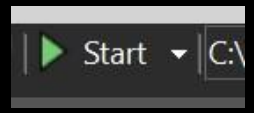
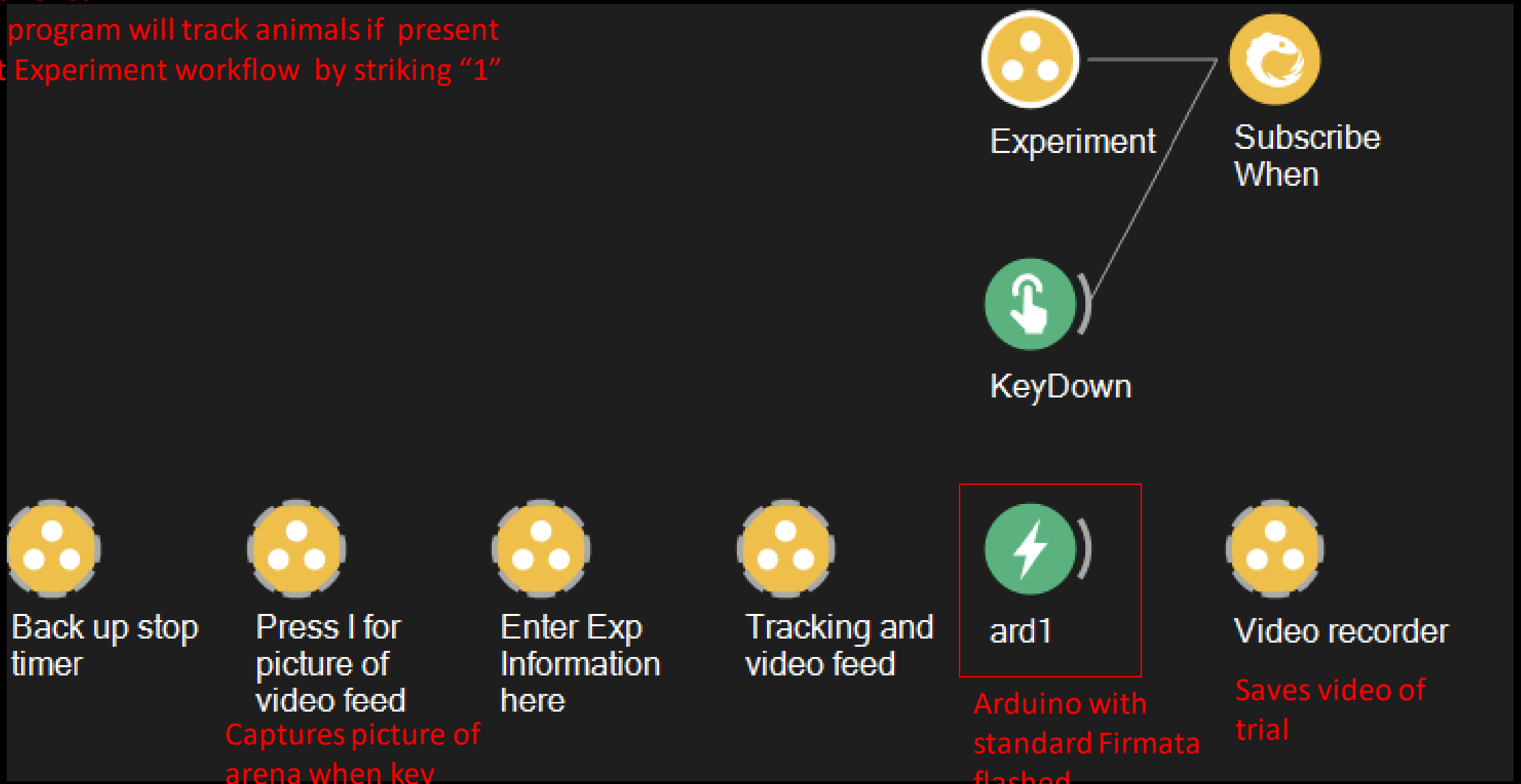
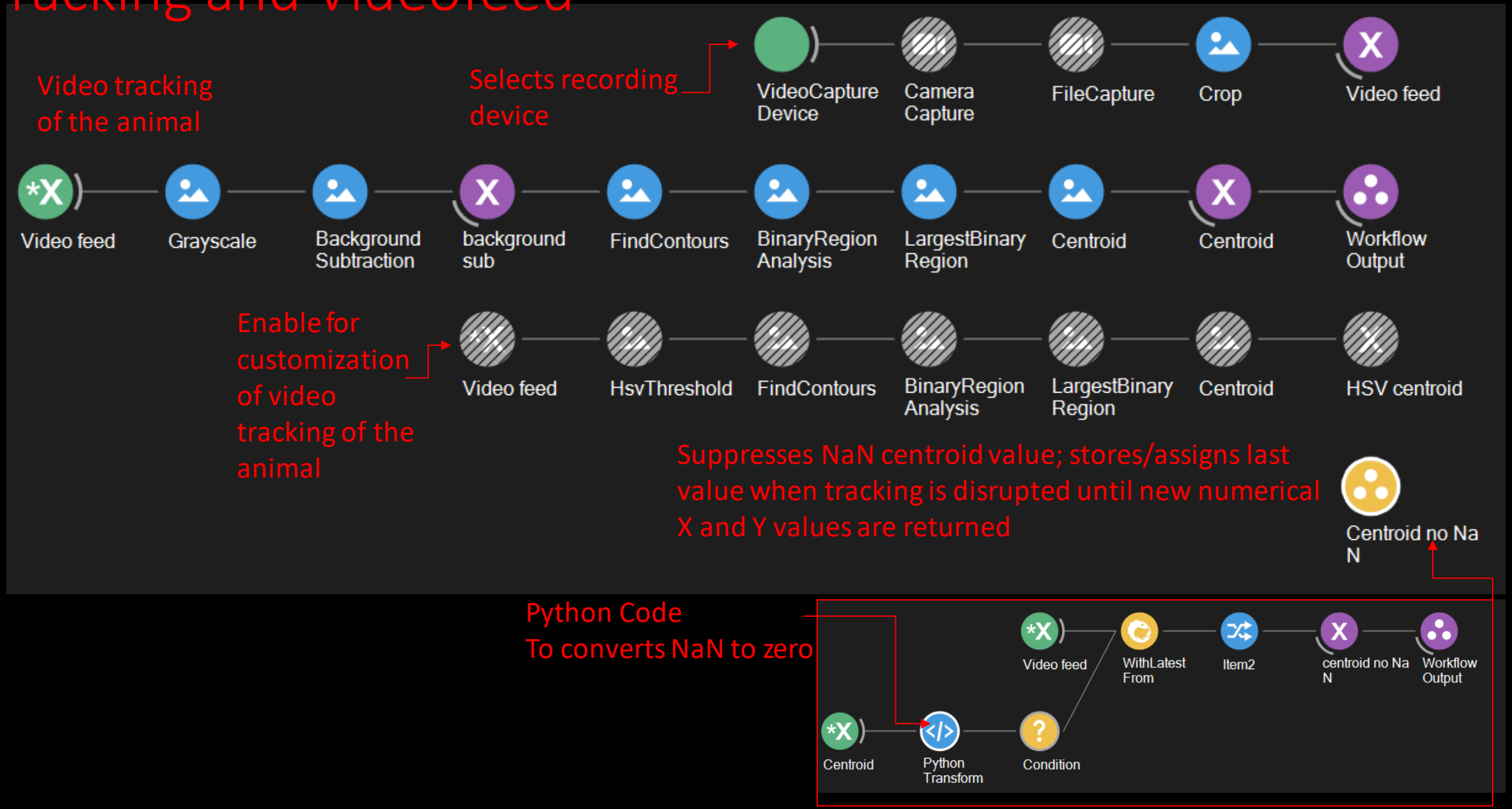
# Workflow

