



Exanaview Author 1.2

How-To Guide: Creating an in-wall bookshelf

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App Overview

The Exanaview app allows the user to create connected immersive 3D spaces in real-time in their real world environment as Augmented Reality (AR) content. The user can also create 3D objects in their real world environment.

App Content

Users can create the following content in Exanaview:

Regions: Immersive 3D geometry that represent interior and exterior spaces.

Prims: 3D geometry that connect regions and can also represent interior and exterior spaces.

Objects: 3D geometry that represent solid items.

Textures: Images that are captured from the real world environment and applied to regions, prims, and objects.

Planes: 3D surface geometry used to create AR content in the real world environment.

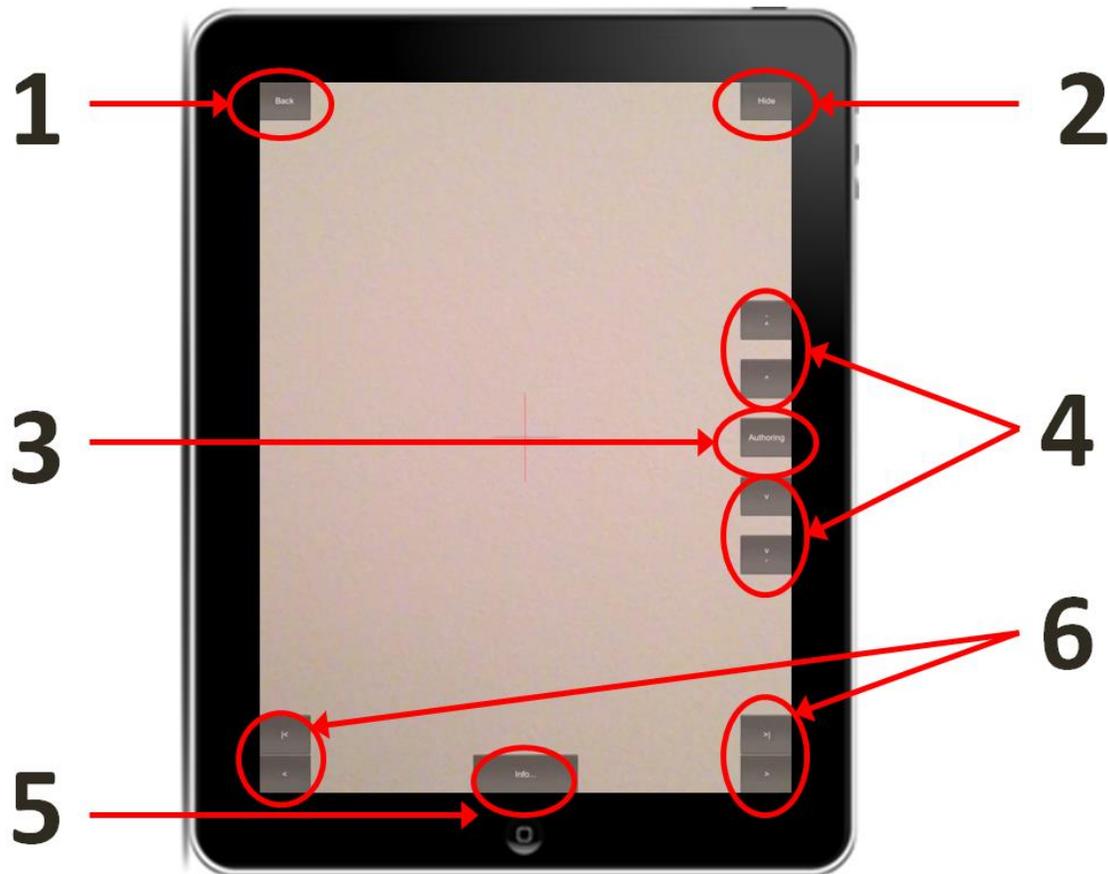
App Tips

When using the Exanaview Authoring App, keep the following in mind:

- Use the app in a well-lit environment with colorful patterns and details so that the AR enabled device can “see” the environment and perform adequate tracking. Avoid plain solid light colored environments with no colorful patterns or details in them.
- Perform spatial authoring and texture capturing as separate activities in different app sessions. Avoid capturing a texture while authoring 3D AR content because tracking can be lost and may be unrecoverable when aiming the device at a surface for a period of time to capture a texture. To help with this, captured textures are saved directly to the device and can be referenced later in another app session.

