

Peter Hanula

This application was developed in Unity 5.5.0, and runs on the HTC Vive. You can run the application through Unity by checking “Keyboard Controls” and unchecking “Wand Controls”, or you can run it through the Vive by running the Windows executable. In the application you can navigate around an office space and interact with some objects, like the light switch or fruit.

## SOURCE CODE

<https://uofi.box.com/s/vwqx5toz0r8qd00vr851i4dgaon715g7>

## EXECUTABLE

<https://uofi.box.com/s/kioj4pfljjz2hufsqf1pyzgp89m4tkda>

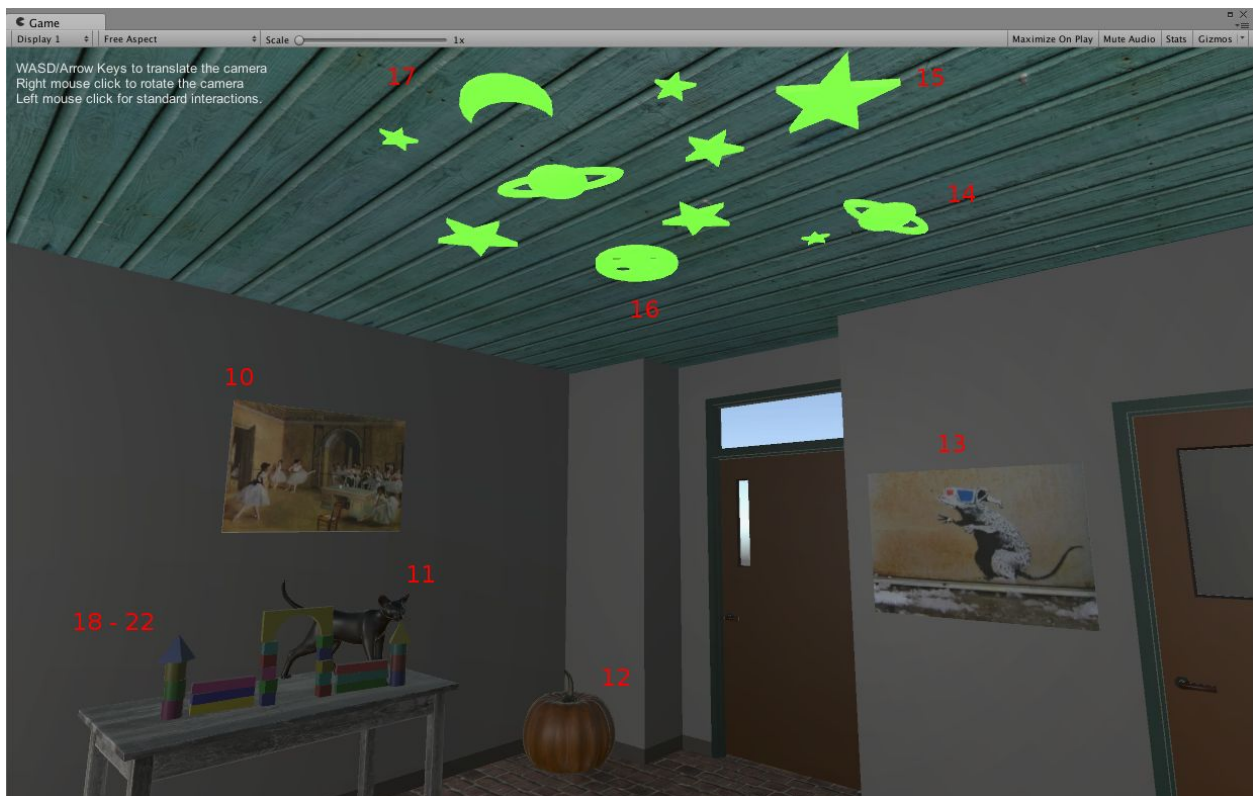
## LIST OF MODELS



1) Mountains -

<https://3dwarehouse.sketchup.com/model/a9d83dec282f08e21fc42d3f6613c7fc/Scale-oil-painting-Mountains-Artist-unknown>

