

**PsychoPy – инструмент для
создания экспериментов**

- Indentation guides Ctrl+Shift+I
- Whitespace Ctrl+Shift+W
- Show EOLs Ctrl+Shift+L
- Show Output/Shell Ctrl+Shift+O
- Source Assistant
- Go to Builder view Ctrl+L

colors.py x

```

1  #!/usr/bin/env python
2  # -*- coding: utf-8 -*-
3
4  """
5  Demo of
6
7  Note that for this demo to present colors properly in calibrated
8  DKL space (where isoluminant stimuli have elevation=0) you need
9  to calibrate your monitor with a suitable spectrophotometer. If you
10 have a PR60 then you can do this automatically using MonitorCenter.py
11 in the monitors package
12
13 Note for each stimulus that the color refers to the central bar on the grating
14 If there are multiple lobes (a high enough SF) then the other color is simply the
15 complement of the one specified (passing through neutral gray)
16
17 from __future__ import division
18
19 from psycho import visual, event, core
20
21 win = visual.Window(size=(600, 600), monitor='testMonitor')
22
23
24 stims = []
25 #.rgb colors
26 stims.append(visual.GratingStim(win, mask='gauss', color='red', pos=[-0.5, 0.5], sf=2)) #.r
27 stims.append(visual.GratingStim(win, mask='gauss', color=(-1, 1, -1), colorSpace='rgb', pos=[-0.5, 0], sf=2)) #.g
28 stims.append(visual.GratingStim(win, mask='gauss', color=(0, 0, 255), colorSpace='rgb255', pos=[-0.5, -0.5], sf=2)) #.b
29
30 #.DKL cardinal axes (see Derrington, Krauskopf and Lennie 1986)
31 stims.append(visual.GratingStim(win, mask='gauss', color=(90, 0, 1), colorSpace='dkl', pos=[0, 0.5], sf=2)) #.achrom
32 stims.append(visual.GratingStim(win, mask='gauss', color=(0, 0, 1), colorSpace='dkl', pos=[0, 0], sf=2)) #.L-M
33 stims.append(visual.GratingStim(win, mask='gauss', color=(0, 90, 1), colorSpace='dkl', pos=[0, -0.5], sf=2)) #.S

```

Shelf

Output Shell

Welcome to PsychoPy3!
v3.2.4

12:49
25.03.2020

Go to the Builder view



trial ×

A horizontal timeline with tick marks from 0 to 11, labeled 't (sec)'. The area below the timeline is currently empty, representing the trial's duration.

Components

Favorites

-
-
-

Stimuli

Responses

Custom

I/O

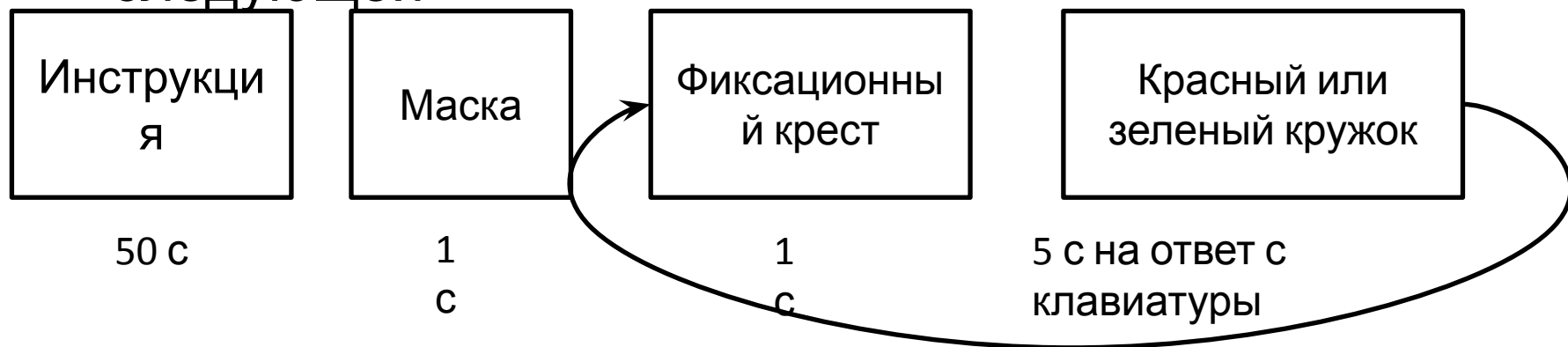
Flow

Insert Routine

Insert Loop

A flow diagram with a red rounded rectangle labeled 'trial' in the center. A horizontal line with arrows at both ends passes through the rectangle, indicating the flow of the trial routine.