1. Start Bonsai
2. The program will track animals if present
3. Start Experiment workflow by striking “1”

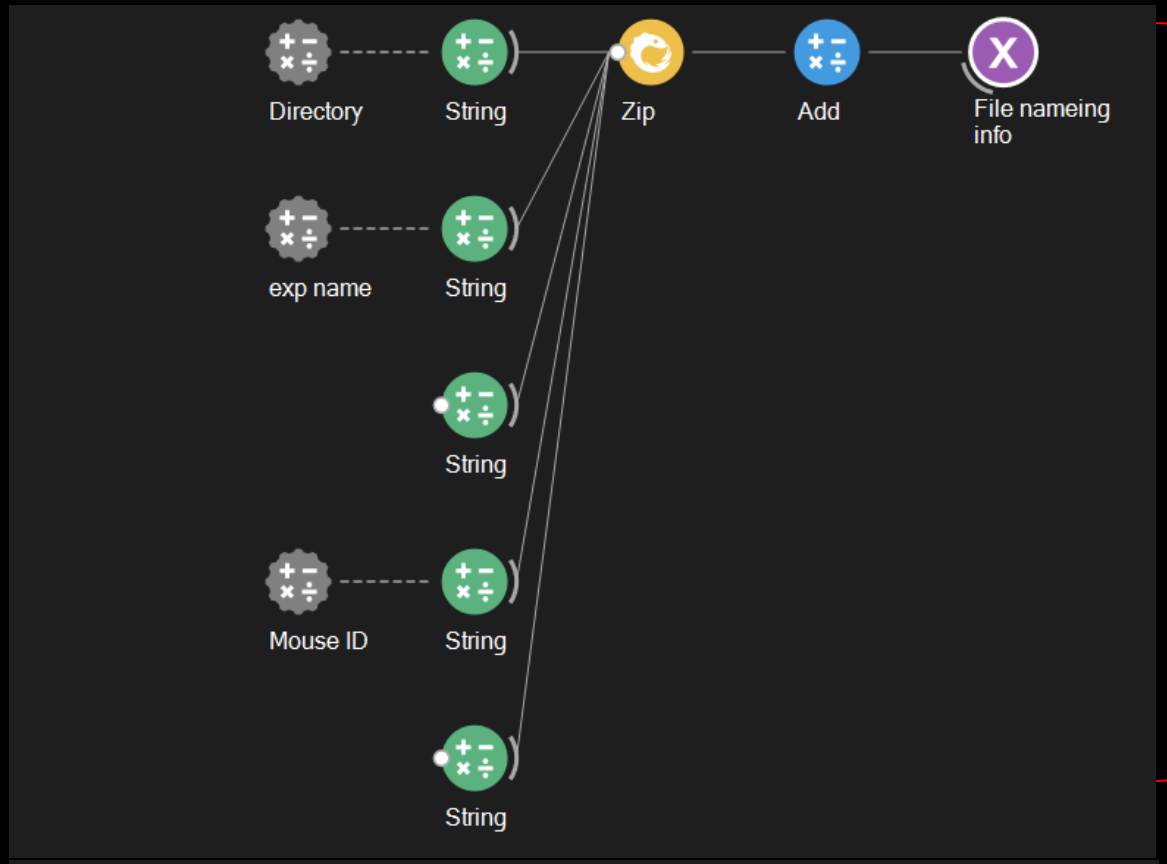


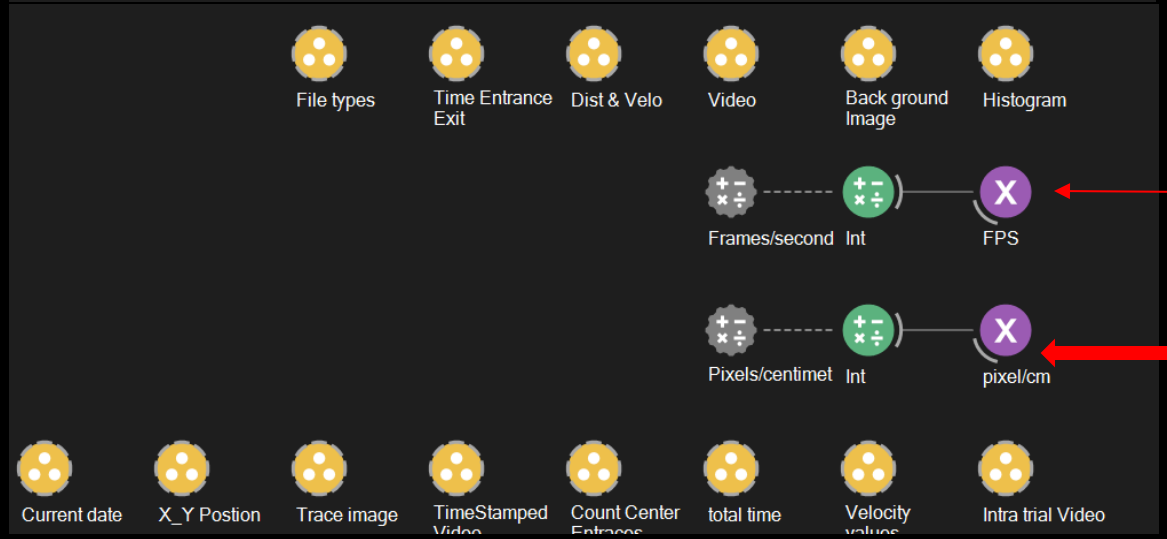
# Tracking and Videofeed



# Experiment Naming




Base file naming to be assigned to all files




Allows user to change FPS of video analysis (important to match video for velocity calculations)

