OpenSesame

A graphical experiment builder for the social sciences

Binus University Workshop 2022

Sebastiaan Mathôt

https://osdoc.cogsci.nl/binus2022

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A round of introduction

About me

- Sebastiaan Mathôt
- Originally from Amsterdam (Netherlands)
- Lived for a while in Marseille (France)
- Now working in Groningen (Netherlands)

About you

- Menti.com → 20 94 008

Workshop schedule

Workshop schedule

Four days

13:00 - 17:00

April 1 (Today): Introduction

April 20: Online experiments

April 21: Eye tracking

April 27: Data Analysis

All days: working on your own experiment!

Workshop schedule

https://osdoc.cogsci.nl/binus2022

Binus University 2022 workshop

Edit on GitHub

Practical information

- Host: Binus University
- Location: online
- Dates:
  - Day 1: Friday, April 1st, 2022, 08:00-12:00 CEST, 13:00 - 17:00 Jakarta
  - Day 2: Wednesday, April 20th, 2022, 08:00-12:00 CEST, 13:00 - 17:00 Jakarta
  - Day 3: Thursday, April 21st, 2022, 08:00-12:00 CEST, 13:00 - 17:00 Jakarta
  - Day 4: Wednesday, April 27th, 2022, 08:00-12:00 CEST, 13:00 - 17:00 Jakarta
- Presenter: Sebastiaan Mathôt
- Spreadsheet with participant overview

Description

In this four-day, hands-on, online workshop, you will learn how to implement psychological experiments with the open-source software OpenSesame. You will learn:

- How to run experiments online as well as in a traditional laboratory set-up.
- The limitations and advantages of online and laboratory-based experiments.
- How to include eye tracking in laboratory-based experiments. (And a sneak-peak at eye-tracking in online experiments!)
- How to analyze data collected from online and laboratory-based experiments.

Finally, using the skills that you will learn during the workshop, you will design and implement an experiment for your own research, of course with assistance from us! For this purpose, please already think about what kind of experiment you'd like to create, and

About OpenSesame

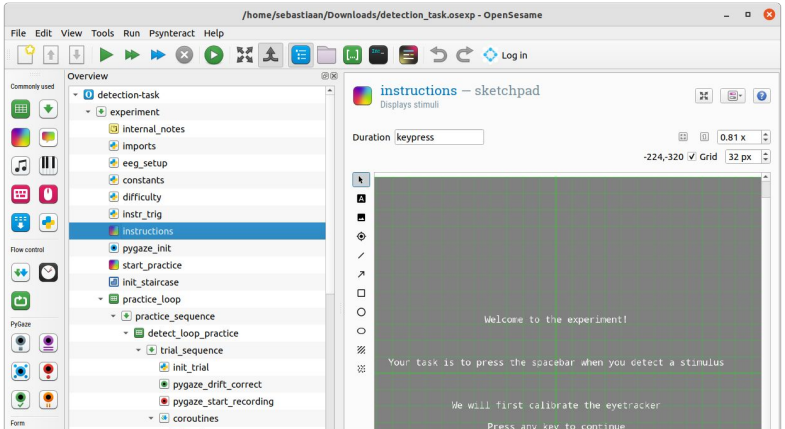
About OpenSesame

A graphical experiment builder

Drag-and-drop, point-and-click

Complement with scripting

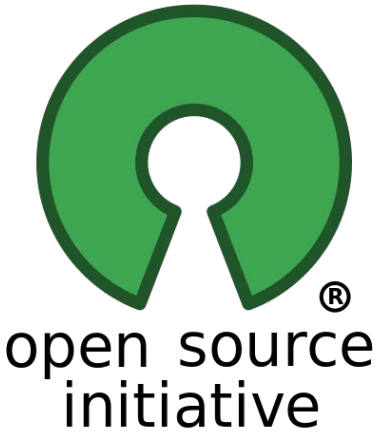
- Python for lab experiments
- JavaScript for online experiments



