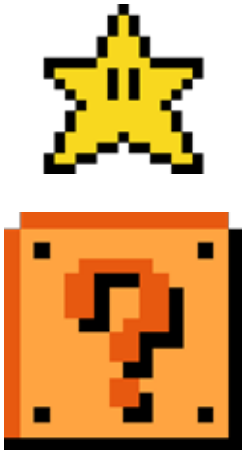

Super Mario Projection Mapping

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Equipment needed:

- Computer (Mac or PC)
- Projector (Make sure to have the appropriate cables. Longer cables would work best)
- Webcam

Programs Needed:

- VPT7: (Compatible with both Windows and Mac) Video projection mapping software. https://hcgilje.wordpress.com/vpt/ *(Under 'Downloads')*
- Video Trigger: (Compatible with both Windows and Mac) Webcam motion detection software that works with VPT7. https://hcgilje.wordpress.com/vpt/extending-vpt/ *(Under 'Camera as trigger')*

Content Needed:

- Question mark block image
- Star animation video (.mov format)
- 3D square

VPT7 Program

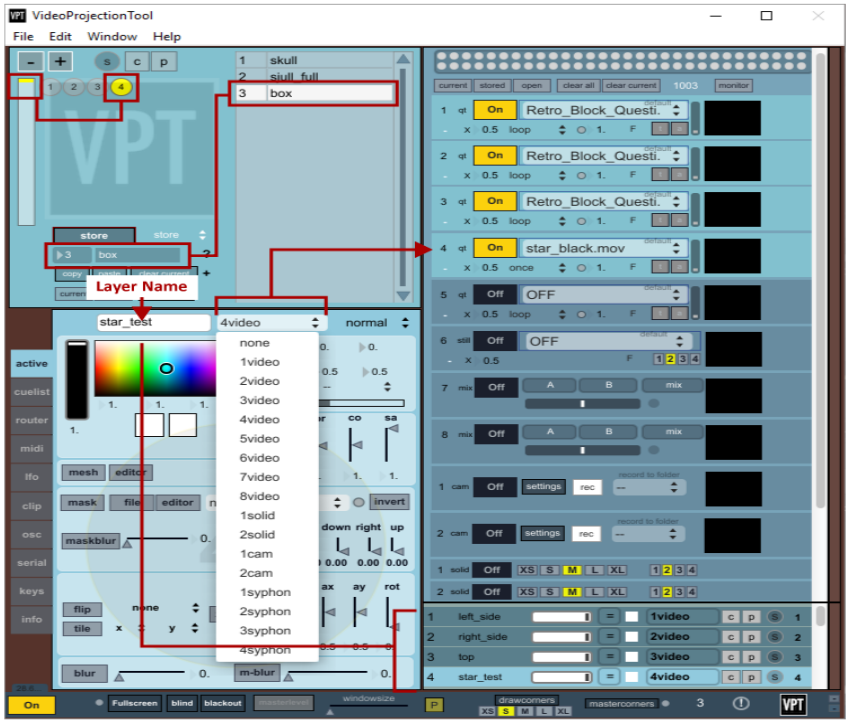
1) Download the 2 programs needed. No installation is required.
2) Bring the image and video over to the proper folder. VPT7 > defaultproject > video folder.
3) Open the VPT7 program.
4) At the bottom menu, make sure draw corners is not selected and to press on the fullscreen button. The fullscreen button will project your output screen in fullscreen mode.

(Figure 1 - Bottom Menu)

5) In the VPT input settings, select the question mark block image from the drop down list. Make sure that the media is ON.
6) Create a new layer by clicking the "plus" button at the top left hand corner of the VPT7 screen. *(See Figure 2).*
    - Name the layer and select the video number that matches the number of the image in the input settings.
7) Position the 3D square into place by skewing the image to match the 3D square.
    - You can skew the image by clicking the "mesh" button located in the bottom left panel or in the preview screen.
8) Project the question mark onto the 3D square.
9) Decide on the projector screen size and the placement of the 3D square. Make sure to have that area consistent so that you do not have to keep switching the projection placement.
10) Create a custom video. In our case we chose to use Adobe After Effects to create our video (.mov format).

- Our recommendation is to have a black solid background because the black background won't be projected. You can avoid casting a shadow on the User when projected.
- You can bring in any image (.png format) and animate it to the desired length.
- The dimension ratio of the animation should match the projector screen. You can roughly set up the dimension by screen capturing the preview window of the VPT program and refer to the image to match the ratio.
- Make sure to export the video in .mov format.