Enter pixels/centimeter here

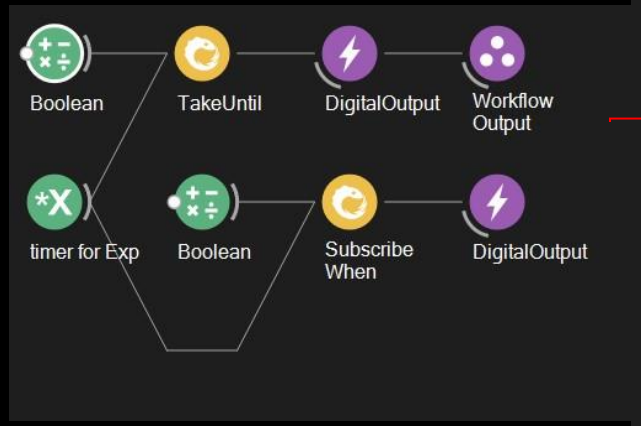
Arena Videofeed Pixel Width/ Real Arena Distance Width (cm)

(in this case *360/ 50.8 = 7

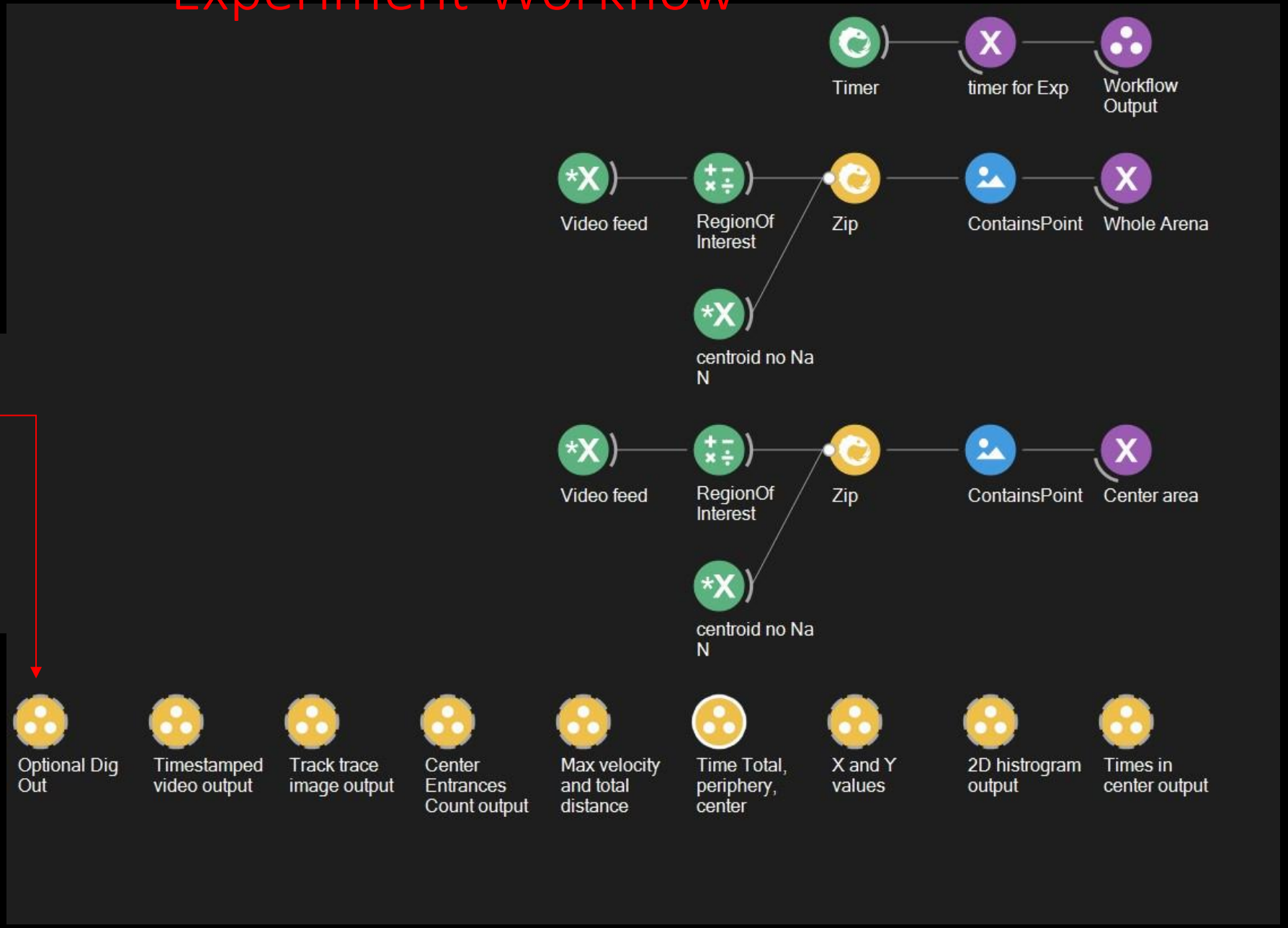
*Specific to your video

# Experiment Workflow

Example - Cyclops LED Driver is being used and reads pin 13 HIGH on the Arduino output and writes HIGH for stimulation pulse train (In place of the teensy in the cyclops a second Arduino could be used as function generator)




Nodes can be Enabled/Disabled for desired outputs files in Experiment name group to change output