App Screen Layout

The Exanaview Author App has the following layout:



1 – Back Button: Return to previous page.

2 – Hide Button: Turn off the display of the buttons to view the AR content unobstructed.

3 – Action Group Button: Display the current action group.

4 – Action Group Navigation Buttons: Iterate through the action group options.

5 – Action Button: Perform an operation when the action button is pressed.

6 – Action Navigation Buttons: Iterate through the action options.

Activity: Creating an in-wall bookshelf

Items used:

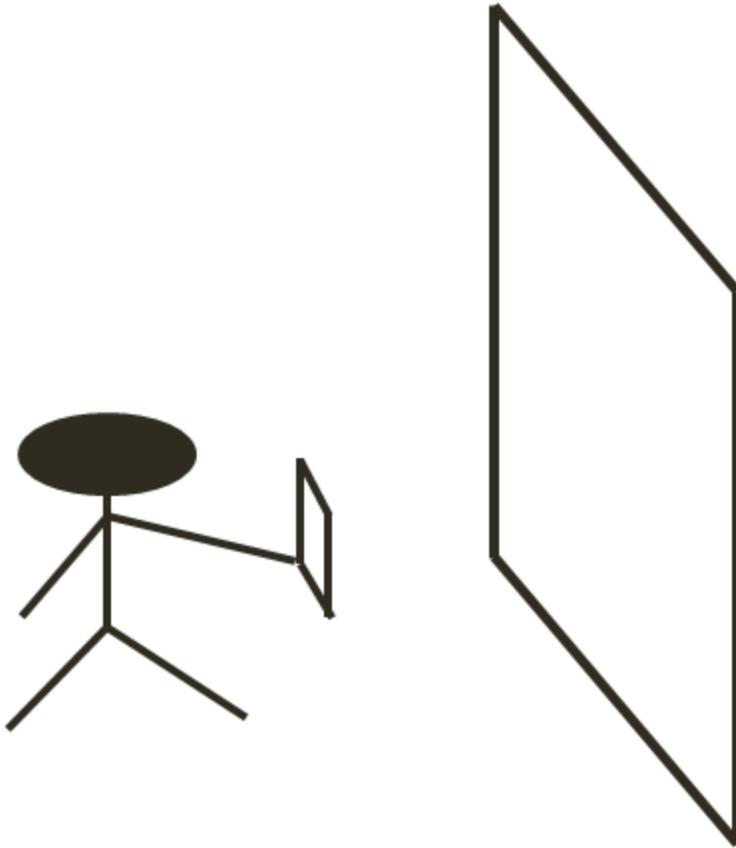
- Subtractive regions
- Subtractive Prims
- Textures

Prerequisites:

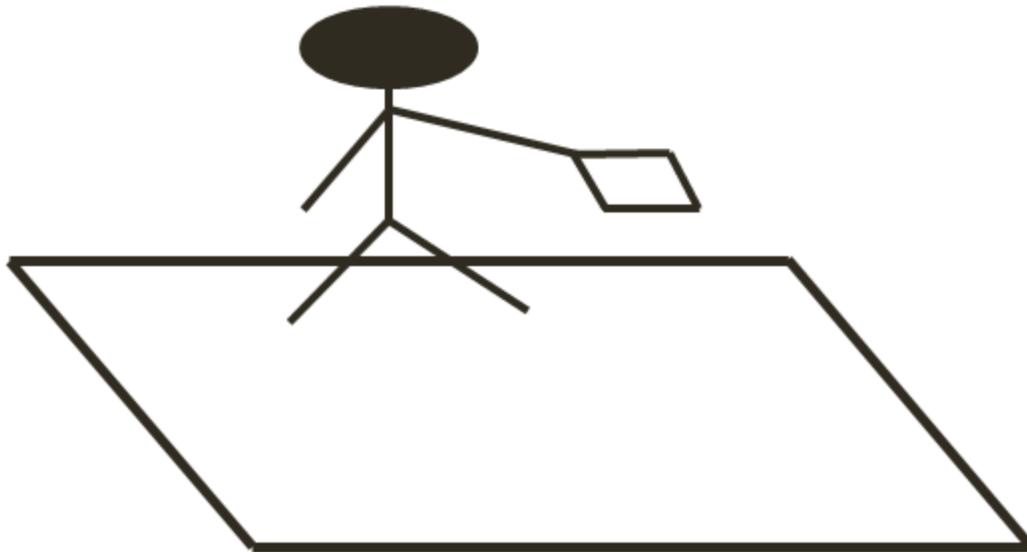
- Any room that's enclosed by four or more walls with a standard doorway entrance.