About OpenSesame

Open source

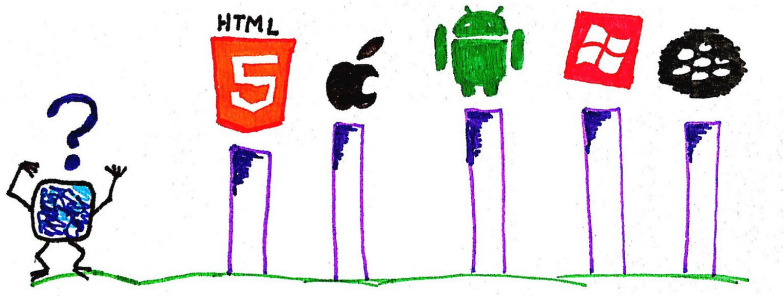
Free of charge



About OpenSesame

Cross-platform

- Windows
- Mac OS
- Linux
- Browser (runtime only)



About OpenSesame

Fits many types of research

- Psychophysics
- Neurophysiology
- Neuroimaging
- Social psychology
- Clinical applications
- Eye tracking
- Pupillometry

Support

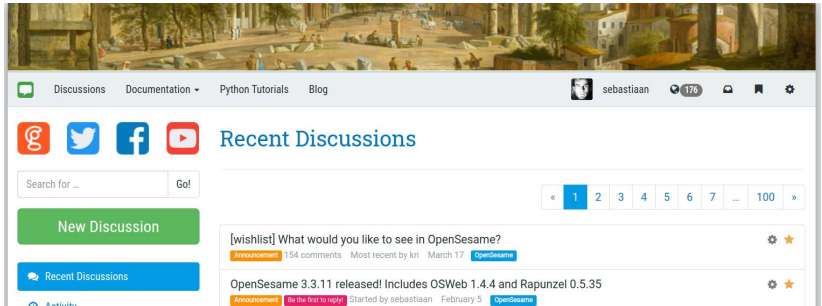
Support

Documentation

- https://osdoc.cogsci.nl/

Community forum

- https://forum.cogsci.nl/
- Shared with JASP, PyGaze, JATOS, and other free software
- 9,000+ members, daily activity



Using OpenSesame

Items

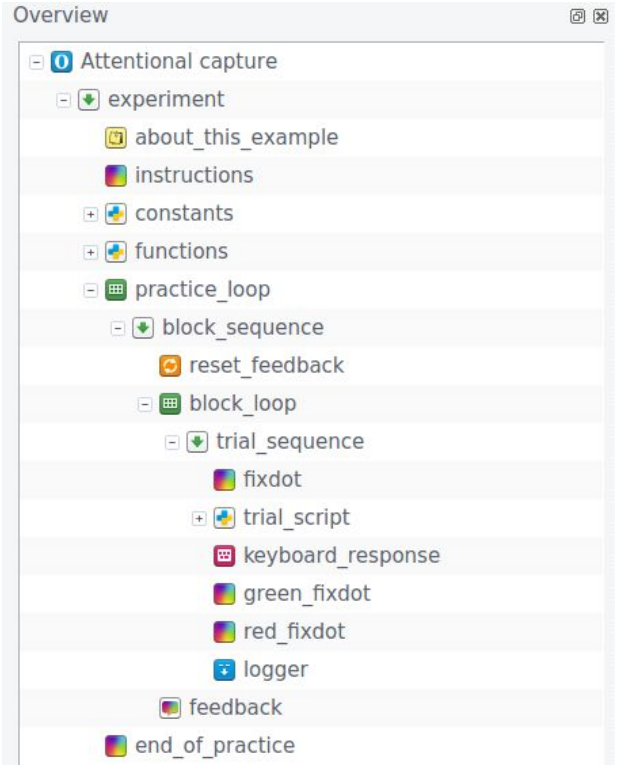
An experiment is a collection of items

Items are building blocks

One item does one thing

- `sketchpad` → visual stimuli
- `keyboard_response` → records key presses
- `logger` → logs data
- `loop` → repeats another item while varying independent variables
- `sequence` → runs a number of other items sequentially
- etc.