Timer for experiment

Timer

timer for Exp

Workflow Output

Video feed

RegionOf Interest

Zip

ContainsPoint

Whole Arena

centroid no Na N

Assigning ROIs

Video feed

RegionOf Interest

Zip

ContainsPoint

Center area

centroid no Na N

Example-
For 50%/50% division
360X360 Whole Arena
129600 total pixels

255X255 or 254X254 Center Area
64800 total pixel Center Area

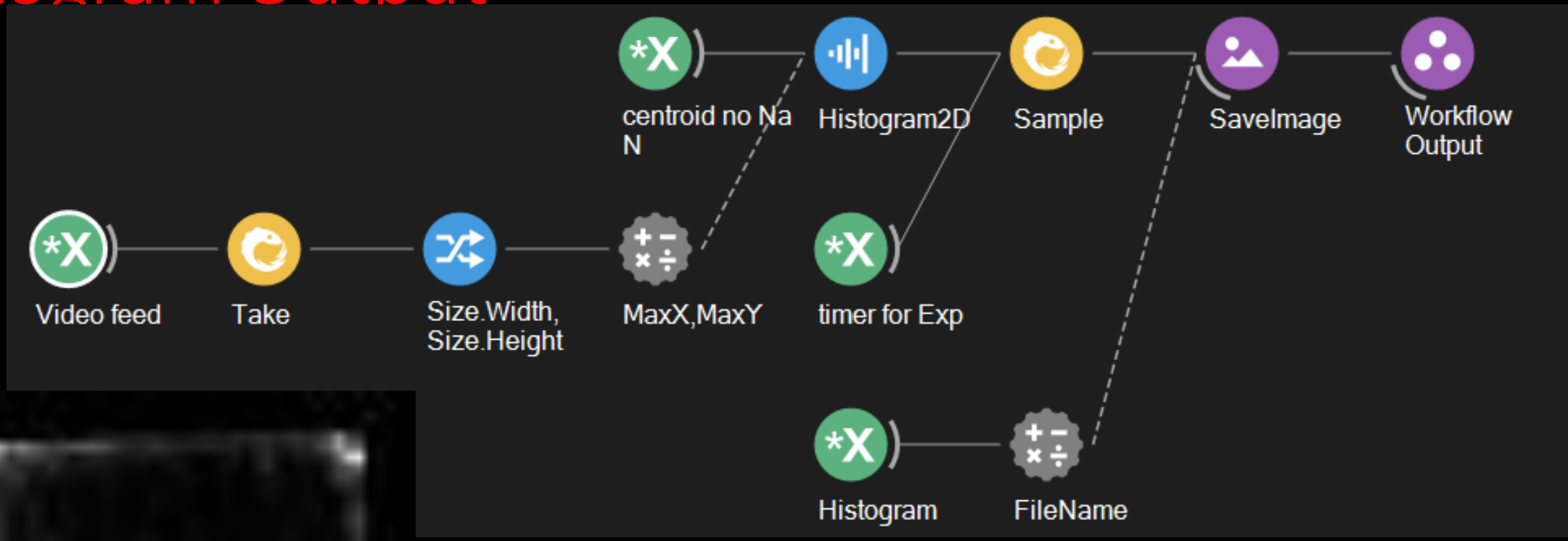
Properties

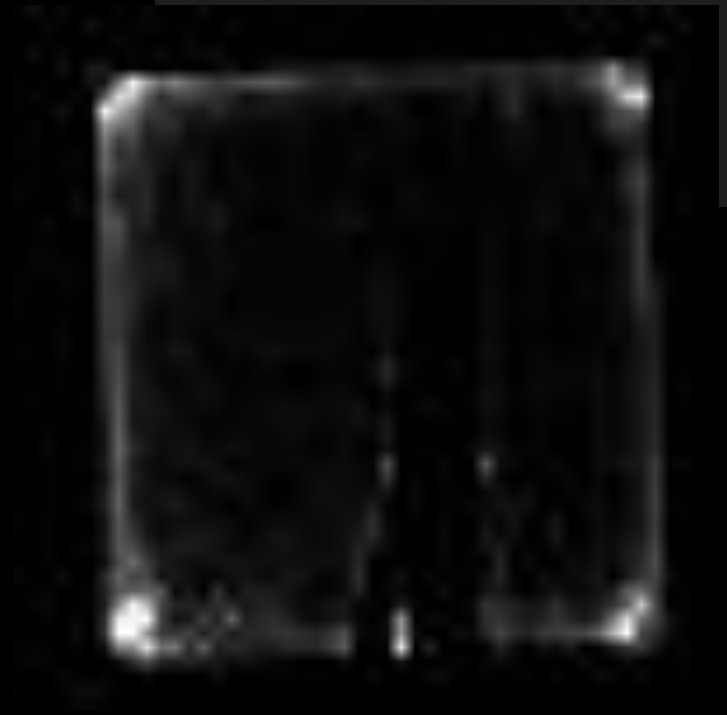
**RegionOfInterest (PropertySource` 2)**
Represents a data source created from an operator property.