Capture Environment Textures

1. If you already created a wall texture from the “Walk-in Structure” activity, you can skip this section and move on to the “Spatially map the room” section. If you haven't created a wall texture or want to create more textures, then proceed to the next step.
2. Launch the Exanaview App.
3. Press “Skip” to abort the plane detection step.
4. Press the “Capture Texture” button.
5. Press the “Capture Texture On/Off” button at the bottom center of the device screen to enable Capture Texture. A yellow capture texture box will appear around the device crosshair.
6. (Optional) Press the “Resize Capture...” button to change the size of the capture texture box. Swipe the device screen to change the size. Press “Back” when done.
7. Aim the device at a clear wall to capture the paint color, tile, or wallpaper. Make sure the device's orientation closely matches the orientation of the capture wall's surface as seen in the image below. Press “Get Texture”.



8. (Optional) Aim the device at the floor to capture the floor tile, or carpet. Make sure the device's orientation closely matches the orientation of the capture floor's surface as seen in the image below. Press "Get Texture".

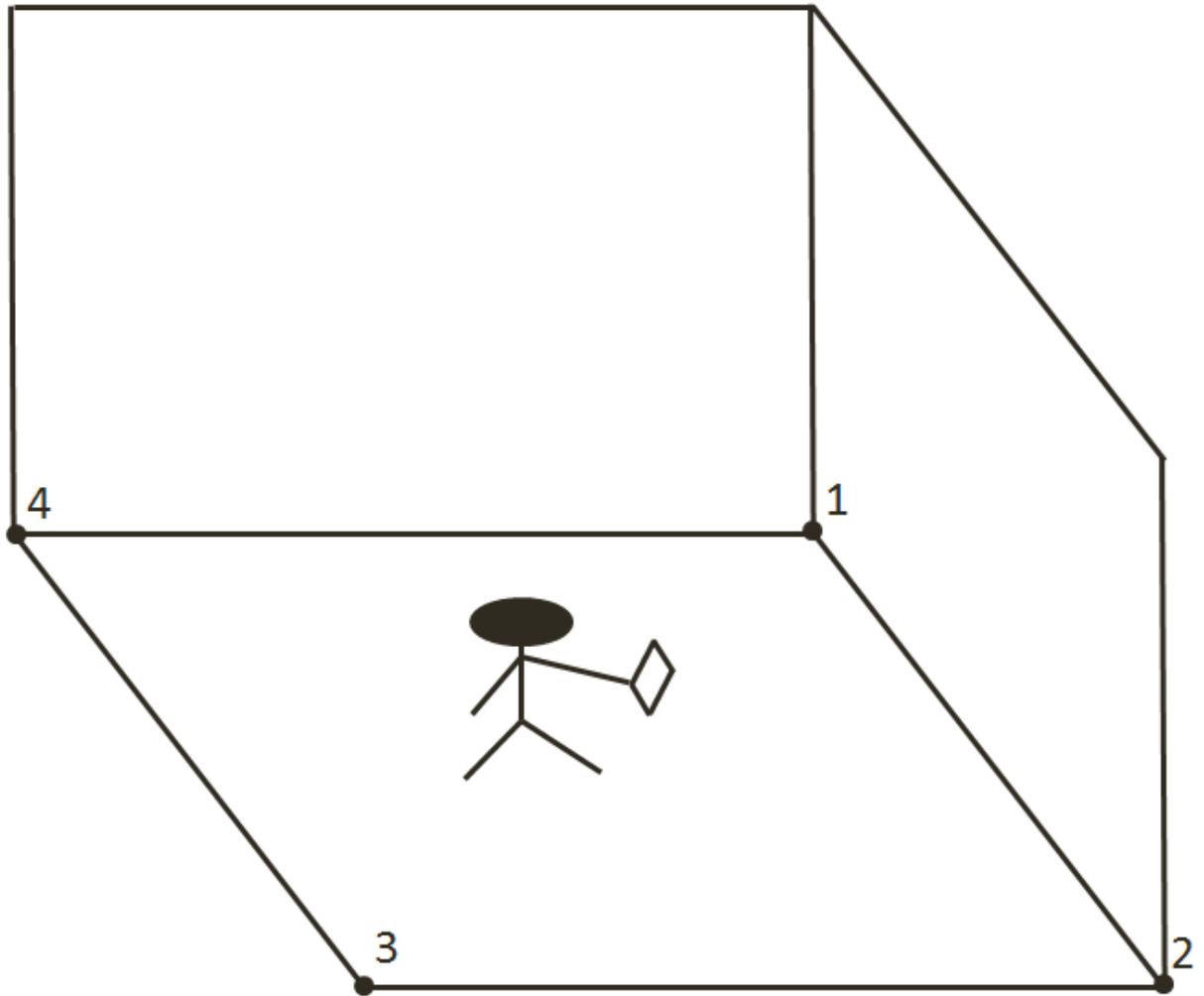


Note:

- To see a listing of the captured textures, press the “Delete Texture...” button.

