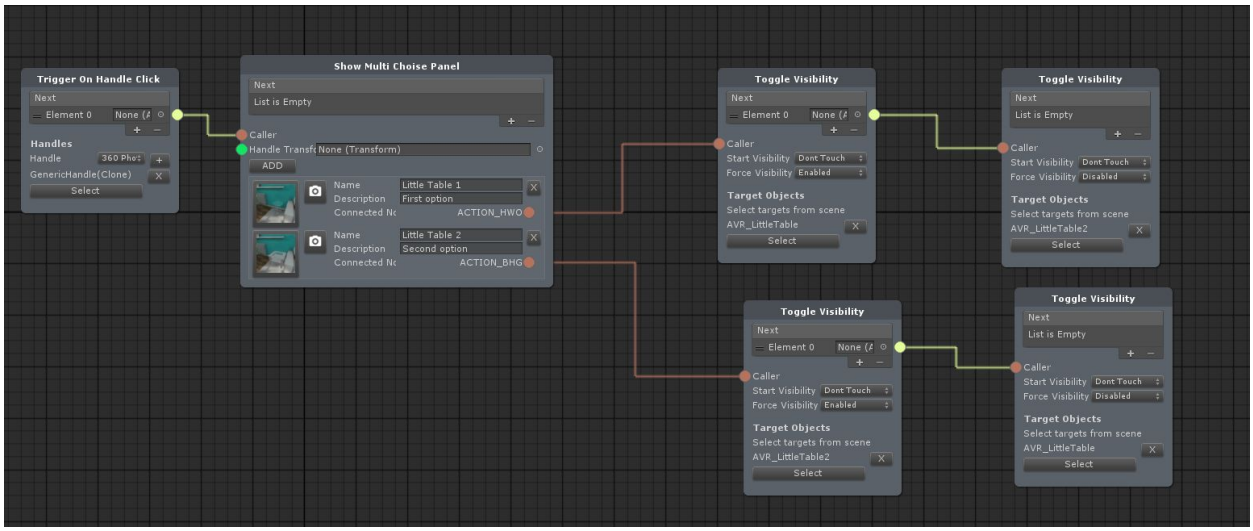
We created 10 markers with the highest possible score of Image Recognition. You can select one of them and print it from the included PDF file.
Please use A4 paper format for the marker. Until we say it explicitly, please use only one marker per scene, and put it on the floor (we're working on multiple markers alignment for larger spaces).

5. Build your app



AT+Explore takes care of all the build options, you only need to add the scene to the Build panel (File -> Build Settings...) and then press **build and run.**

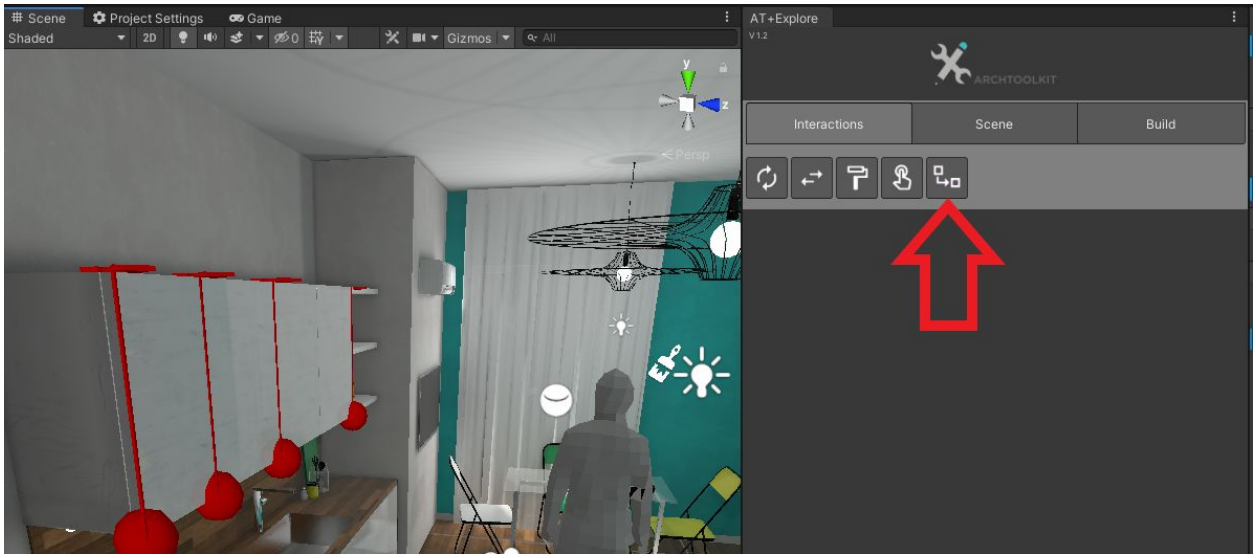
Action sequence (Advanced Interactions)