- 2) Fox - <https://3dwarehouse.sketchup.com/model/u48d505bf-dea2-4b92-ae3-25f975ed0585/Fox-with-an-English-Longbow-Oil-Painting>
- 3) Fox Hunting Group - <https://3dwarehouse.sketchup.com/model/u778d2482-c731-4ed7-84fa-8f1143df99e6/English-Fox-Hunting-Oil-Painting>
- 4) Plant - <https://3dwarehouse.sketchup.com/model/d329bd51cde4b5e5f11c3739edd52fa3/Plant>
- 5) Eagle Computer - <https://3dwarehouse.sketchup.com/model/497f2a04-4d5e-42b2-809c-2fd591f99d85/1984-AVL-Eagle-II-CPM-PC>
- 6) Computer - <https://www.turbosquid.com/FullPreview/Index.cfm/ID/513411>
- 7) Chair - <https://www.assetstore.unity3d.com/en/#!/content/90192>
- 8) Cat Sleeping - <https://3dwarehouse.sketchup.com/model/08f9976d-2b68-4da7-afac-4b8c6d170213/CAT>
- 9) Desk Lamp - <https://www.turbosquid.com/FullPreview/Index.cfm/ID/588387>



- 10) Created myself - Banksy Simon
- 11) Black Cat - <https://3dwarehouse.sketchup.com/model/u095b57cd-5e3a-4613-9e7d-65441b356545/Cat-64>
- 12) Pumpkin - <https://www.turbosquid.com/FullPreview/Index.cfm/ID/763410>
- 13) Created myself - Banksy 3D
- 14) Created myself - Planet 1 (glow in the dark)
- 15) Created myself - Star (glow in the dark)
- 16) Created myself - Planet 2 (glow in the dark)
- 17) Created myself - Moon (glow in the dark)

- 18) Created myself - Square blocks
- 19) Created myself - Pyramid blocks
- 20) Created myself - Cylinder blocks
- 21) Created myself - Rectangle blocks
- 22) Created myself - Overhang block

