**new, GO / no-GO task and GUI**

* 1. sequence:
     1. start of trial
     2. stim start delay
     3. display stimulus
     4. delay period
     5. center spout in (stays in for defined response window)
     6. if licks are detected give reward (+ collection time) or punishment
     7. remove center spout out
     8. inter trial interval (ITI)
     9. new trial
  2. rules:
     1. HIT = Go trial, lick within response window -> reward, ITI, new trial
     2. MISS = Go trial, did not lick in response window -> no reward, ITI, new trial
     3. CORRECT REJECT = no-Go trial, no lick in response window -> no reward, short ITI, next trail must be Go
     4. FALSE ALARM = no-Go trial, lick in response window -> no reward, punishment, ITI, new trial
     5. CATCH = no stimulus, lick / no lick in response window -> no reward, ITI, new trial
  3. GUI needs:
     1. center spout controls (rest / full)
     2. center solenoid controls (time open)
     3. session time
     4. select trial start signal (select between tone + length or center led + length)
     5. stim start delay (in sec, min – max variable)
     6. select stimulus: drop down menu for GO / no-GO (pattern / tone + duration + frequency, side: left/right/both)
     7. delay period (in sec, min - max, variable)
     8. response window (in sec): how long center spout stays close to the mouse, at the end retract the spout, if false alarm: retract the spout, if hit: wait reward collection time then retract
     9. reward collection time: in sec
     10. lick requirement: number + time
     11. punishment controls:
         + 1. False alarm punishment box: if not checked no punishment on false alarm and the only rule that applies is reward on HIT, all other just triggers new trial
           2. times for timeout + noise (maybe airpuff)
     12. inter trial interval (ITI): min - max in sec, with a negative exponential distribution
     13. short ITI: min - max in sec, negative exp distribution,
     14. max window of no responses (in sec) if there are no licks happening in this time window (on any trial) end of session.
     15. free reward: if checked spout automatically gives a water reward when GO stimulus was displayed, if not checked look for licks
     16. trial distribution: % Go trials, % catch trials.