If you need more complex or different interactions in the scene you can easily add a custom one without coding. In v.1.0.0, AT+Explore comes with the Action Sequence System, a visual scripting environment build on top of the basic interaction system.

You can easily create a custom action sequence by following the steps below based on the Kitchen Demo Scene:

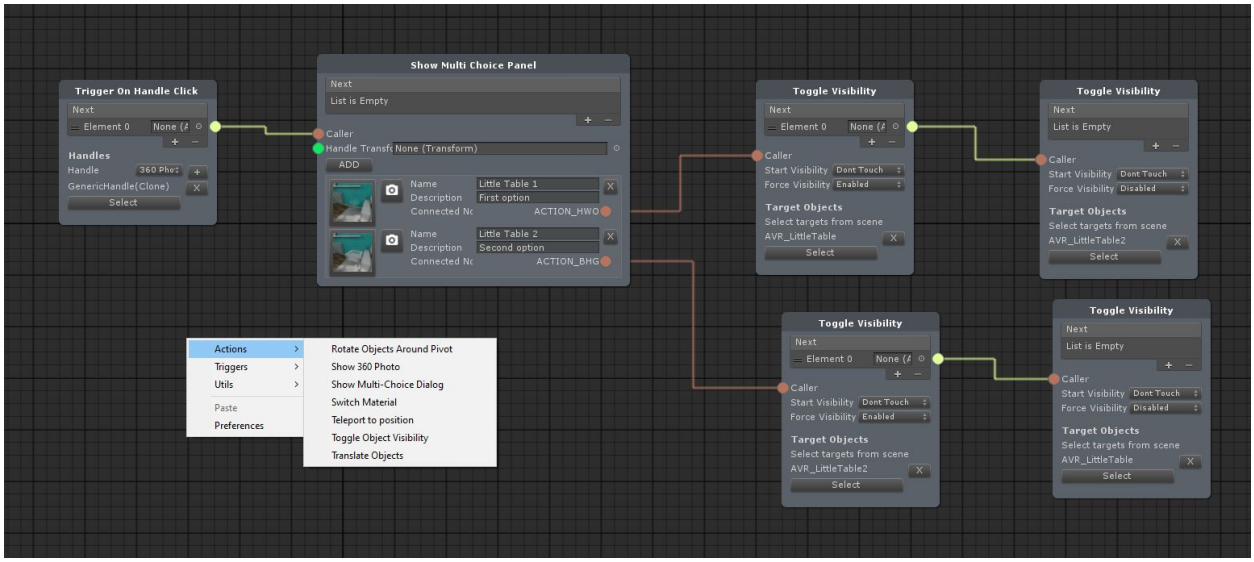
STEP 1. Create or select the sequence holder



The sequence holder is a special GameObject that links the action sequence to the scene, this means that you can re-use your action sequences in multiple scenes just using another Sequence Holder.

You can add or select the sequence holder using the last button in the *Interaction tab.*

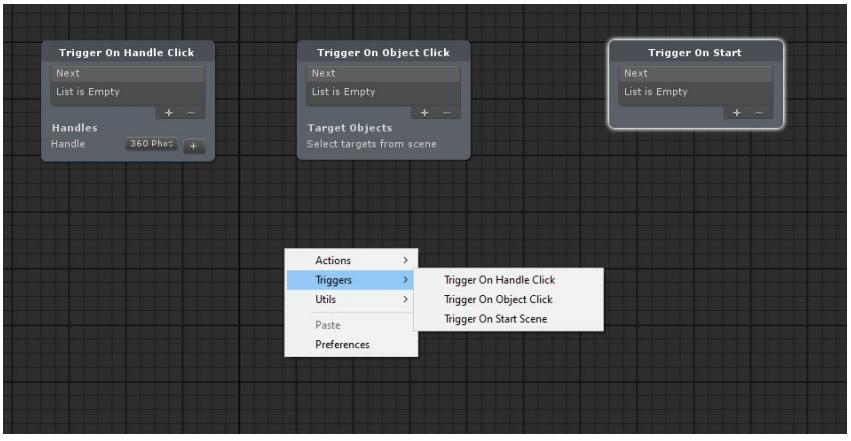
STEP 2. Edit the Action Sequence Graph



As stated above, the Action Sequence Graph is a sequence of chained actions.

