Handedness Experiment Script

Before Experiment
- Ask if they will be compensated via extra credit or meal voucher
- if extra credit write name down on extra credit list
- Give participant the consent form according to compensation, assign a participant ID and write this ID on their form when they are finished.
- Find the counterbalancing groups for hand and device that starts.
- Show participant's Hover Intro video
- assign relevant counterbalancing for device and hand to start on

Mouse v Gesture
- Dominant Mouse Task
  - Show participant mouseIntro video.
  - Say "In the training you will perform 12 hover trials, using the mouse navigate to and hover over each square."
  - Have participant perform training for HOVER_TEST
  - Say "In the mouse Hover task you will perform 70 hover trials, using the mouse navigate to and hover over each square. If you have any questions please ask them now as once the mouse hover experiment starts I cannot answer any questions until it is finished."
  - Change UI to mouse and their hand being used and exp= HOVER_ONE
  - Run mouse Hover for dominant hand.
- Dominant Gesture Task
  - Show participant LOM intro video
  - Say "we will now begin the calibration step, please place your hand on the grey x and follow the prompts displayed."
  - Help the user during the calibration period
  - Say "In the training you will perform 12 hover trials, using your hand navigate to and hover over each square."
  - Have participant perform training for HOVER_TEST.
  - Say "In the Hover task you will perform 70 hover trials, using your hand navigate to and hover over each square. If you have any questions please ask them now as once the hover experiment starts I cannot answer any questions until it is finished."
  - change UI to LOM and hand being used, exp=HOVER_TWO
  - Run LOM hover for dominant hand.
- Non-Dominant Mouse Task
  - Say "In the training you will perform 12 hover trials, using the mouse navigate to and hover over each square."
  - Have participant perform training for HOVER_TEST

- ○ Say "In the mouse Hover task you will perform 70 hover trials, using the mouse navigate to and hover over each square. If you have any questions please ask them now as once the mouse hover experiment starts I cannot answer any questions until it is finished."
  - ○ change UI to mouse and hand being used, exp=HOVER_THREE
  - ○ Run mouse Hover for non-dominant hand.
- ● Non-Dominant Gesture Task
  - ○ Say "we will now begin the calibration step, please place your hand on the grey x and follow the prompts displayed."
  - ○ Help the user during the calibration period
  - ○ Say "In the training you will perform 12 hover trials, using your hand navigate to and hover over each square."
  - ○ Have participant perform training for HOVER_TEST.
  - ○ Say "In the Hover task you will perform 70 hover trials, using your hand navigate to and hover over each square. If you have any questions please ask them now as once the hover experiment starts I cannot answer any questions until it is finished."
  - ○ change UI to LOM and hand being used, exp= HOVER_FOUR
  - ○ Run LOM hover for non-dominant hand.
- ● 2 minute break
- ● Dominant Mouse Task
  - ○ Say "In the mouse Hover task you will perform 70 hover trials, using the mouse navigate to and hover over each square. If you have any questions please ask them now as once the mouse hover experiment starts I cannot answer any questions until it is finished."
  - ○ change UI to mouse and hand being used exp=HOVER_ONE
  - ○ Run mouse Hover for dominant hand.
- ● Dominant Gesture Task
  - ○ Say "we will now begin the calibration step, please place your hand on the grey x and follow the prompts displayed."
  - ○ Help the user during the calibration period
  - ○ Say "In the Hover task you will perform 70 hover trials, using your hand navigate to and hover over each square. If you have any questions please ask them now as once the hover experiment starts I cannot answer any questions until it is finished."
  - ○ change UI to LOM and hand being used, exp=HOVER_TWO
  - ○ Run LOM hover for dominant hand.
- ● Non-Dominant Mouse Task
  - ○ Say "In the mouse Hover task you will perform 70 hover trials, using the mouse navigate to and hover over each square. If you have any questions please ask them now as once the mouse hover experiment starts I cannot answer any questions until it is finished."
  - ○ change UI to mouse and hand being used, exp=HOVER_THREE

