Elisas Strange Case - Processing sketch

By f.Lüscher / fluescher.ch 2023 for Next Level Escape AG.

"AS IS" pi pa po etc.

Run this with processing.org or standalone when compiled on mac/win/linux/raspberry pi.

This was intended to run on raspberry pi 3, but may run on raspberry pi 4?

When not on Raspberry Pi with GPIO pins and 4 connected rotary encoders,
set `GPIO_AVAILABLE` to `false` and `DEBUG` to `true`.

Press number keys `0`-`6` or left/right `arrow keys` to change stages manually.
Press `ESC` or `right mouse button` to go to desktop.

STAGES

Stage#	Content	Interaction	At end of stage..
0	Blackout.	Nothing works.	..waits for UDP signal
1	Message "AWAITING INPUT".	Flick the switch!	..waits for UDP signal
2	Startup sequence of computer.	Wait.	..**auto-jumps** to stage **3**
3	Elisas curves, without connected brainalizer on players head	Nothing works. Awaiting User to plug in Headset.	..waits for UDP signal
4	Elisas curves, with connected brainalizer.	Adjust with dials to sync brainwaves.	..**auto-jumps** to next stage when synched
5	Message "SUCCESS"	Wait.	..waits for UDP signal
6	Elisas thoughts as sequence in DE & EN	Wait.	..waits for UDP signal

UDP

Sending UDP Messages @ `53544`:

data	info
`sync_ready`	initially "loaded" stage `3`+`4` (only on startup)
`sync_boot`	is sent when user sflicks the switch on the computer
`sync_success`	both curves where properly aligned by the player
`sync_end_of_thoughts`	is sent after the last thought of elisa on stage `6`

data	info
`sync_died`	program closed or died

Listens to UDP Messages @ port `53545`:

data	info
`sync_stage0`, `sync_stage1` etc	Jump to a specific stage (`0`...`6`).
`sync_skipLoading`	can be used to skip the initial loading process if it takes forever. (Stage `3`+`4` will stay slow)
`sync_shutdown`	Gracefully shuts down the raspberry pi. Wait a minute to pull the power though.

IP & USER

The IP address is (maybe?) fixed to ~~`192.168.178.97`~~ `192.168.86.68`.

- username raspberry pi: `esc`
- password raspberry pi: `synchron`

EXIT / RESTART APPLICATION

Press `ESC` or `right mouse button` to exit the program and see the desktop.
Double click the file `play.sh` on the desktop to restart application.
To see the whole screen on one monitor, press the "SPLITTER" button on the "video wall hdmi" remote inside the computer case.
To reset the screens, press the "2x2" button on the remote.

UPDATE

If adjustments to the scripts are needed, call f.luescher 0787424834 or info@fluescher.ch.

After changes are made, double click the file `update_and_play.sh` on the desktop to pull latest changes made - be sure to deliver an internet connection (*disconnect Ethernet cable from back and make a wifi connection*). During loading, you'll see a new version number.

LUCKY NUMBERS

Knob	Target	from	to	Error margin
Amplitude	+**345**	327	363	±18
Frequency	+**307**	289	325	±18
Scale	+**12**	2	22	±10
De-noise	+**424**	374	474	±50

NERD STUFF

deployment

1. ***move*** *the file* `libprocessing-io.so` *from* `/linux-arm/lib` *out of the ways before deployment*
2. Delete folder `/linux-arm/lib` because sometimes Processing does not deploy the newest version
3. Build with processing 4 on mac (Processing 4 -> File -> export application -> Export). forget java. Build empties the folder `/linux-arm` first.
4. ***move*** *the file* `libprocessing-io.so` *to* `/linux-arm/lib` *again*. It is also available in the `_tools` folder.
5. git add, git push on mac
6. git pull on raspi

logging of boot:

```
tail -f /home/esc/.cache/lxsession/LXDE-pi/run.log
```

start elisas_synchronotron:

```
sudo /home/esc/Applications/sketchbook/elisas_synchronotron/linux-
arm/elisas_synchronotron
```

change startup things:

```
nano /home/esc/.config/lxsession/LXDE-pi/autostart
```

If java is not found or java says "this application was build with a newer version of java":

EITHER: Update / install newest java

```
sudo apt install openjdk-17-jdk -y
```

OR: Use & make symlink to java that is used by processing editor (not needed if openjdk 17 is installed):

```
`sudo ln -s /home/esc/Applications/processing-4.1.2/java/bin/java
/usr/bin`
```

If error is "no processing-io in java.library.path":

Use & make symlink to missing native io library (if)

```
`ln -s ~/Applications/processing-
4.1.2/modes/java/libraries/io/library/linux-armv6hf/libprocessing-io.so
lib/`
```

or
*__copy__ the file `libprocessing-io.so` from `_tools/` folder to `linux-arm/lib` **and** `linux-aarch64/lib`.

SETUP A NEW ELISAS SYNCHRONOTRON RASPI

Clone image from backup

- Use balenaEtcher to clone `24-04-23 Raspi3mitElisasSynchronisator.img.zip` from archive HDD for raspi 3.
- Use balenaEtcher to clone `24-04-23 Raspi4mitElisasSynchronisator.img.zip` from archive HDD for raspi 4.

For a fresh install

1. Install raspian on an SD card

Use Raspberry pi Imager to flash an >=16GB micro SD card.

Set device, set Operating system (for raspi 4, choose Raspberry pi OS (64-BIT)), set target storage device, click "write".

2. Boot raspi first time

user: esc
pw: synchron

disable screen blanking and stuff like that?

Other stuff for screen resolution etc?

2. Get repository

Get the repo, it's public so don't worry about nothing.

```
cd /home/esc/Applications/
mkdir sketchbook && cd sketchbook
git clone git@github.com:falue/elisas_synchronotron.git
```

Confuigure autostart

Create (or edit) `nano /home/esc/.config/lxsession/LXDE-pi/autostart`.

For arm (raspi 3) write in it:

```
#sh /home/esc/Applications/deploy/startup.sh
@lxpanel --profile LXDE-pi
@pcmanfm --desktop --profile LXDE-pi
sudo bash
/home/esc/Applications/sketchbook/elisas_synchronotron/scripts/play_grac
eful_shutdown_arm.sh
```

For aarch64 (raspi 4) write in it:

```
#sh /home/esc/Applications/deploy/startup.sh
@lxpanel --profile LXDE-pi
@pcmanfm --desktop --profile LXDE-pi
sudo bash
/home/esc/Applications/sketchbook/elisas_synchronotron/scripts/play_grac
eful_shutdown_aarch64.sh
```

Enjoy!