When creating a new Advanced Interaction for your scene you must think about these steps:

1. What **triggers** the sequence? A button, an object, or it must start at the beginning of the experience?
2. What is the sequence of events I need to present the user? Is there any choice he can do?

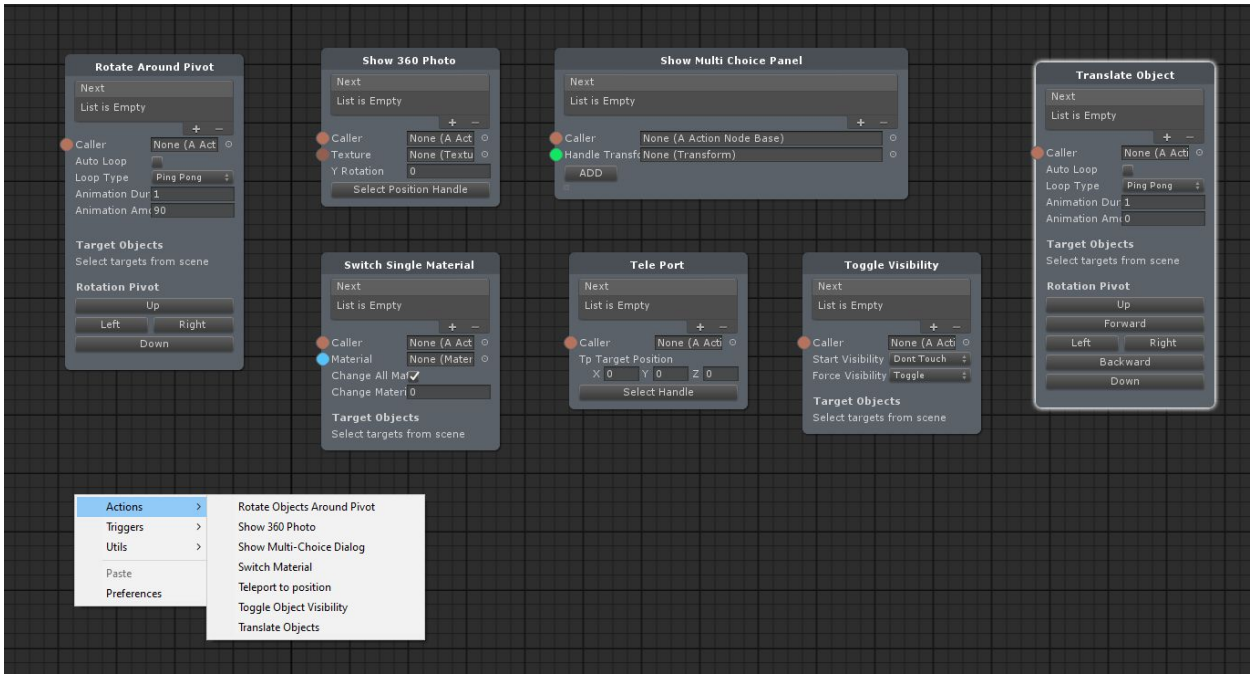


The first question is answered by the first node type, Triggers.

Every sequence starts with a trigger, there are 3 triggers right now, the names are self -explanatory.