**Misc**
Value 100,82,255,255

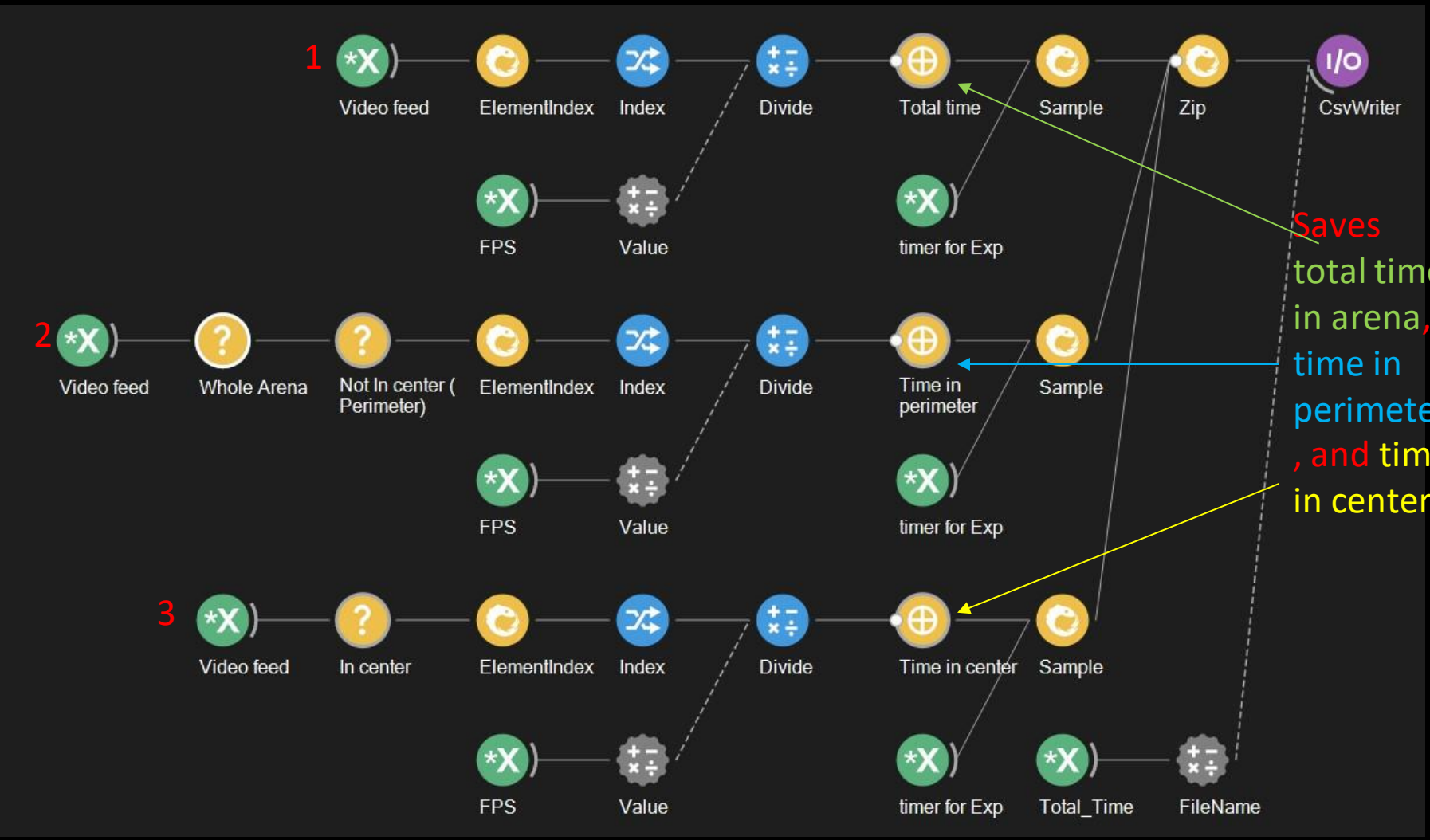
# 2D Histogram Output

Saves Histogram JPG



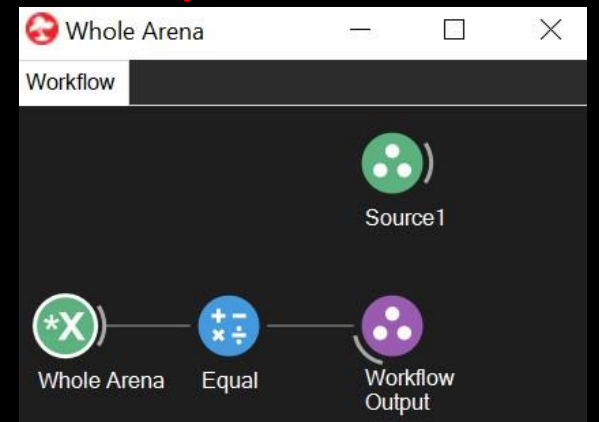



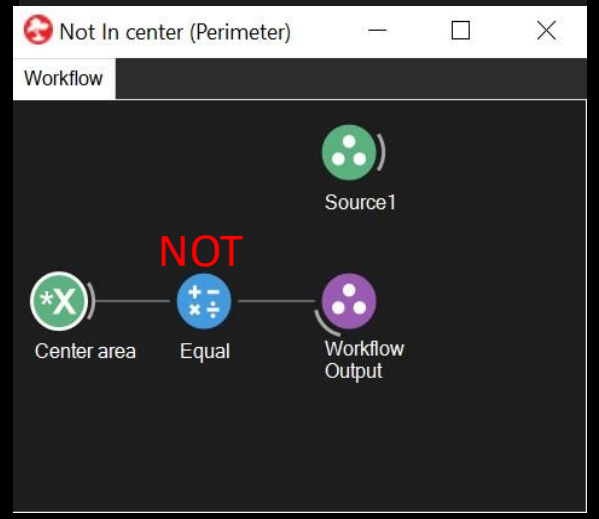
# Total Time, Perimeter, and Center Output



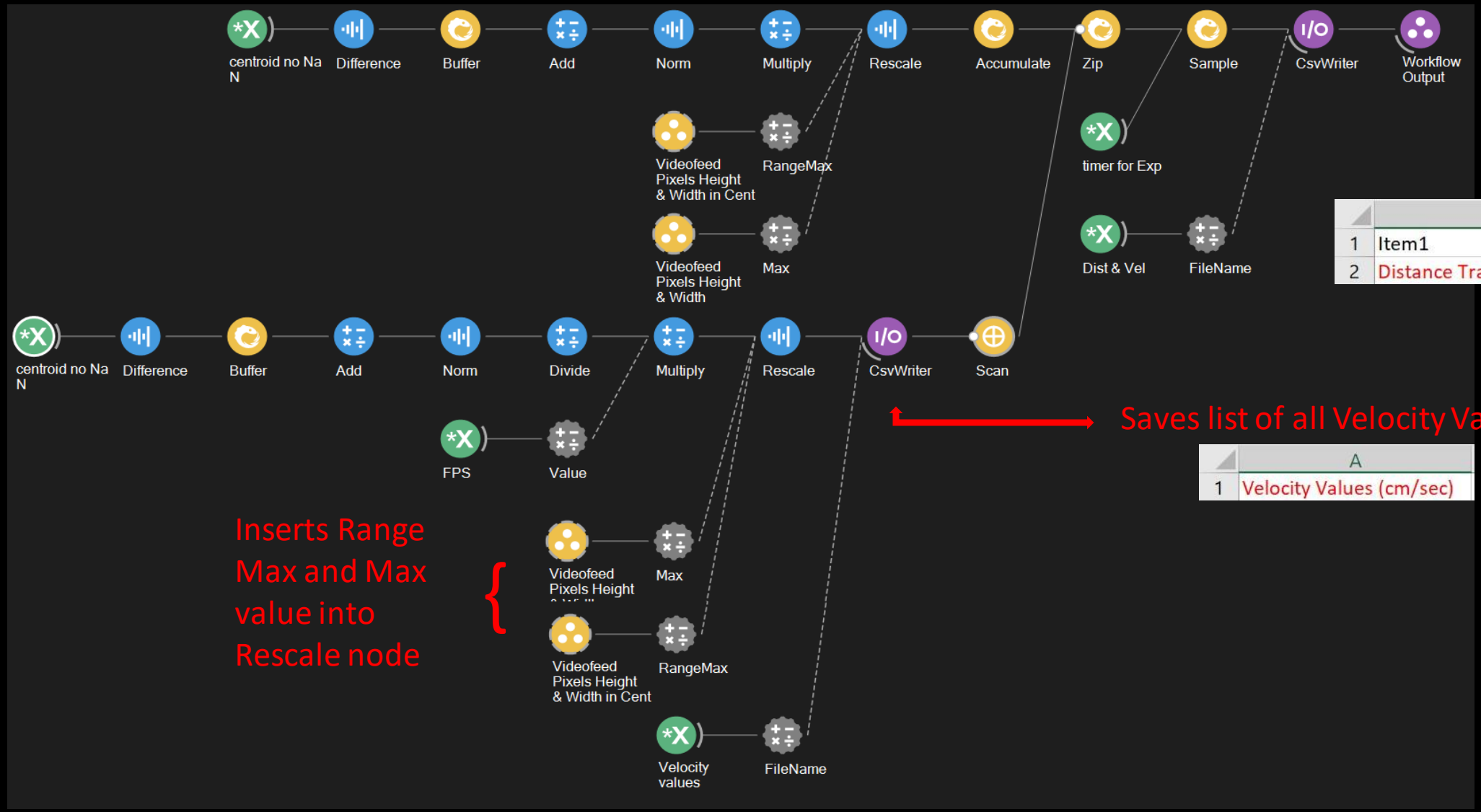

Key to cvs file output

| 1 | 2 | 3 |
|---|---|---|
| A | B | C |
| Item1 | Item2 | Item3 |
| Total Time (sec) | Time in perimeter (sec) | Time in Center Area (sec) |