- ○ Run mouse Hover for non-dominant hand.
- ● Non-Dominant Gesture Task
    - ○ Say "we will now begin the calibration step, please place your hand on the grey x and follow the prompts displayed."
    - ○ Help the user during the calibration period
    - ○ Say "In the Hover task you will perform 70 hover trials, using your hand navigate to and hover over each square. If you have any questions please ask them now as once the hover experiment starts I cannot answer any questions until it is finished."
    - ○ change UI to LOM and hand being used, exp=HOVER_FOUR
    - ○ Run LOM hover for non-dominant hand.

After Tasks

- ● Administer exit survey
- ● Ask the participant if they have any questions.
- ● Inform the participant that they will be issued credit for their class if applicable
- ● Give out the coupon if applicable.
- ● Thank the participant for their participation.

After participant leaves

- ● Check logs into git.

Touchpad v Gesture

- Dominant Touchpad
  - Show participant touchpad Intro video.
  - Say "In the training you will perform 12 hover trials, using the touchpad navigate to and hover over each square."
  - Have participant perform training for HOVER_TEST
  - Say "In the Hover task you will perform 70 hover trials, using the touchpad navigate to and hover over each square. If you have any questions please ask them now as once the hover experiment starts I cannot answer any questions until it is finished."
  - Change UI to touchpad and their hand being used and exp= HOVER_ONE
  - Run touchpad Hover for dominant hand.
- Dominant Gesture Task
  - Show participant LOM intro video
  - Say "we will now begin the calibration step, please place your hand on the grey x and follow the prompts displayed."
  - Help the user during the calibration period
  - Say "In the training you will perform 12 hover trials, using your hand navigate to and hover over each square."
  - Have participant perform training for HOVER_TEST.
  - Say "In the Hover task you will perform 70 hover trials, using your hand navigate to and hover over each square. If you have any questions please ask them now as once the hover experiment starts I cannot answer any questions until it is finished."
  - change UI to LOM and hand being used, exp=HOVER_TWO
  - Run LOM hover for dominant hand
- Non-Dominant Touchpad
  - Say "In the training you will perform 12 hover trials, using the touchpad navigate to and hover over each square."
  - Have participant perform training for HOVER_TEST
  - Say "In the Hover task you will perform 70 hover trials, using the touchpad navigate to and hover over each square. If you have any questions please ask them now as once the hover experiment starts I cannot answer any questions until it is finished."
  - Change UI to touchpad and their hand being used and exp= HOVER_THREE
  - Run touchpad Hover for non-dominant hand.
- Non-Dominant Gesture Task
  - Say "we will now begin the calibration step, please place your hand on the grey x and follow the prompts displayed."
  - Help the user during the calibration period

- ○ Say "In the training you will perform 12 hover trials, using your hand navigate to and hover over each square."
- ○ Have participant perform training for HOVER_TEST.
- ○ Say "In the Hover task you will perform 70 hover trials, using your hand navigate to and hover over each square. If you have any questions please ask them now as once the hover experiment starts I cannot answer any questions until it is finished."
- ○ change UI to LOM and hand being used, exp= HOVER_FOUR
- ○ Run LOM hover for non-dominant hand.

