ptvr: A Psych-toolbox for Virtual Reality
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MOTIVATION

In comparison to traditional 2D displays, Virtual Reality (VR) offers a fully controllable interactive 3D space.

However, designing VR experiments is difficult due to unintuitive low-level programming interfaces.

Current experiment design tools (such as PsychoPy, Psychtoolbox for Matlab, etc.) do not support VR.

WE PROPOSE ptvr

ptvr is a software tool that offers high-level programming abstractions for the design of VR experiments.

An experiment is described as a collection of scenes, presented one after the other:

**Fixation scene**

```python
fs = ptvr.stimuli.world.FixationScene( text="Get back to the centre and look at the cross."
)
```

**Fixation scene** is used to re-orient participants to the center of the room and look in a particular direction.

**Visual scene**

```python
visual_scene =
ptvr.stimuli.world.VisualScene(display=input.User OptionDisplay())
```

**Visual scene** is an empty world in which objects may be placed. The scene may either be presented for a particular time or until some button press.

```python
cube =
ptvr.stimuli.world.Cube(side=0.2, color=color.RGBColor(r=0, g=1, b=0, a=1))
```

```python
visual_scene.place(cube, cartesian)
```

**Response scene**

```python
rs =
ptvr.stimuli.world.ResponseScene(text="Did you see 7 cubes?\n[1]Yes\n[2]No")
```

**Response scene** is used to pose queries and record answers inside the virtual environment.

CONCLUSION

ptvr is a free and open-source tool that enables design of VR experiments using a high-level Python interface.

To start using ptvr, please visit [https://vr.mpi-sws.org/ptvr/](https://vr.mpi-sws.org/ptvr/).

We'd be happy to hear how you're planning to use ptvr!