- Мы попробуем собрать простой эксперимент, направленный на то, чтоб измерить время и точность реакции испытуемого
- Суть эксперимента будет в том, что испытуемый должен будет нажимать на стрелку «вниз» на клавиатуре, если видит красный кружок и не делать ничего, если видит зеленый
- Соответственно схема эксперимента будет следующей



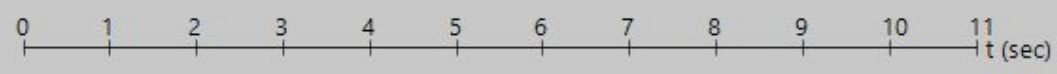
Повторяется несколько

раз

- Маска – это пустой экран, ^{раз}предъявляется для обновления сенсорной памяти.
- Теперь, как реализовать этот эксперимент на PsychoPy?



Instruction × Mask Cross Circle



Components

Favorites

-
-
-
-

Stimuli

Responses

Custom

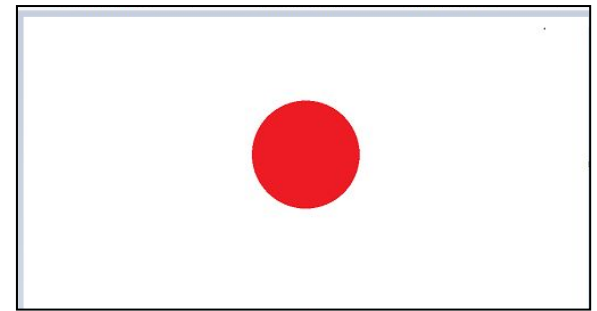
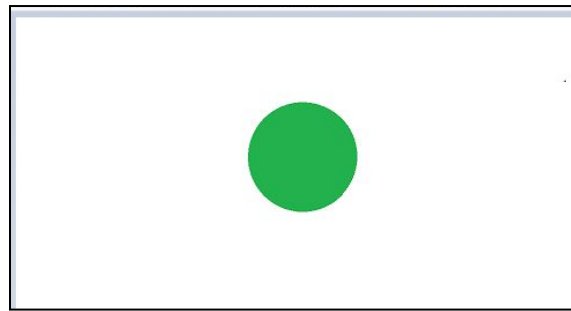
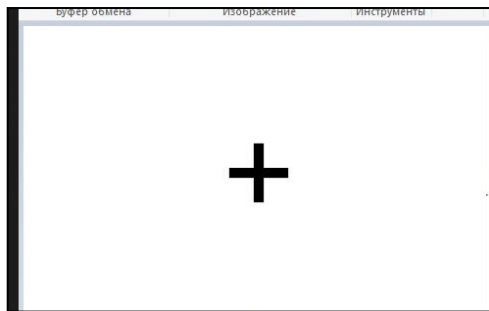
I/O

Flow

- Insert Routine
- (new)
 - Instruction
 - Mask
 - Cross
 - Circle



- Для проведения эксперимента надо создать стимулы и файл, в котором прописаны условия предъявления
- Нам нужны следующие стимулы – инструкция (это будет изображение с текстом инструкции), фиксационный крест, зеленый и красный круг
- Создать стимулы можно, например, в Paint