● *2 minute break*

- ● Dominant Touchpad
  - ○ Say "In the Hover task you will perform 70 hover trials, using the touchpad navigate to and hover over each square. If you have any questions please ask them now as once the hover experiment starts I cannot answer any questions until it is finished."
  - ○ Change UI to touchpad and their hand being used and exp= HOVER_ONE
  - ○ Run touchpad Hover for dominant hand.
- ● Dominant Gesture Task
  - ○ Say "we will now begin the calibration step, please place your hand on the grey x and follow the prompts displayed."
  - ○ Help the user during the calibration period
  - ○ Say "In the Hover task you will perform 70 hover trials, using your hand navigate to and hover over each square. If you have any questions please ask them now as once the hover experiment starts I cannot answer any questions until it is finished."
  - ○ change UI to LOM and hand being used, exp=HOVER_TWO
  - ○ Run LOM hover for dominant hand
- ● Non-Dominant Touchpad
  - ○ Say "In the Hover task you will perform 70 hover trials, using the touchpad navigate to and hover over each square. If you have any questions please ask them now as once the hover experiment starts I cannot answer any questions until it is finished."
  - ○ Change UI to touchpad and their hand being used and exp= HOVER_THREE
  - ○ Run touchpad Hover for non-dominant hand.
- ● Non-Dominant Gesture Task
  - ○ Say "we will now begin the calibration step, please place your hand on the grey x and follow the prompts displayed."
  - ○ Help the user during the calibration period
  - ○ Say "In the Hover task you will perform 70 hover trials, using your hand navigate to and hover over each square. If you have any questions please ask them now as once the hover experiment starts I cannot answer any questions until it is finished."

- ○ change UI to LOM and hand being used, exp= HOVER_FOUR
- ○ Run LOM hover for non-dominant hand.

After Tasks

- Administer exit survey
- Ask the participant if they have any questions.
- Inform the participant that they will be issued credit for their class if applicable
- Give out the coupon if applicable.
- Thank the participant for their participation.

After participant leaves

- Check logs into git.

Mouse v Touchpad

- Dominant Mouse Task
    - Show participant mouseIntro video.
    - Say "In the training you will perform 12 hover trials, using the mouse navigate to and hover over each square."
    - Have participant perform training for HOVER_TEST
    - Say "In the mouse Hover task you will perform 70 hover trials, using the mouse navigate to and hover over each square. If you have any questions please ask them now as once the mouse hover experiment starts I cannot answer any questions until it is finished."
    - Change UI to mouse and their hand being used and exp= HOVER_ONE
    - Run mouse Hover for dominant hand.
- Dominant Touchpad
    - Show participant touchpad Intro video.
    - Say "In the training you will perform 12 hover trials, using the touchpad navigate to and hover over each square."
    - Have participant perform training for HOVER_TEST
    - Say "In the Hover task you will perform 70 hover trials, using the touchpad navigate to and hover over each square. If you have any questions please ask them now as once the hover experiment starts I cannot answer any questions until it is finished."
    - Change UI to touchpad and their hand being used and exp= HOVER_TWO
    - Run touchpad Hover for dominant hand.
- Non-Dominant Mouse Task
    - Say "In the training you will perform 12 hover trials, using the mouse navigate to and hover over each square."
    - Have participant perform training for HOVER_TEST
    - Say "In the mouse Hover task you will perform 70 hover trials, using the mouse navigate to and hover over each square. If you have any questions please ask them now as once the mouse hover experiment starts I cannot answer any questions until it is finished."
    - change UI to mouse and hand being used, exp=HOVER_THREE
    - Run mouse Hover for non-dominant hand.
- Dominant Touchpad
    - Say "In the training you will perform 12 hover trials, using the touchpad navigate to and hover over each square."
    - Have participant perform training for HOVER_TEST
    - Say "In the Hover task you will perform 70 hover trials, using the touchpad navigate to and hover over each square. If you have any questions please ask them now as once the hover experiment starts I cannot answer any questions until it is finished."