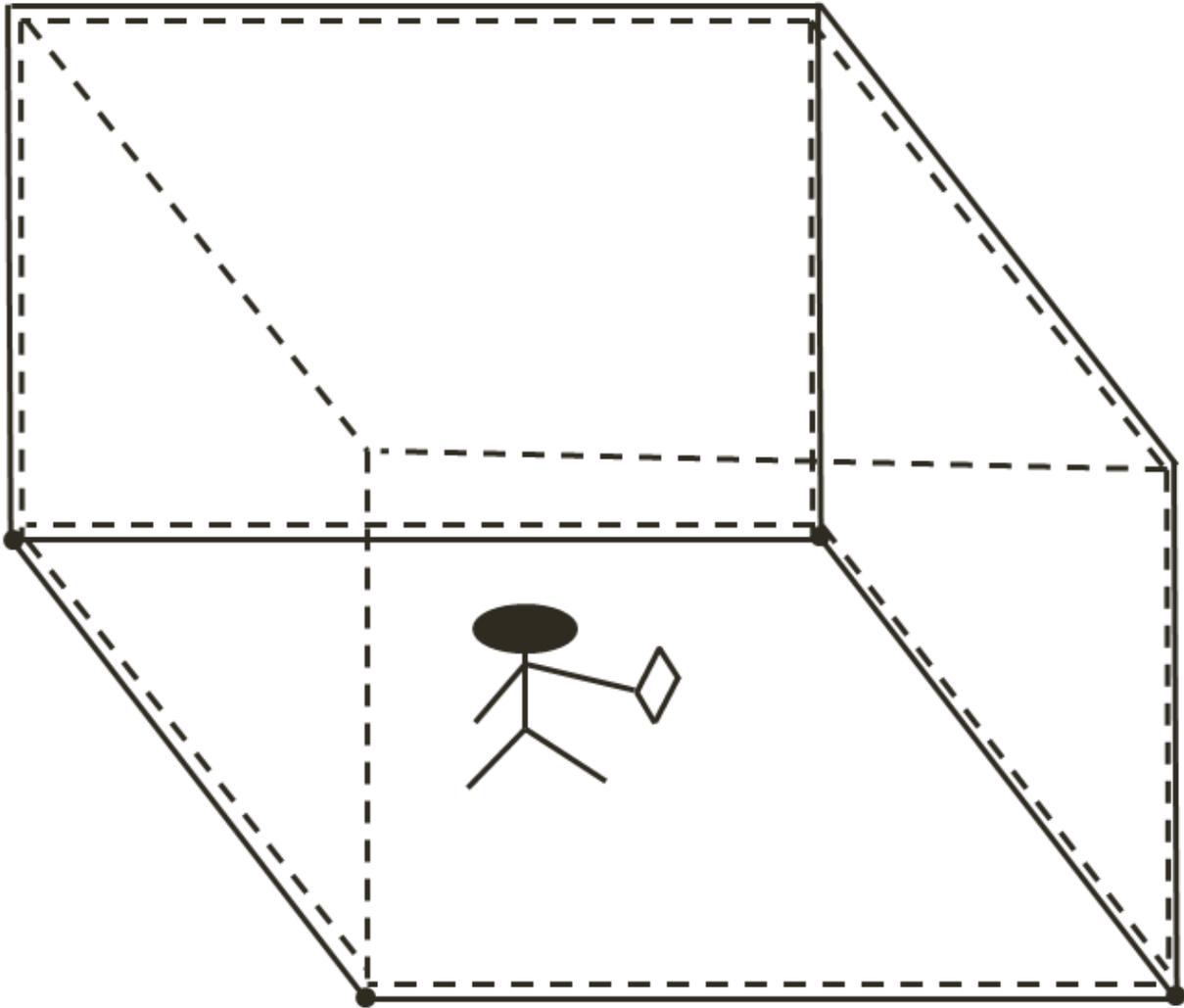
Spatially map the room

1. Re-Launch the Exanaview App. Follow the instructions for scanning the area. Make sure the scanning rectangle covers as much of the floor area of the room as possible. Press “Done” when finished.
2. Press “Author Content” to begin creating AR content.
3. Aim the device crosshair at a ground corner in the room and press “Add Point” under the “Points” group to add points on the ground along the corners of the room in a clockwise or counter-clockwise order similar to the image below.



Note:

- The Exanaview modeler can only process convex geometry, so the points added must form a convex polygon. If the room has a non-convex shape, then add points that form a convex shape that closely matches the non-convex shape of the room. Make sure at least 2 points closely align to an original bottom edge of a wall in the room that will be used to create the bookshelf.
4. Press “Extrude Cut Region” under the “Authoring” group to create the input region geometry for the room. Swipe in a horizontal motion to adjust the height of the geometry. The height should match the height of the room as shown in the image below. Press “Done” when finished.