Items

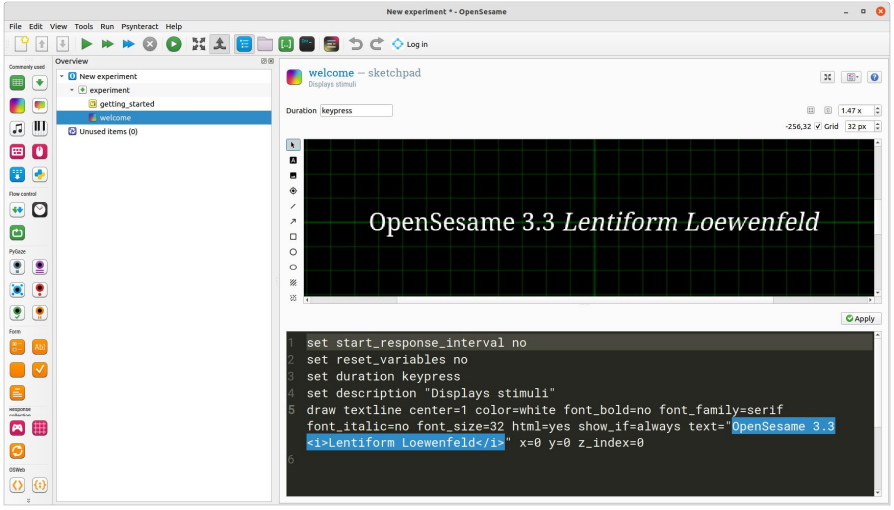

Overview
Attentional capture
experiment
about_this_example
instructions
constants
functions
practice_loop
block_sequence
reset_feedback
block_loop
trial_sequence
fixdot
trial_script
keyboard_response
green_fixdot
red_fixdot
logger
feedback
end_of_practice

Items

Items have a graphical interface and a script

- A simple language (“OpenSesame script”)
- Not Python!

Switch between graphical interface and script



Variables

Variables can be defined

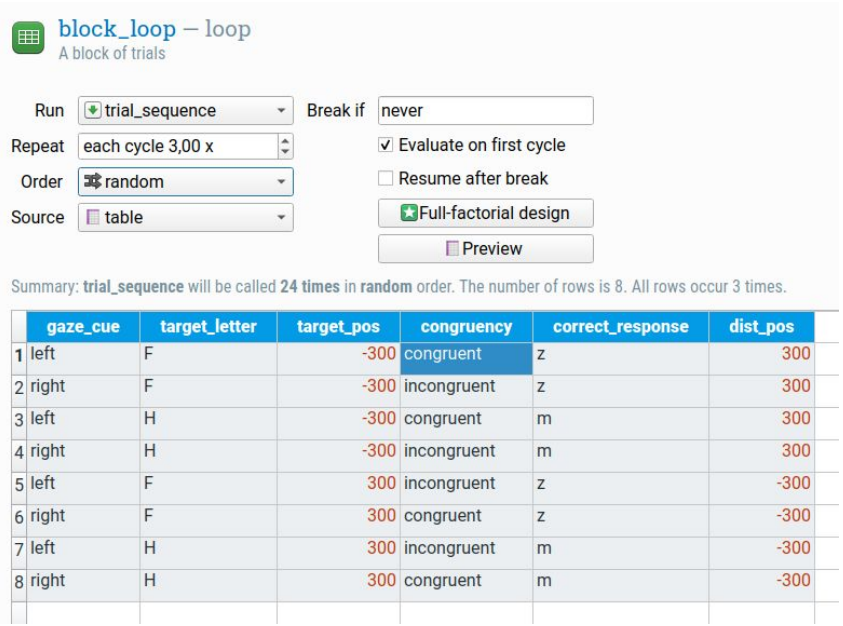
- In a `loop` item (independent variables)
- In a `keyboard_response` (response time, accuracy, etc.)