- On Handle Click
- On Object Click
- On Start

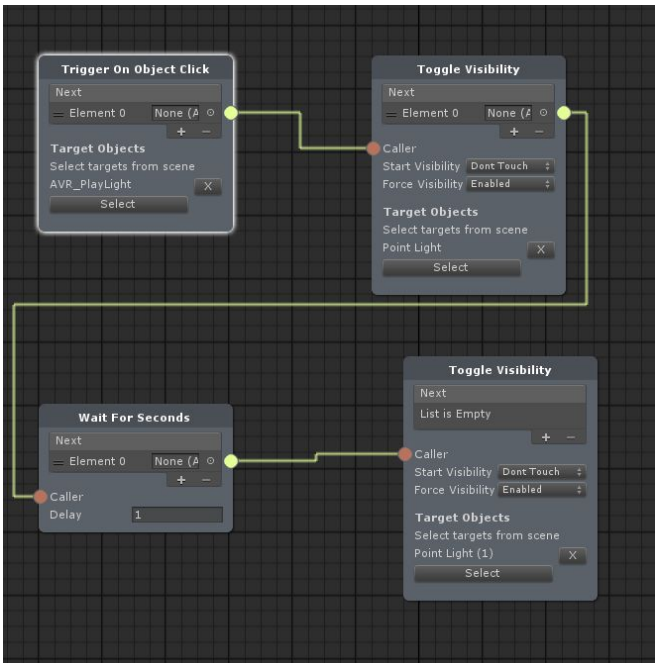
When the sequence has been triggered it's time to add Actions



In the above image you can see the list of available actions.

Every Trigger has a *Next* list, every action ha a *Next* list and a *Caller attribute*, if you connect a *Next item* of a Node A to the *Caller attribute* of Node B, during play mode the Node A will call the excecution of Node B.

Example: in the image below there's a nice Action Sequence that will lights up a room by turning on one light at the time.



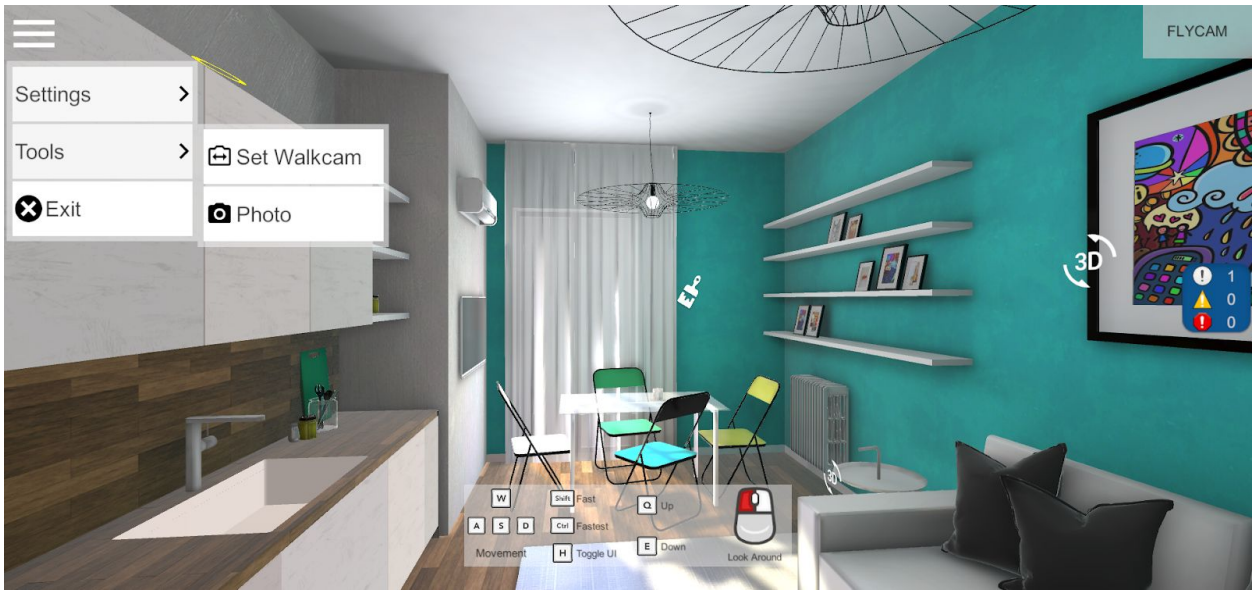
The first node is the Trigger, in this case we want the user to click on a switch on the wall so we can use *Trigger On Object Click.*

When the action is triggered we do a chain of actions:

1. Turn on the first light
2. Wait for 1 second
3. Turn on the second light

Other Integrations

Unity Native Gallery (AT+E 1.4.2 needed)



At runtime, the user can take a picture of the scene using the Photo Tool (Menu -> Tools -> Photo).

AT+Explore saves the picture to "persistentDataPath" folder but, if you want, you can easily integrate an awesome free plugin called Unity Native Gallery.

After downloading Unity Native Gallery you can put this script in the scene. Be sure to follow the Android Setup and iOS Setup instructions in the Native Gallery documentation.