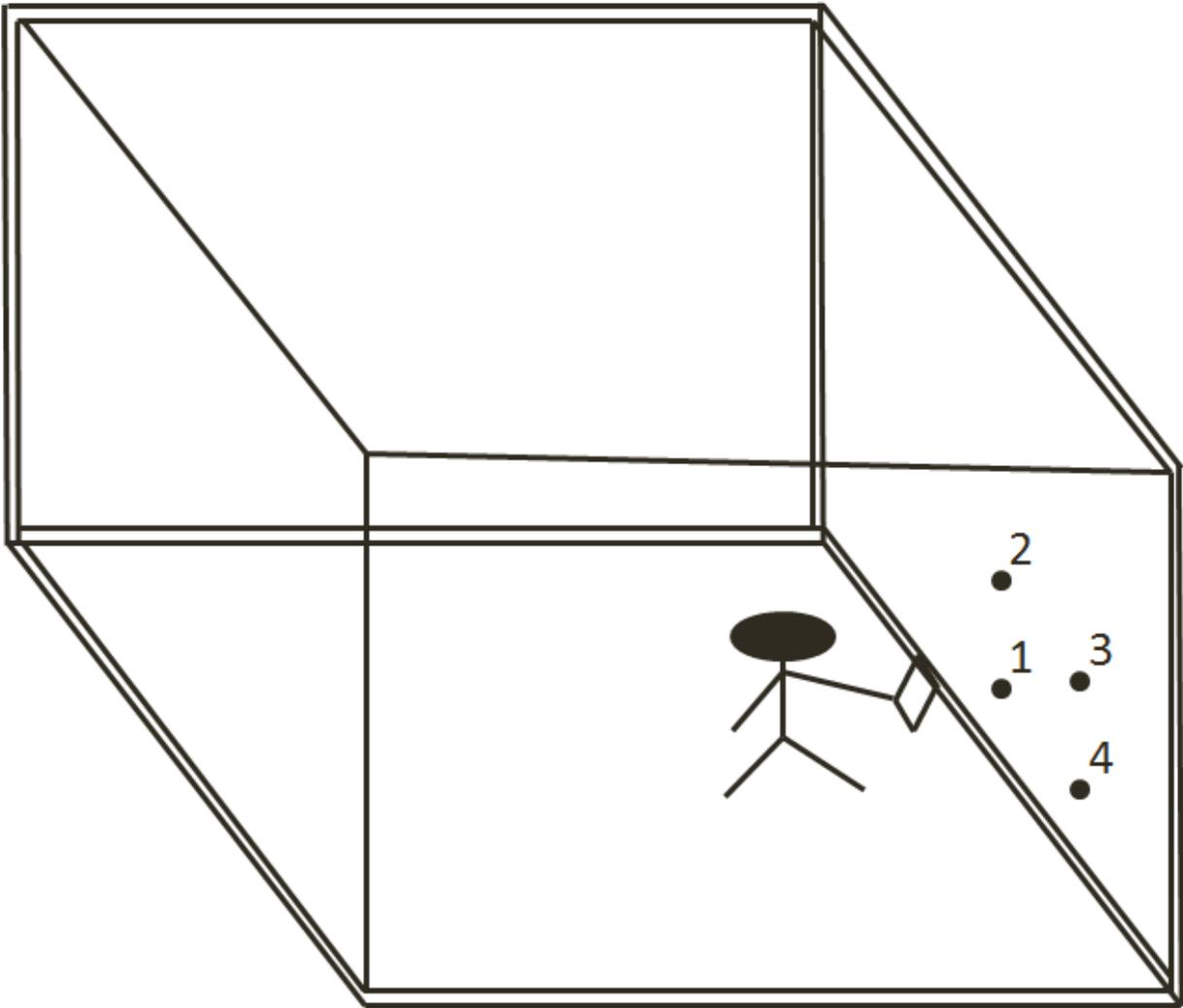


Note:

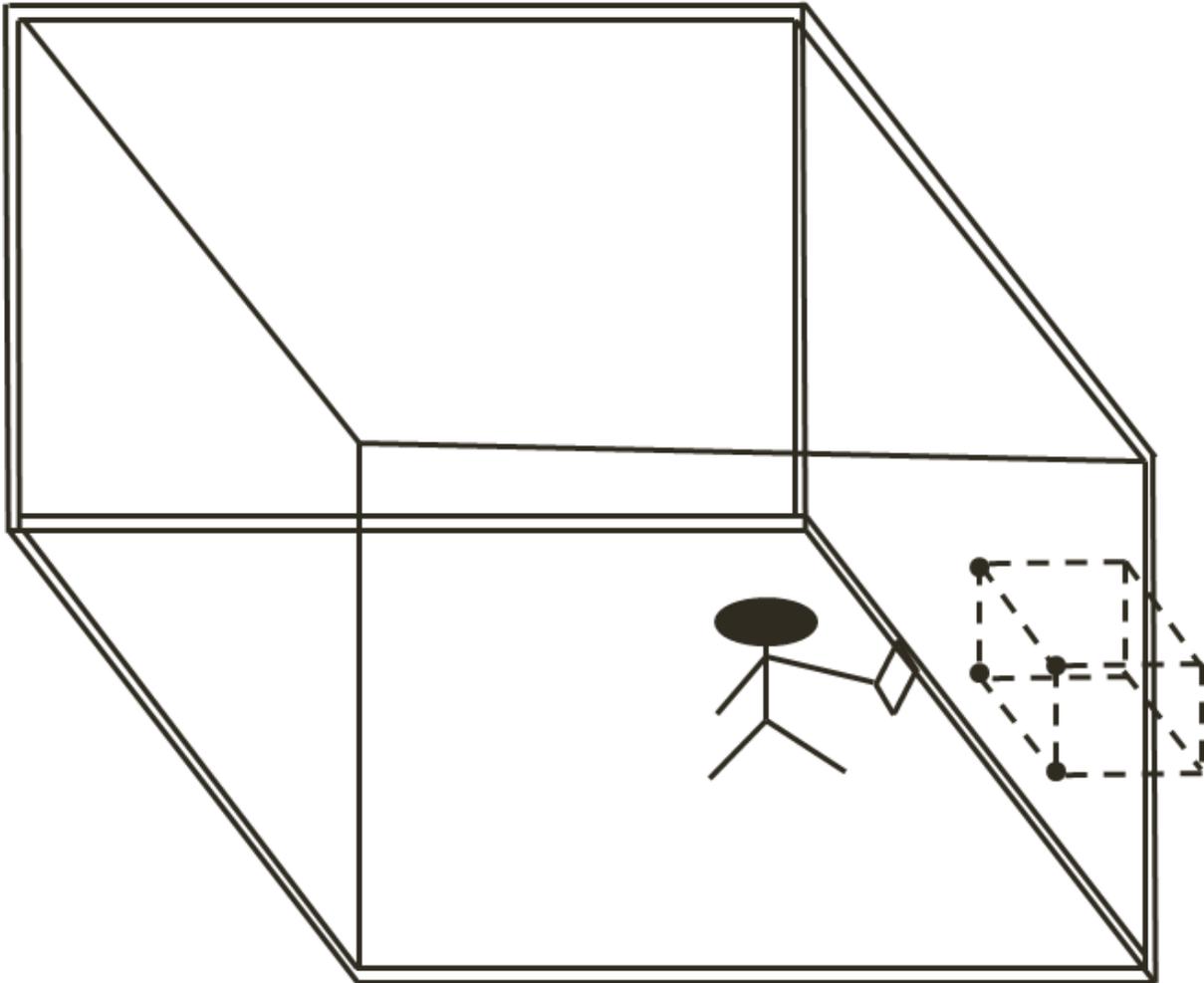
- The input region geometry for the room will be rendered transparent when the input geometry is shown.

Create the in-wall bookshelf

1. Press “Unset Plane” under the “Planes” group. The group name should now say “Planes” instead of “Planes (*)”.
2. Aim the device crosshair at an empty vertical region on a wall around the user’s eye level and press “Add Point” under the “Points” group to add four points in a square or rectangular pattern as shown in the image below.



3. Press “Extrude Cut Prim” under the “Authoring” group to create the in-wall bookshelf. Swipe in a horizontal motion to adjust the depth of the in-wall bookshelf. The depth going into the wall should be at least 1 ft (0.3 m) as shown in the image below. Press “Done” when finished.



4. (Optional) Repeat steps 2 and 3 to create additional in-wall bookshelves above, below, and around the current in-wall bookshelf.

Apply the captured textures

1. Press “Apply Texture...” under the “Texturing” group. The captured textures saved on the device will be displayed as a list of buttons in the upper left corner of the device’s view. Press “Select All” under the “Selection” group.
2. Press the button with the wall texture on it from the list of textures in the upper left corner of the device’s view. The texture will be applied to the selected geometry. Press the “Back” button.

Build and generate the output

1. Press “De-Select All” under the “Selection” group.
2. Press “Build” under the “Authoring” group to process the input region and prim geometry and generate the output geometry.
3. Press “Region Solid” and then press “Prim Solid” under the “Rendering” group. The user will see one or more in-wall bookshelves embedded in the wall of the real world environment.

4. (Optional) To view the content as a mini map, aim the device crosshair at the ground of the spatially mapped room and press the “Mini Map On/Off” button under the “Mini Map” group.

Note:

- The user will not see the region geometry rendered in the output geometry mode. By design the region geometry is rendered with the occlusion material in the output geometry mode to enable Mixed Reality visual effects like the one currently shown with the in-wall bookshelf. To see the region geometry output, enable VR mode by pressing “VR Mode On/Off” under rendering.
- Because the output region geometry is rendered with the occlusion material allowing the real world environment to be seen, creating additive and subtractive input region geometry is often used to spatially map the real world environment.