- ○ Change UI to touchpad and their hand being used and exp= HOVER_FOUR
  - ○ Run touchpad Hover for non-dominant hand.
- ●
- ● 2 minute break
- ● Dominant Mouse Task
  - ○ Say "In the mouse Hover task you will perform 70 hover trials, using the mouse navigate to and hover over each square. If you have any questions please ask them now as once the mouse hover experiment starts I cannot answer any questions until it is finished."
  - ○ change UI to mouse and hand being used exp=HOVER_ONE
  - ○ Run mouse Hover for dominant hand.
- ● Dominant Touchpad
  - ○ Say "In the Hover task you will perform 70 hover trials, using the touchpad navigate to and hover over each square. If you have any questions please ask them now as once the hover experiment starts I cannot answer any questions until it is finished."
  - ○ Change UI to touchpad and their hand being used and exp= HOVER_TWO
  - ○ Run touchpad Hover for dominant hand.
- ●
- ● Non-Dominant Mouse Task
  - ○ Say "In the mouse Hover task you will perform 70 hover trials, using the mouse navigate to and hover over each square. If you have any questions please ask them now as once the mouse hover experiment starts I cannot answer any questions until it is finished."
  - ○ change UI to mouse and hand being used, exp=HOVER_THREE
  - ○ Run mouse Hover for non-dominant hand.
- ● Dominant Touchpad
  - ○ Say "In the Hover task you will perform 70 hover trials, using the touchpad navigate to and hover over each square. If you have any questions please ask them now as once the hover experiment starts I cannot answer any questions until it is finished."
  - ○ Change UI to touchpad and their hand being used and exp= HOVER_FOUR
  - ○ Run touchpad Hover for non-dominant hand.

After Tasks
- ● Administer exit survey
- ● Ask the participant if they have any questions.
- ● Inform the participant that they will be issued credit for their class if applicable
- ● Give out the coupon if applicable.
- ● Thank the participant for their participation.

After participant leaves
- ● Check logs into git.

Accessibility Scripts

Featuring Hovers and Hybrid with Multimodal

- Mouse Hover Task
  - Show hover task video
  - Show participant mouse Intro video.
  - Say "In the training you will perform 12 hover trials, using the mouse navigate to and hover over each square."
  - Have participant perform training for HOVER_TEST
  - Say "In the mouse Hover task you will perform 70 hover trials, using the mouse navigate to and hover over each square. If you have any questions please ask them now as once the mouse hover experiment starts I cannot answer any questions until it is finished."
  - Change UI to mouse and their hand being used and exp= HOVER_ONE
  - Run mouse Hover.
- Mouse Hybrid Task
  - show hybrid task video
  - Say "In the training you will perform 12 trials which will be a combination of left click, right click and hover, using the mouse navigate to and perform the specified action over each square."
  - Have participant perform training for HYBRID_TEST
  - Say "In the mouse hybrid task you will perform 70 trials with a specified action(left click, right click, hover), using the mouse navigate to and perform the specified action over each square. If you have any questions please ask them now as once the experiment starts I cannot answer any questions until it is finished."
  - Change UI to mouse and their hand being used and exp= HYBRID_ONE
  - Run mouse hybrid
- Gesture Hover task
  - Show participant LOM intro video
  - Say "we will now begin the calibration step, please place your hand on the grey x and follow the prompts displayed."
  - Help the user during the calibration period
  - Say "In the training you will perform 12 hover trials, using your hand navigate to and hover over each square."
  - Have participant perform training for HOVER_TEST.
  - Say "In the Hover task you will perform 70 hover trials, using your hand navigate to and hover over each square. If you have any questions please ask them now as once the hover experiment starts I cannot answer any questions until it is finished."
  - change UI to LOM and hand being used, exp=HOVER_TWO
  - Run LOM hover
- Gesture Hyrbid task

- show hybrid multimodal task video
- Say "In the training you will perform 12 trials using 3 different actions (left click, right click, and hover), using your hand navigate to and perform the specified action over each square."
- Have participant perform training for Hybrid_TEST.
- Say "In the hyrbid task you will perform 70 trials using 3 different actions(left click, right click, and hover), using your hand navigate to and perform the specified action over each square. If you have any questions please ask them now as once the experiment starts I cannot answer any questions until it is finished."
- change UI to LOM and hand being used, exp=HYRBID_TWO
- Run LOM Hybrid

After Tasks
- Administer exit survey.
- Ask the participant if they have any questions.
- Give out 2 coupons.
- Thank the participant for their participation.