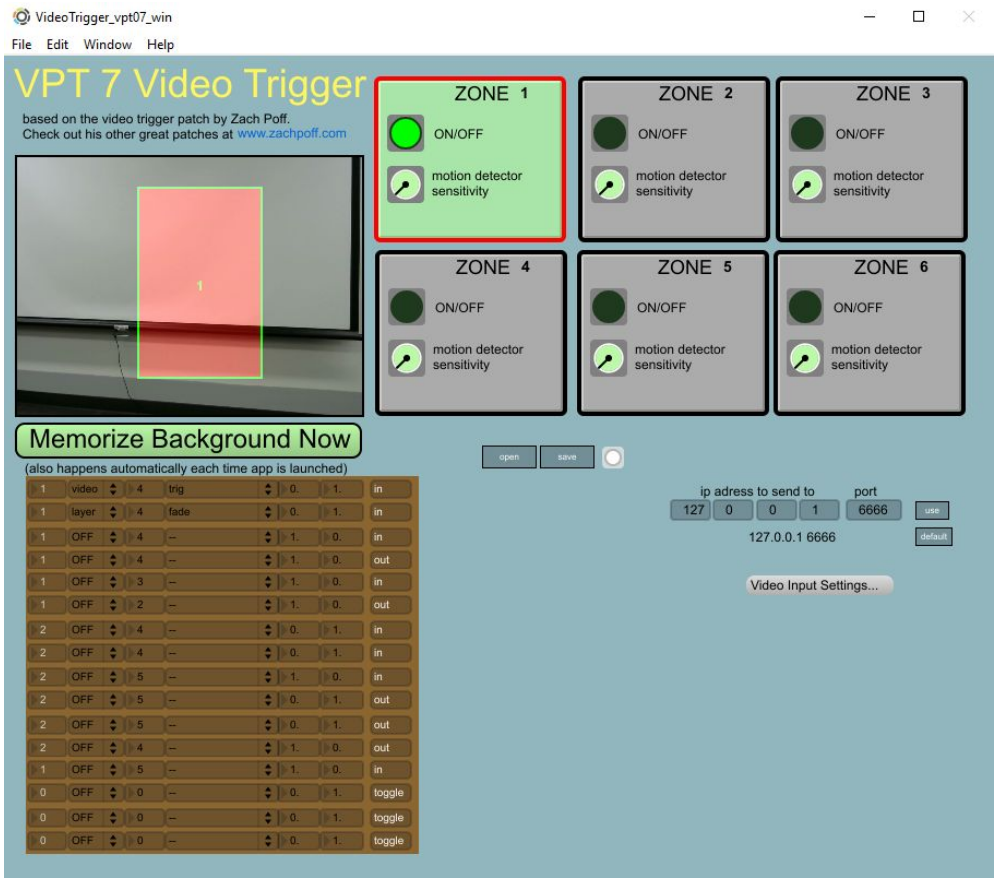
12) Place the custom video in the video folder. VPT7 > default project > video folder.
13) In the VPT input settings, select the animation video from the drop down list, under the question mark block images. Make sure that the media is ON.
14) Under the drop down list where you select the .mov file, remember to turn the "loop" settings to once.
15) Create a new layer by clicking the "plus" button at the top left hand corner of the VPT7 screen.
16) Name the layer and select the video number that matches the number of the video in the input settings.
17) To save your settings in the VPT7 program, click the "store" button located in the top left hand panel of the program. *(See figure 2)*
    - Give the file a name.
    - Select a number to store the settings. Do not use a number that already has something stored on it, otherwise it will erase the previous settings.
    - When you open the VPT7 program your settings will be stored.



(Figure 2 - VPT7 Screen)

VPT7 Video Trigger Plugin

1) Open the VPT7 Video Trigger program.
2) Click the “video input settings” button. Select the webcam that is connected to your computer and the settings are correct.
3) Position the webcam somewhere flat in the zone you want to trigger.
4) Click “memorize background now” button to save the background into memory.
5) Turn on Zone 1 and draw a rectangle on the screen where you would like the User to trigger the video. Make sure the trigger area is highlighted green.
6) Set the triggers using the bottom panel.
    - In the first row select the layer number (1), trigger the video (layer 4), when the User walks into the zone.
    - In the second row select the layer number (1), fade the video (layer 4), when the User exits the zone.
7) When the User enters the zone, the target on the screen will turn red. When the User exits the zone, the target on the screen will turn green.
8) If you are having some trouble getting it to detect the User, adjust the “motion detector sensitivity” to make it more or less sensitive.
9) To save your settings in the Video Trigger plugin, click the save button and the next time you open the program your settings will still be there.



Once you have followed all the steps you will have a working interactive projection. When the User walks under the 3D question mark box, the star animation will pop out of the box.

Special thanks to Tinkernut! Our project was inspired by his tutorial. You can check out this work at: http://www.tinkernut.com/.