# Max Velocity and Distance Traveled Output




Saves Distance Traveled and Max Velocity

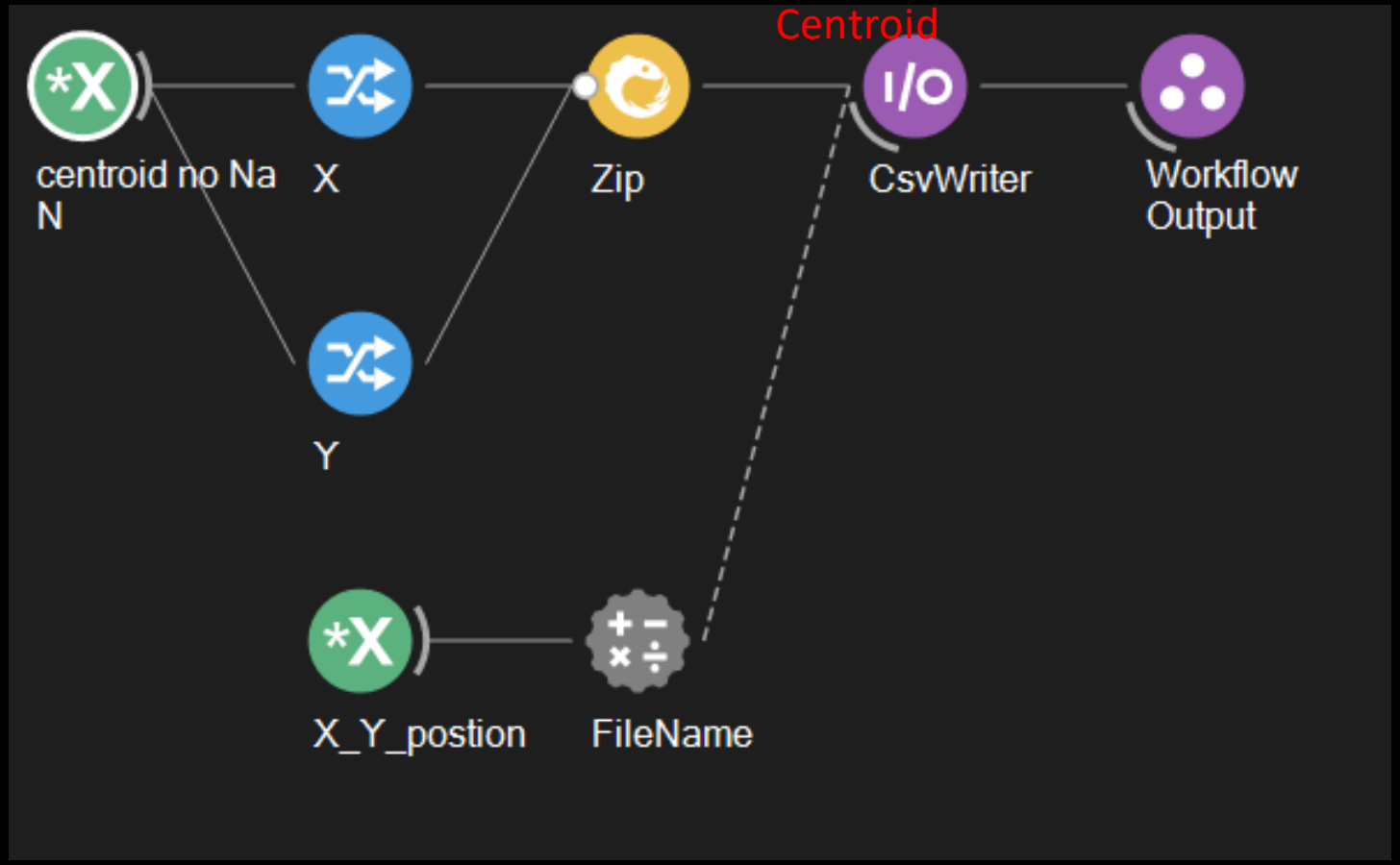
| | A | B |
|---|---|---|
| 1 | Item1 | Item2 |
| 2 | Distance Travelled (cm) | Max Velocity (cm/s) |