After participant leaves
- Check logs into git.

Models with their blind Alphabetical symbols
- ○ Planar => A
- ○ Projective => B
- ○ Defacto with rested elbow => C
- ○ De facto unrested => D
- ○ TouchPad => NO MODEL TYPE simply push touchpad button

CHI Sphere

First look up the participant's ordering using [Experimental Design Document](#)

Measure the participants length of their arm from their palm center to their elbow crease

- ● Touchpad
  - ○ Show participant touchpad Intro video.
  - ○ Say "In the training you will perform 12 hover trials, using the touchpad navigate to and hover over each square."
  - ○ Have participant perform training for HOVER_TEST
  - ○ Say "In the Hover task you will perform 70 hover trials, using the touchpad navigate to and hover over each square. If you have any questions please ask them now as once the hover experiment starts I cannot answer any questions until it is finished."
  - ○ Change UI to touchpad and their hand being used and exp= HOVER_ONE
  - ○ Run touchpad Hover.
- ● De Facto Unrested D
  - ○ Show participant DeFacto unrested intro video
  - ○ Say "Try to hit each corner of the screen, note that you will not be able to do so from a rested position."
  - ○ Say "In the training you will perform 12 hover trials, using your hand navigate to and hover over each square."
  - ○ Have participant perform training for HOVER_TEST.
  - ○ Say "In the Hover task you will perform 70 hover trials, using your hand navigate to and hover over each square. If you have any questions please ask them now as once the hover experiment starts I cannot answer any questions until it is finished."
  - ○ change UI to LOM and Model to type D, exp=HOVER_TWO
  - ○ Run LOM hover
- ● De facto rested C
  - ○ Show participant LOM intro video
  - ○ Say "we will now begin the calibration step, please place your elbow on the grey x and follow the prompts displayed."
  - ○ Help the user during the calibration period

- ○ Say "In the training you will perform 12 hover trials, using your hand navigate to and hover over each square."
- ○ Have participant perform training for HOVER_TEST.
- ○ Say "In the Hover task you will perform 70 hover trials, using your hand navigate to and hover over each square. If you have any questions please ask them now as once the hover experiment starts I cannot answer any questions until it is finished."
- ○ change UI to LOM and model to type C, exp= HOVER_THREE
- ○ Run LOM hover
- ● Planar Model A
  - ○ Show participant LOM intro video, if not already shown previously
  - ○ Say "we will now begin the calibration step, please place your elbow on the grey x and follow the prompts displayed."
  - ○ Help the user during the calibration period
  - ○ Say "In the training you will perform 12 hover trials, using your hand navigate to and hover over each square."
  - ○ Have participant perform training for HOVER_TEST.
  - ○ Say "In the Hover task you will perform 70 hover trials, using your hand navigate to and hover over each square. If you have any questions please ask them now as once the hover experiment starts I cannot answer any questions until it is finished."
  - ○ change UI to LOM and model to type A, exp= HOVER_FOUR
  - ○ Run LOM hover
- ● Sphere Model B
  - ○ Show participant LOM intro video, if not already shown previously
  - ○ Say "we will now begin the calibration step, please place your elbow on the grey x and follow the prompts displayed."
  - ○ Help the user during the calibration period
  - ○ Say "In the training you will perform 12 hover trials, using your hand navigate to and hover over each square."
  - ○ Have participant perform training for HOVER_TEST.
  - ○ Say "In the Hover task you will perform 70 hover trials, using your hand navigate to and hover over each square. If you have any questions please ask them now as once the hover experiment starts I cannot answer any questions until it is finished."
  - ○ change UI to LOM and model to type B, exp= HOVER_FIVE
  - ○ Run LOM hover

After Tasks
- ● Administer exit survey
- ● Ask the participant if they have any questions.
- ● Inform the participant that they will be issued credit for their class if applicable
- ● Give out the coupon if applicable.

- Thank the participant for their participation.

After participant leaves

- Check logs into git.