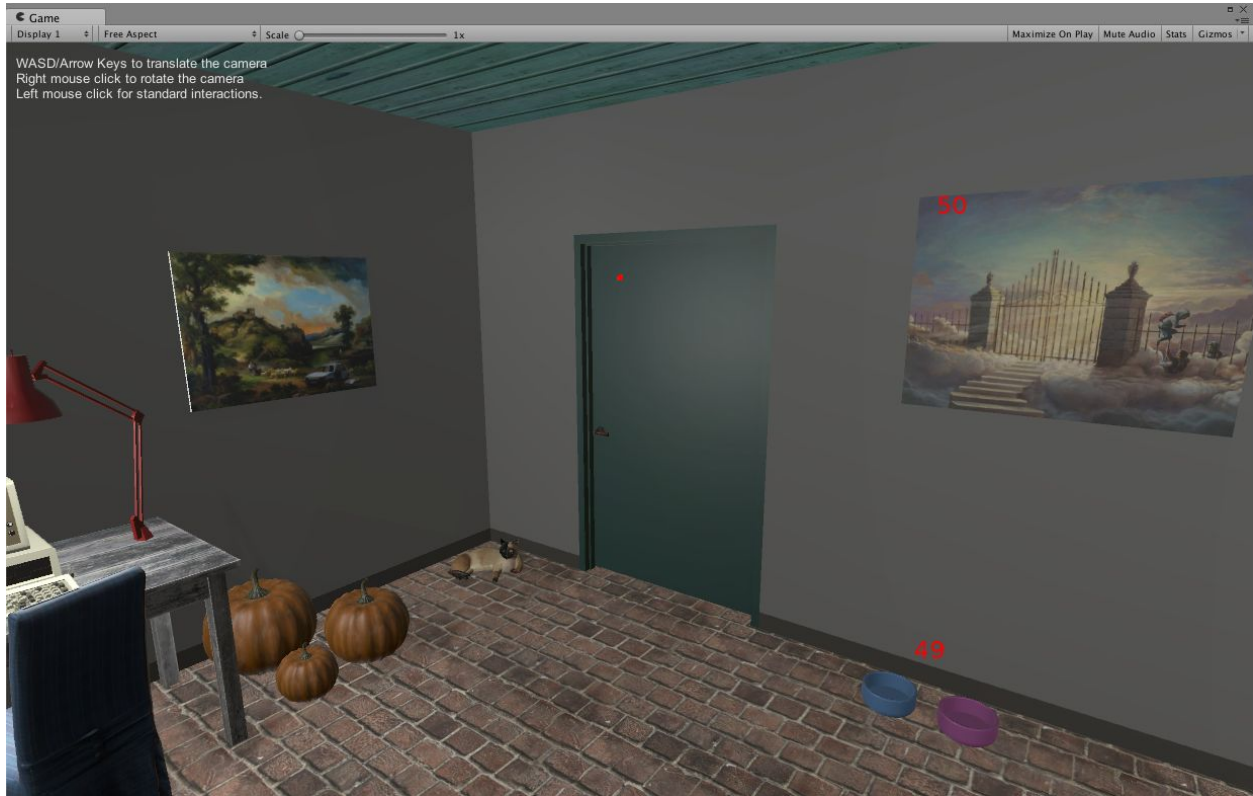


- 23) Cat - <https://3dwarehouse.sketchup.com/model/u6fead63b-1864-4762-97c7-3d6fa79a6af6/Cats>
- 24) Stool - <https://www.turbosquid.com/3d-models/3d-wooden-stool---model/516933>
- 25) Lotus Laptop - <https://3dwarehouse.sketchup.com/model/2a50450a-a0d3-445d-836a-fd8aadb996ef/Valor-Lotus-14-Laptop-Concept>
- 26) HP ProBook - <https://3dwarehouse.sketchup.com/model/32ab7469a9c4bb584ae6254ab33d9f52/laptop-hp-ProBook-4520s>
- 27) Table - <https://www.turbosquid.com/3d-models/3ds-max-worn-wooden-table-desk-old/516990>
- 28) Ceiling Light - <https://www.turbosquid.com/FullPreview/Index.cfm/ID/1159632>
- 29) Laptop - <https://www.turbosquid.com/FullPreview/Index.cfm/ID/575955>
- 30) MacBook Pro - <https://3dwarehouse.sketchup.com/model/u60151d60-f6c8-4750-91cf-2b91b0ebf1f1/Mac-Book-Pro>
- 31) Created myself - Book
- 32) Created myself - Pencil





- 33) Created myself - Banksy Pie
- 34) Created myself - Banksy Incident
- 35) Cats - <https://3dwarehouse.sketchup.com/model/u6fead63b-1864-4762-97c7-3d6fa79a6af6/Cats>
- 36) Created myself - Banksy CCTV
- 37) Created myself - Banksy Toxic Cottage
- 38) Created myself - Banksy Car Wreck
- 39) Snail - <https://3dwarehouse.sketchup.com/model/f880ed496af8165d1587bb9fb56e86bb/Snail>
- 40) Pumpkin Jack - <https://www.turbosquid.com/FullPreview/Index.cfm/ID/861612>
- 41) Watering Can - <https://www.turbosquid.com/FullPreview/Index.cfm/ID/599615>
- 42) Lemon - <https://www.turbosquid.com/FullPreview/Index.cfm/ID/649648>
- 43) Green Apples - <https://www.turbosquid.com/FullPreview/Index.cfm/ID/546276>
- 44) Red Apple - <https://www.turbosquid.com/FullPreview/Index.cfm/ID/889330>
- 45) Pear - <https://www.turbosquid.com/FullPreview/Index.cfm/ID/729927>
- 46) Banana - <https://www.turbosquid.com/FullPreview/Index.cfm/ID/458771>
- 47) IBM Computer - <https://3dwarehouse.sketchup.com/model/f027c7713b3c6d07a9562e3acade4536/IBM-Personal-Computer>
- 48) Cat - <https://3dwarehouse.sketchup.com/model/1f586adcf929a18d6dc42dfb38304f99/gatto-thai-sdraiato>



49) Created myself - Cat Bowls

50) Created myself - Banksy Heaven

Textures: <https://www.assetstore.unity3d.com/en/#!/content/49581>

## SOUNDS

1) Cat Purr - <http://soundbible.com/1002-Purring.html>

2) Cats Talking - <https://www.youtube.com/watch?v=z3U0udLH974>

3) Cat Scream - <http://soundbible.com/1509-Cat-Scream.html>

4) Cat Meow - <http://soundbible.com/1954-Cat-Meow-2.html>

5) Meow Mix Commercial - <http://soundbible.com/1578-Meow-Mix-Commercial.html>

## DISCUSSION

Navigation using teleportation is very useful when you want to travel greater distances. In this case, when I wanted to navigate across the room. Wand-based navigation is very useful when you want to interact with the objects around you. For example, when I was standing over the table with the fruit, I used the wand-based controls to pick up and throw the fruit.

There are both similarities and differences between the virtual and physical worlds. In terms of size, they both feel the same. The stereo depth helps make the virtual world feel more like the physical world. The HTC Vive tracking system also helps bridge the two worlds. My head is in the correct location and I can move around objects. The VR system does a good job at mapping the virtual world over the physical, making it feel quite similar. Unfortunately, the technology side of VR takes us backwards when wanting to experience something “real” in the virtual world. The biggest example is the resolution of the headset; The low resolution doesn’t compare to what our eyes can see in the real world. Another example is processing power. Real objects can get really complex, but in the virtual world you have to worry about polygon counts. Because of this, objects can seem fake or low resolution which doesn’t help the experience.