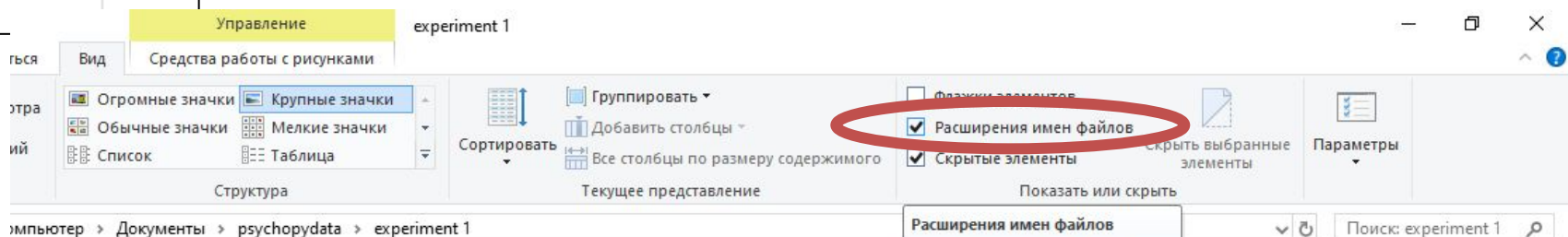
- Задачей испытуемого будет нажимать, когда появится красный круг и не нажимать, если появится зеленый
- В инструкции, соответственно, надо прописать эту задачу так, чтоб испытуемому было понятно

Создаем файл Excel, в котором прописываем какие стимулы будут предъявляться

Первая строка – название столбца. Это будет имя переменной

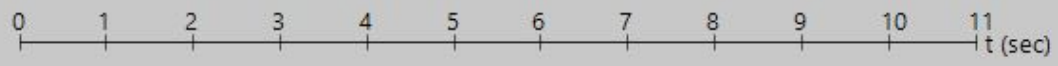
Следующие строки – порядок предъявления стимулов. Наши стимулы – это файлы с изображением. Делаем 14 строк в псевдослучайном порядке (то есть случайном, но расставляете сами). Красных и зеленых кругов должно быть одинаковое количество. Прежде чем копировать имена файлов, включите в свойствах папки свойство «Расширение имён файлов». Имя файла надо вставлять вместе с расширением

	A	B
1	stimul	
2	green_circ.png	
3	red_circ.png	
4	red_circ.png	
5	green_circ.png	
6	red_circ.png	
7	green_circ.png	
8	green_circ.png	
9	green_circ.png	
10	red_circ.png	
11	red_circ.png	
12	green_circ.png	
13	red_circ.png	
14	red_circ.png	
15	green_circ.png	
16		





Instruction X Mask Cross Circle



Components

Favorites

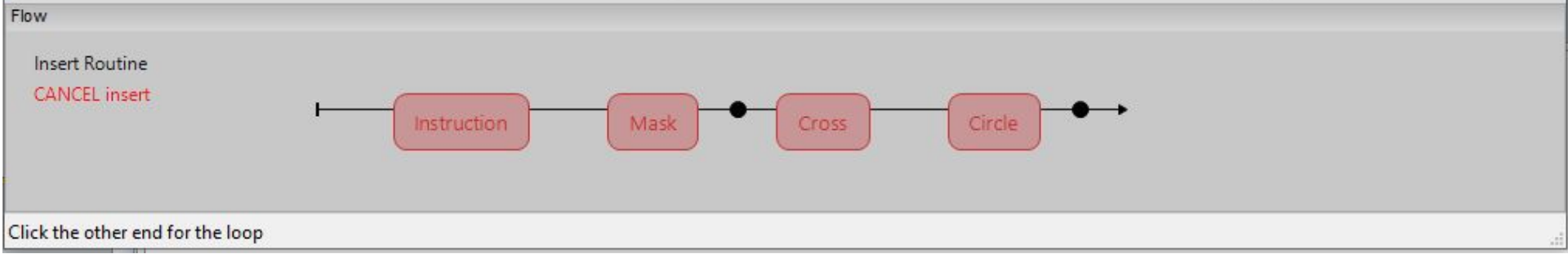
-
-
-

Stimuli

Responses

Custom

I/O





Circle X Cross Instruction Mask

Loop Properties

Name: trials

loopType: sequential

Is trials:

nReps \$: 2

Selected rows:

random seed \$:

Conditions: Browse...

No parameters set

Help OK Cancel

Click the other end for the loop

psychoPy3!
the pygame community. <https://www.pygame.org/contribute.html>

Open file ...