You can refer to these later

- For example in a `sketchpad` item
- Using `[variable_name]` notation

This adds considerable flexibility

Variables



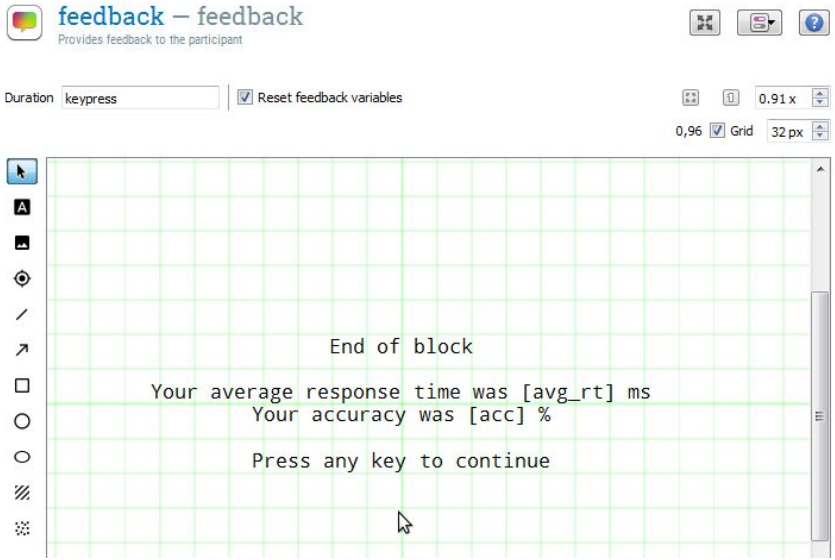
block_loop — loop
A block of trials

Run: trial_sequence | Break if: never
Repeat: each cycle 3,00 x | Evaluate on first cycle
Order: random | Resume after break
Source: table | Full-factorial design | Preview

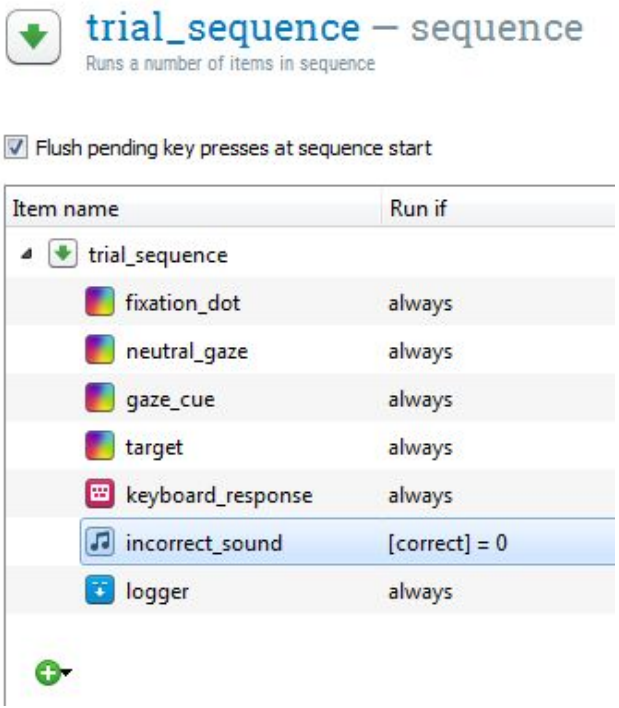
Summary: **trial_sequence** will be called **24 times** in **random** order. The number of rows is 8. All rows occur 3 times.

	gaze_cue	target_letter	target_pos	congruency	correct_response	dist_pos
1	left	F	-300	congruent	z	300
2	right	F	-300	incongruent	z	300
3	left	H	-300	congruent	m	300
4	right	H	-300	incongruent	m	300
5	left	F	300	incongruent	z	-300
6	right	F	300	congruent	z	-300
7	left	H	300	incongruent	m	-300
8	right	H	300	congruent	m	-300

Variables


feedback — feedback
Provides feedback to the participant
Duration
keypress
Reset feedback variables
0.91 x
0,96
Grid
32 px
End of block
Your average response time was [avg_rt] ms
Your accuracy was [acc] %
Press any key to continue

Variables


trial_sequence — sequence
Runs a number of items in sequence
Flush pending key presses at sequence start
Item name
Run if
trial_sequence
fixation_dot
always
neutral_gaze
always
gaze_cue
always
target
always
keyboard_response
always
incorrect_sound
[correct] = 0
logger
always

Let’s get to work!