Saves list of all Velocity Values

| | A |
|---|---|
| 1 | Velocity Values (cm/sec) |

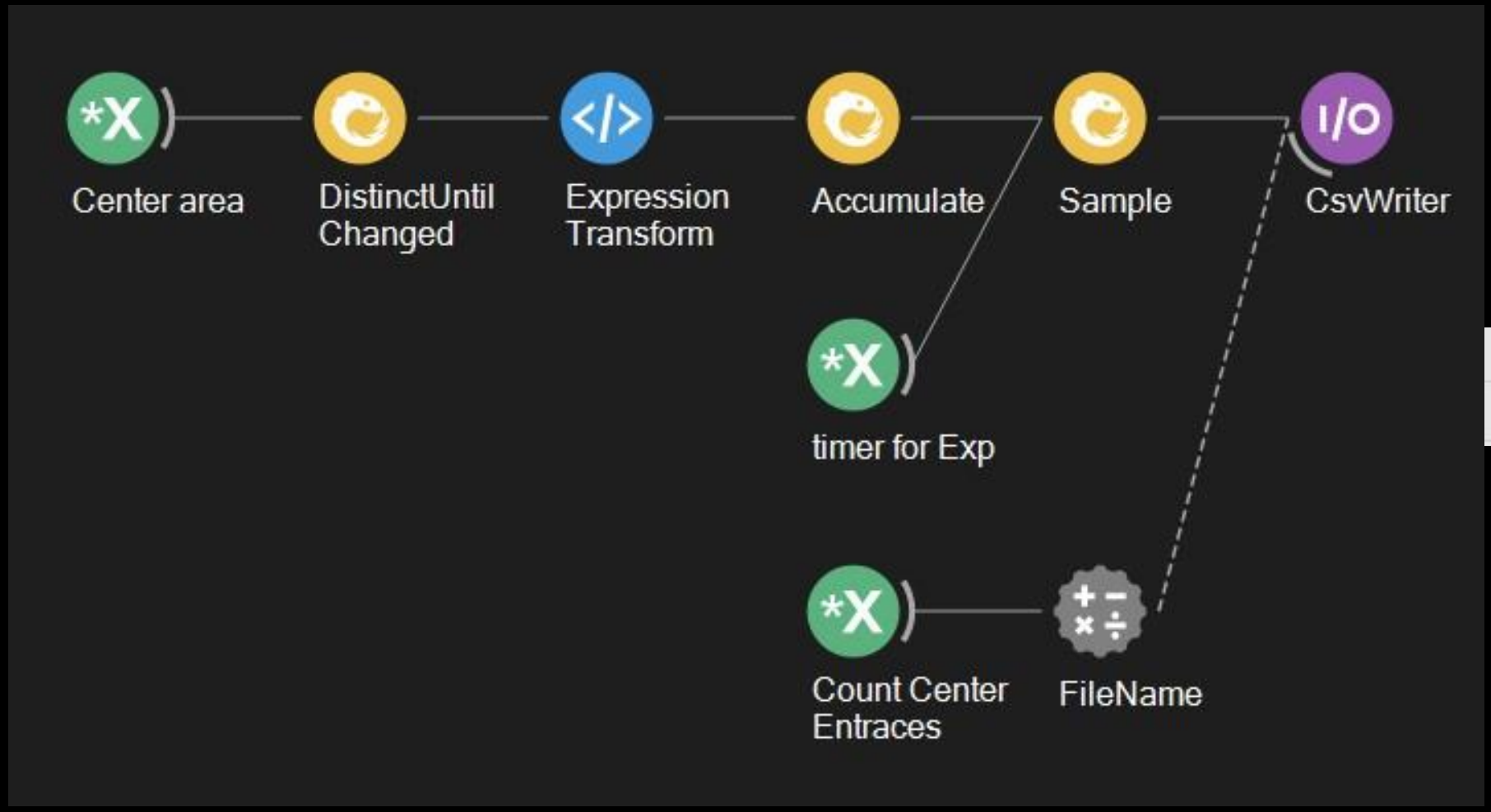
# X_Y Position Output

Saves all X_Y Positions of Centroid




| | A | B |
|---|---|---|
| 1 | Item1 | Item2 |
| 2 | X Position | Y position |

# Center Entrances Count Output

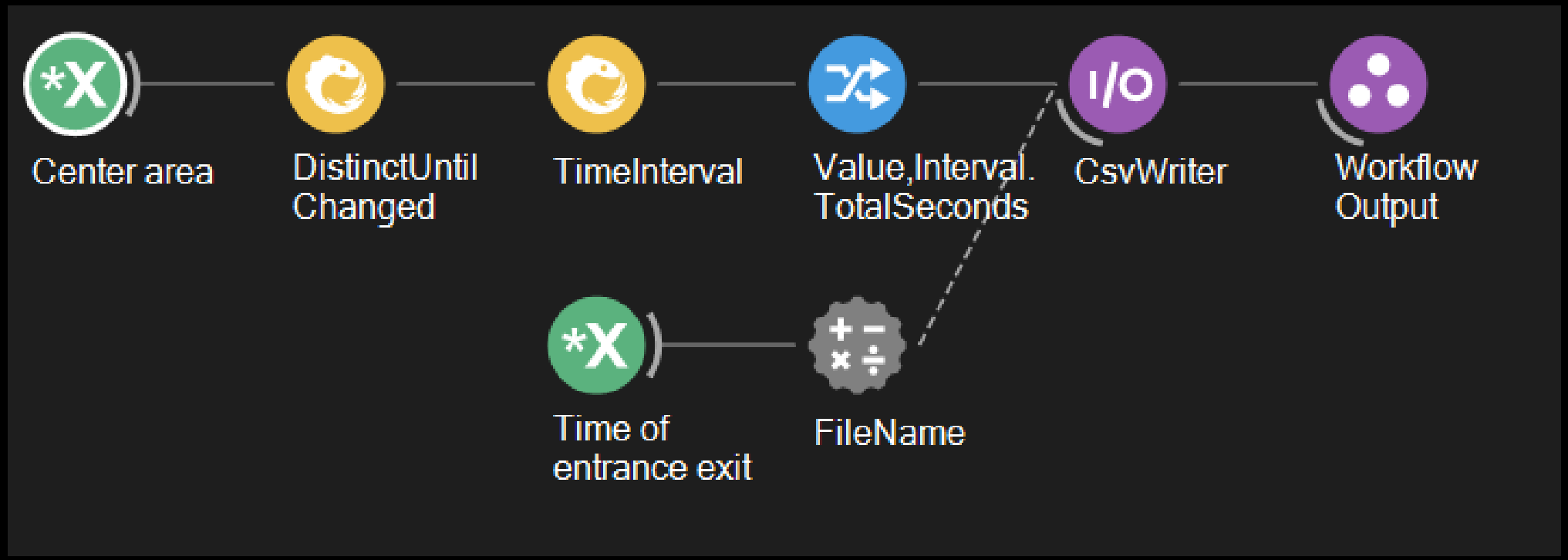



Saves total number of times centroid entered the Center Area

| | A |
|---|---|
| 1 | # of center entrances |

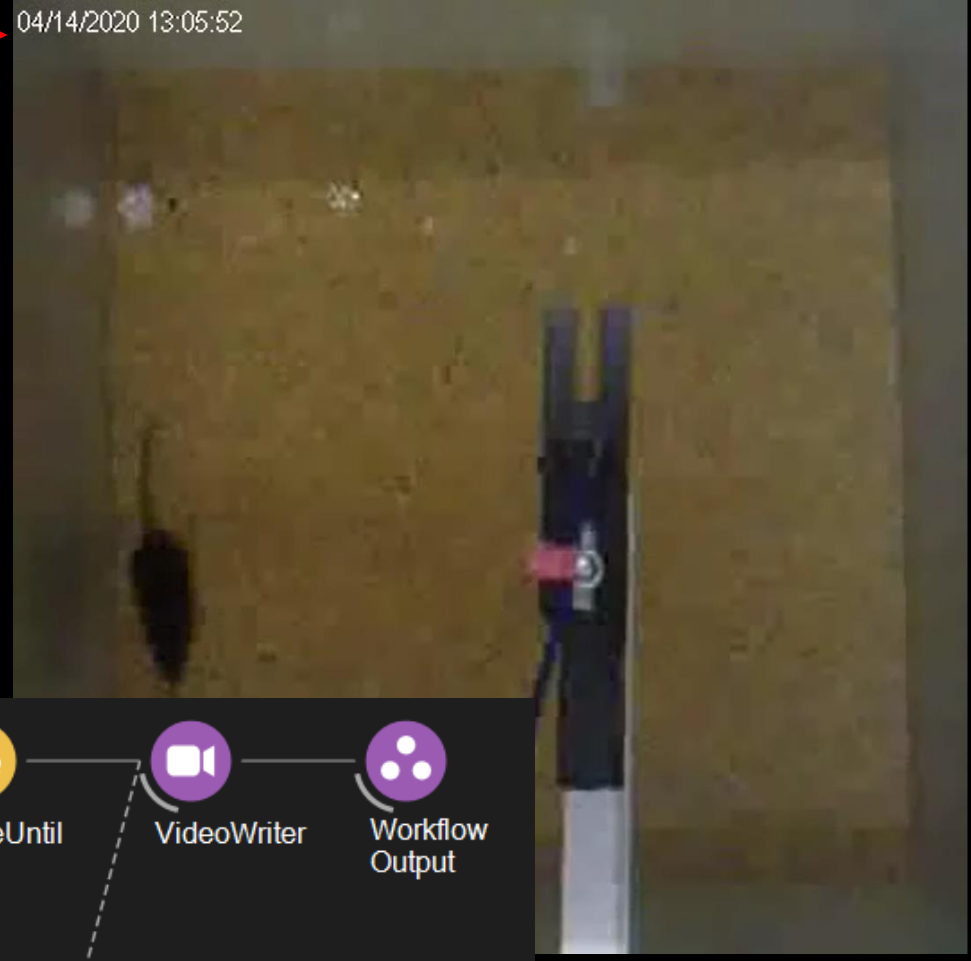
# Time of each episode in/out of center output