« psycho... » experiment 1

Поиск: experiment 1

Упорядочить Новая папка

- Dropbox
- Документы
- Google Диск
- Изображения
- !ИНСТ
- !DATA
- !СТАТЬИ
- experiment 1
- Dropbox
- .dropbox.cache
- грант с Феррин
- лаборатрия мо:
- лаборатрия мо:
- Нейронауки
- OneDrive
- Этот компьютер
- Music
- Видео
- Документы

~\$stim.xlsx
Лист Microsoft Excel
165 байт

cross.png
FastStone PNG File
3,13 КБ

exp.psyexp
PsychoPy Experiment
12,0 КБ

exp_lastrun.py
Python File
19,0 КБ

green_circ.png
FastStone PNG File
3,38 КБ

instruction.png
FastStone PNG File
7,02 КБ

red_circ.png
FastStone PNG File
3,39 КБ

stim.xlsx
Лист Microsoft Excel
8,76 КБ

Тип элемента: FastStone PNG File
Разрешение: 995 x 514
Размер: 3,39 КБ

Имя файла: stim.xlsx

Все файлы (*.*)

Открыть Отмена



Circle X Cross Instruction Mask

trials Properties

Name: trials

loopType: sequential

Is trials:

nReps \$: 2

Selected rows:

random seed \$:

Conditions: ..\experiment 1\stim.xlsx Browse...

14 conditions, with 1 parameters [stimul]

Help OK Cancel

11 t (sec)

Components

Favorites

- Image
- Text
- Text

Stimuli

Responses

Custom

I/O

Flow

Insert Routine

Insert Loop

trials

untitled.psyexp - PsychoPy Builder

File Edit Tools View Experiment Demos Pavlovia.org Help

Circle Cross **Instruction** Mask

0 1 2 3 4 5 6 7 8 9 10 11 t (sec)

Components

Favorites

- Image: present images (b)

Stimuli

Responses

Custom

I/O

Flow

Insert Routine

Insert Loop

Instruction Mask Cross Circle trials

The image shows the PsychoPy Builder software interface. At the top, there is a title bar and a menu bar with options: File, Edit, Tools, View, Experiment, Demos, Pavlovia.org, and Help. Below the menu bar is a toolbar with various icons for file operations and experiment control. The main workspace is divided into two sections. The upper section is a timeline labeled 't (sec)' with markers from 0 to 11. Below the timeline, there are four tabs: 'Circle', 'Cross', 'Instruction', and 'Mask'. The 'Instruction' tab is currently selected. The lower section is a flow diagram area. It contains a sequence of four red rounded rectangular boxes: 'Instruction', 'Mask', 'Cross', and 'Circle'. A curved arrow loops back from the 'Circle' box to the 'Cross' box, with a small white box labeled 'trials' positioned below the arrow. On the right side of the interface is a 'Components' panel. It has a 'Favorites' section with three icons: a landscape image, a text box, and a red 'T' text icon. Below this is a search bar containing the text 'Image: present images (b)'. Further down are categories: 'Stimuli', 'Responses', 'Custom', and 'I/O', each with a downward-pointing arrow.

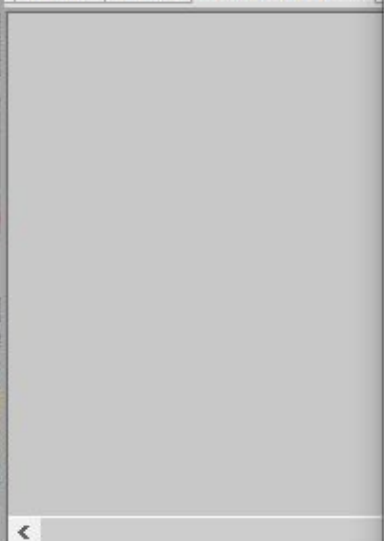


image Properties

Basic | Advanced | Data | Testing

Name:

Start: 0.0
Expected start (s):

Stop: 1.0
Expected duration (s):

Image: constant

Position [x,y]: constant

Size [w,h]: constant

Orientation: constant

Opacity: constant

Units:

Help | **OK** | Cancel

Components

Favorites

-
-
-
-

Stimuli

Responses

Custom

I/O



Circle Cross **Instruction** X

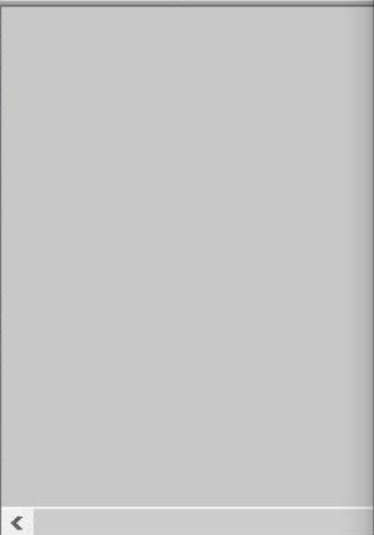


image Properties

Basic | Advanced | Data | Testing

Name:

Start: Expected start (s):

Stop: Expected duration (s):

Image: constant

Position [x,y]: constant

Size [w,h]: constant

Orientation: constant

Opacity: constant

Units:

Help OK Cancel

Components

Favorites

-
-
-
-

Stimuli

Responses

Custom

I/O



Circle Cross **Instruction** X

image

Flow

- Insert Routine
- Insert Loop

key_resp Properties

Basic | Data | Testing

Name:

Start: time (s) Expected start (s)

Stop: duration (s) Expected duration (s)

Force end of Routine

Allowed keys S: constant

Store:

Store correct

Discard previous

Sync timing with screen

Buttons: Help OK Cancel

Components

Favorites

-
-
-
-

Stimuli

Responses

Custom

I/O



Circle Cross Instruction X

image



Flow

Insert Routine
Insert Loop

key_resp Properties

Basic Data Testing

Name:

Start: Expected start (s):

Stop: Expected duration (s):

Force end of Routine

Allowed keys S: constant

Store:

Store correct

Discard previous

Sync timing with screen

Help OK Cancel

Components

Favorites



Stimuli

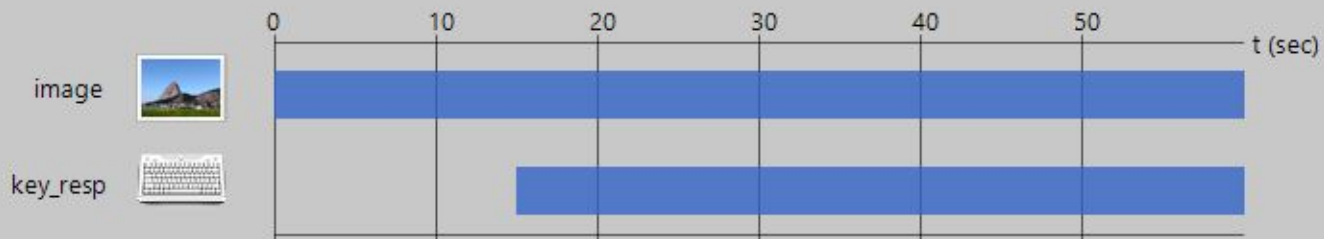
Responses

Custom

I/O



Circle Cross **Instruction** X Mask



Components

Favorites



Stimuli

Responses

Custom

I/O

Flow

Insert Routine

Insert Loop

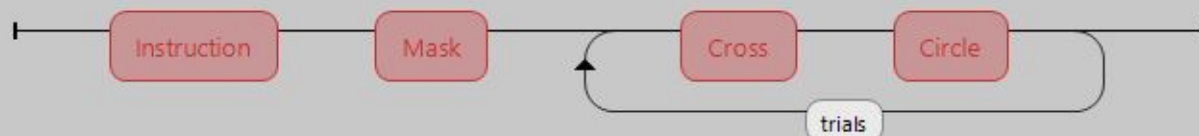




image Properties

Basic | Advanced | Data | Testing

Name:

Start: Expected start (s)

Stop: Expected duration (s)

Image: constant

Position [x,y]: constant

Size [w,h]: constant

Orientation: constant

Opacity: constant

Units:

Help OK Cancel

Components

Favorites



Stimuli

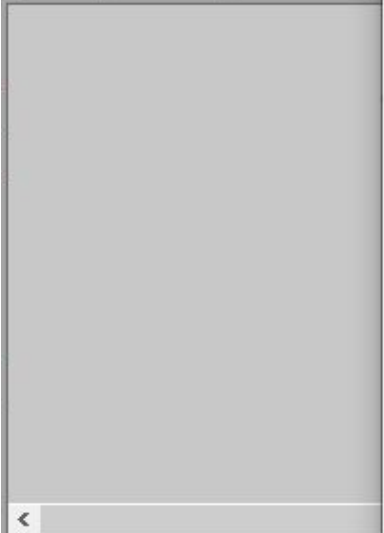
Responses

Custom

I/O



Circle Cross X Instruction



Flow
Insert Routine
Insert Loop

image Properties

Basic | Advanced | Data | Testing

Name:

Start: 0.0
Expected start (s):

Stop: 1.0
Expected duration (s):

Image: constant

Position [x,y]: constant

Size [w,h]: constant

Orientation: constant

Opacity: constant

Units:

Help OK Cancel

Components

Favorites

-
-
-

Stimuli

Responses

Custom

I/O

-



Circle X Cross Instruction

Flow

Insert Routine
Insert Loop

image Properties

Basic | Advanced | Data | Testing

Name:

Start: 0.0
Expected start (s):

Stop: 5
Expected duration (s):

Image:

Position [x,y] \$:

Size [w,h] \$:

Orientation \$:

Opacity \$:

Units:

Help | | Cancel

Components

Favorites

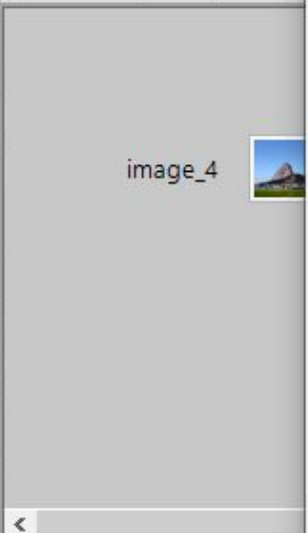


Stimuli

Responses

Custom

I/O



key_resp Properties

Basic | Data | Testing

Name:

Start: Expected start (s):

Stop: Expected duration (s):

Force end of Routine

Allowed keys \$:

Store:

Store correct

Discard previous

Sync timing with screen

Buttons: Help, OK, Cancel

Components

Favorites

-
-
-
-

Stimuli

Responses

Custom

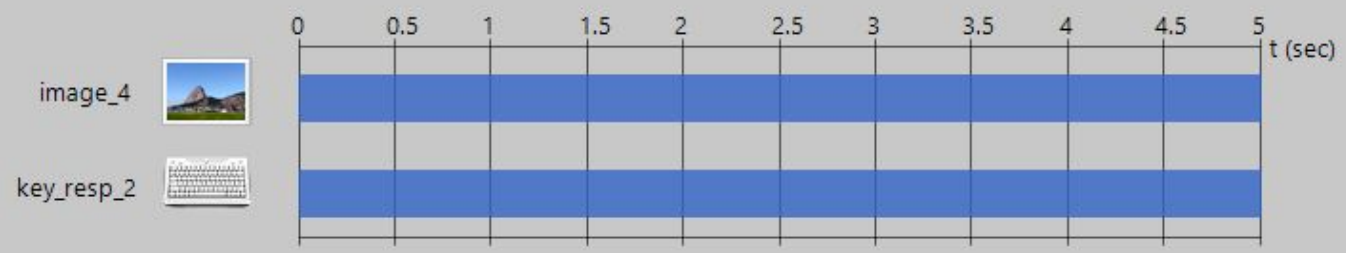
I/O





Circle × Cross Instruction Mask

Run experiment



Components

Favorites

- Image icon
- Text icon
- Text icon

Stimuli

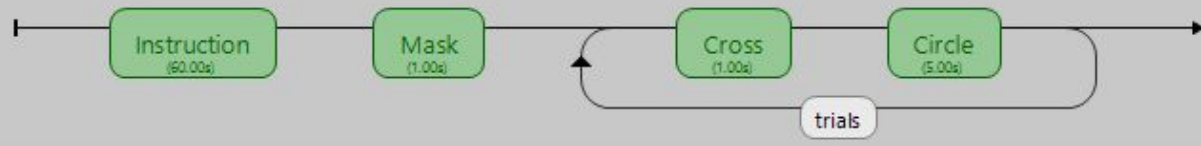
Responses

Custom

I/O

Flow

Insert Routine
Insert Loop



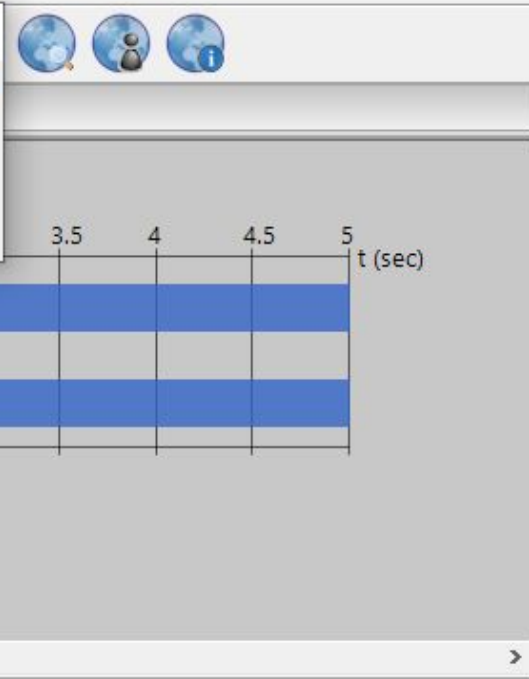
Circle X Cross Instruction

untitled

participant test

session 001

OK Cancel



Components

Favorites

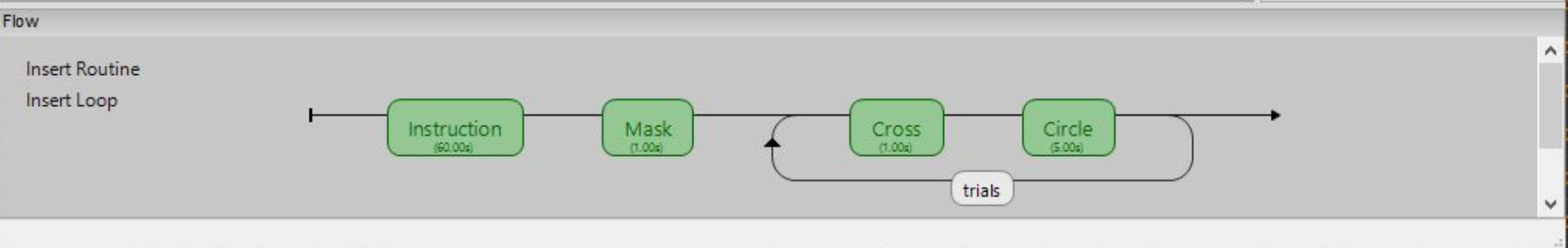
- Image
- Text
- Text
- Sound

Stimuli

Responses

Custom

I/O



Вот как в итоге должен выглядеть эксперимент и как работать

The image shows a PsychoPy Builder interface with a Bandicam recording window overlaid. The Bandicam window displays recording settings for 'Экран 1' (Screen 1) with a resolution of 1366x768. The recording mode is set to 'Full Screen' (Запись экрана - Полный экран). The interface includes a 'REC' button and a 'Старт / Стоп' (Start / Stop) button. Below the recording window, a trial flow diagram is visible, showing a sequence of components: 'Instruction (0.00s)', 'Mask (1.00s)', 'Cross (1.00s)', and 'Circle (5.00s)', all contained within a 'trials' container. The PsychoPy Builder interface also shows a menu bar with 'File', 'Edit', 'Tools', 'View', 'Experiment', 'Demos', 'Pavlov.org', and 'Help'. The bottom left corner of the screen displays the system time '21:54' and the date '30.03.2020'.