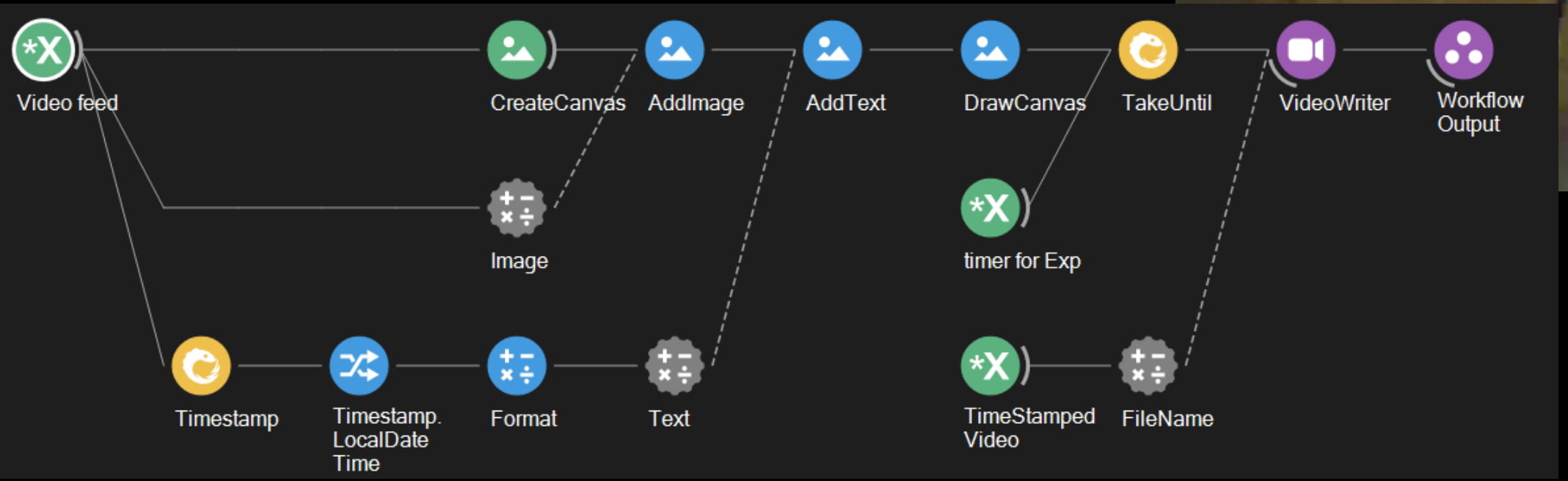
| | A | B |
|---|---|---|
| 1 | Item1 | Item2 |
| 2 | TRUE | Time Interveral in Center (sec) |



# Timestamp Video Output

Based on system time

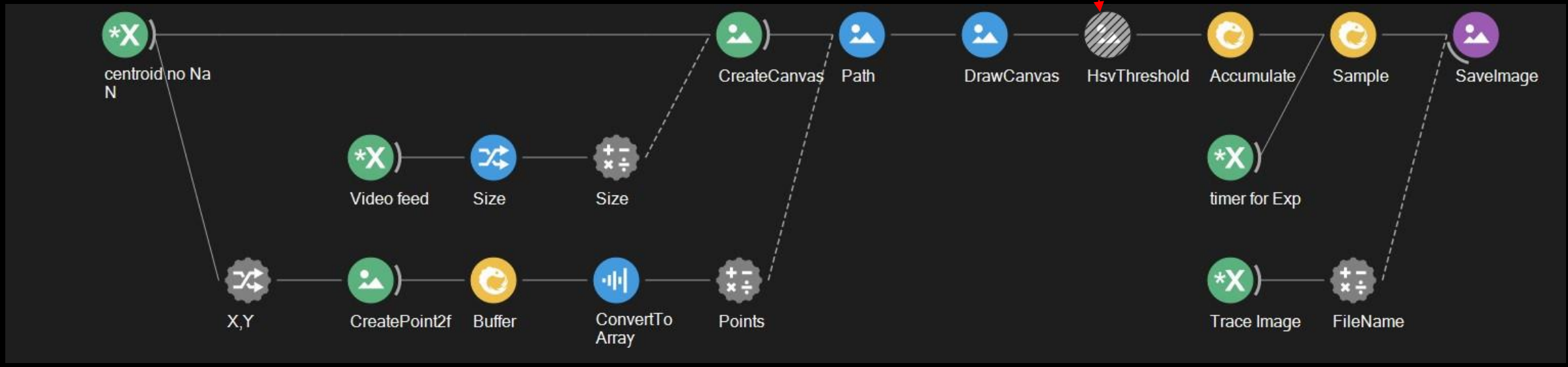


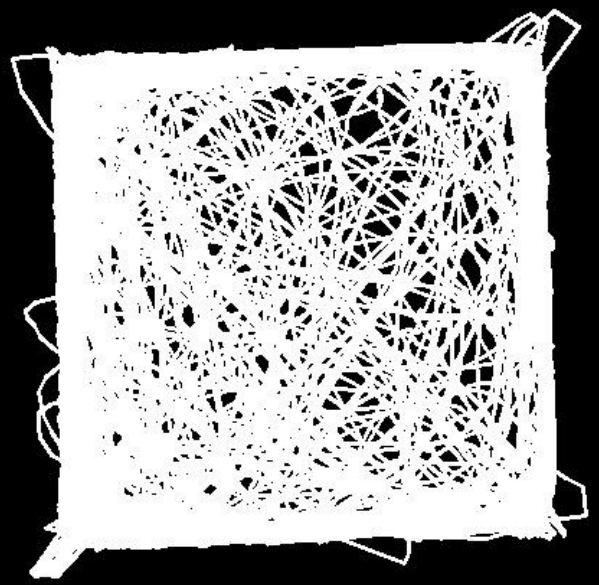



# Trace Image Output

Enable to change visualization aspect of saved image

Saves trace image of trial



# Output Files

Saves when you press “I”

- VGlut cre C189 OFT_M2_Background Image__2...
- VGlut cre C189 OFT_M2_Count Center Entrance...
- VGlut cre C189 OFT_M2_Distance & Velocity__2...
- VGlut cre C189 OFT_M2_Histogram_2020_4_14...
- VGlut cre C189 OFT_M2_Time_Entrance_Exit_20...
- VGlut cre C189 OFT_M2_TimeStampedVideo__...
- VGlut cre C189 OFT_M2_Total Time_2020_4_14_...
- VGlut cre C189 OFT_M2_Trace Image__2020_4_...
- VGlut cre C189 OFT_M2_Velocity Values_2020_...
- VGlut cre C189 OFT_M2_X_Y_Position_2020_4_...