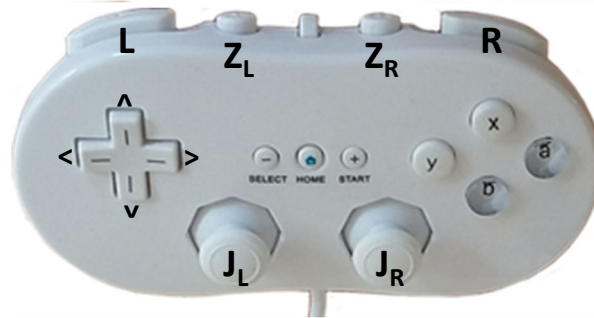
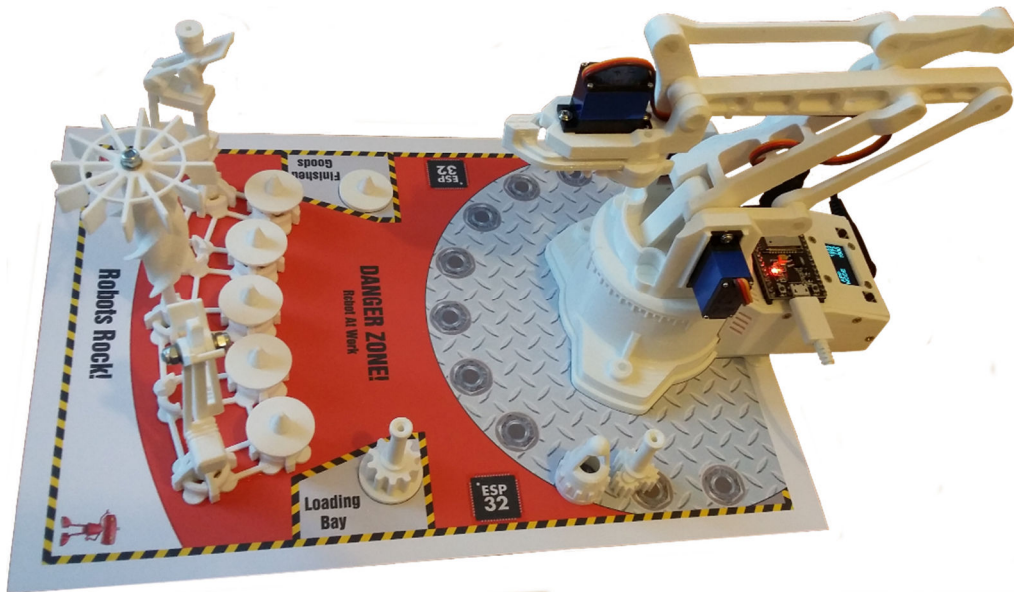
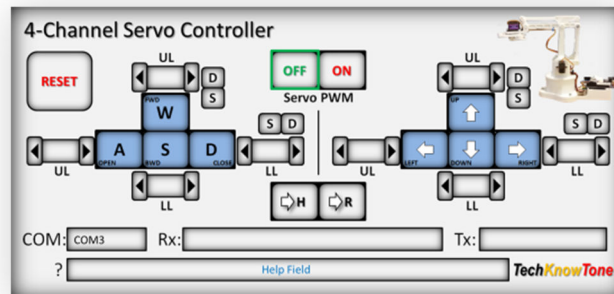


Reach Robot Mk1 – Demo Functions



Note:

If no controller is connected, a long press on SW0 will take the robot into 'demo' mode. There after any button press will take it to the rest position.



Tech:

- ESP32 microcontroller
- 4 x Servo motors
- I2C wired Wii Classic controller
- 7.4v batteries / adapter
- 3-D printed construction

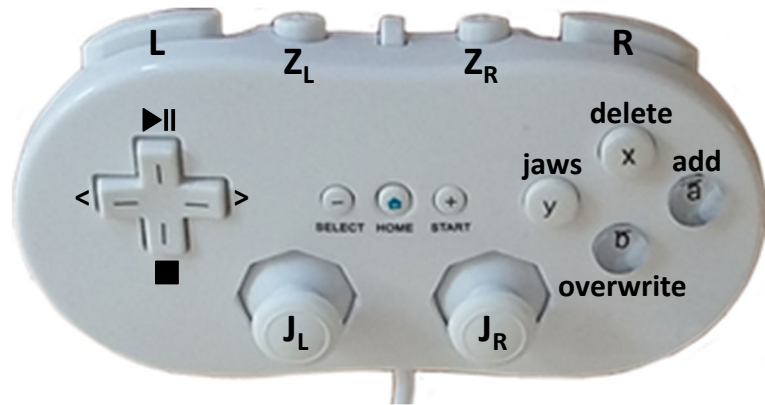
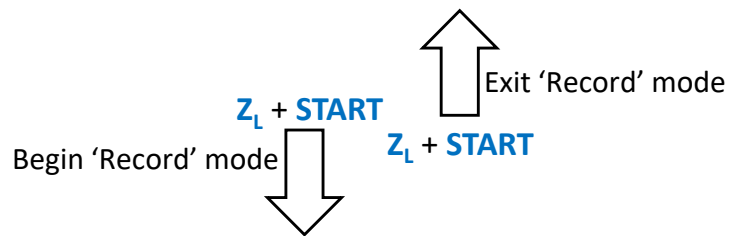
Features:

- Safe start, move to rest
- Controlled via Wii controller
- Turns, reaches and opens jaws
- Performs pre-set moves
- XYZ programmed via Windows app

Wii Controller (Normal Mode):

- **HOME** – moves to ready position
- **L + HOME** – performs main demo 2
- **J_L** – joystick X moves jaws, Y moves reach
- **J_R** – joystick X rotates L/R, Y moves up/down
- **L** or **R** – halves joystick demands
- **SELECT** – moves to reset/rest position
- **L + SELECT** – performs main demo 1
- **START** – moves to floor position
- **L + START** – performs main demo 3
- **y** – toggles step/continuous print servo values
- **Z_L** or **Z_R** – quarters joystick demands
- **Z_L + START** – toggle Record/Normal modes
- **<** or **^** or **>** or **v** – perform reach moves L/C/R/D

Reach Robot Mk1 – Wii Functions

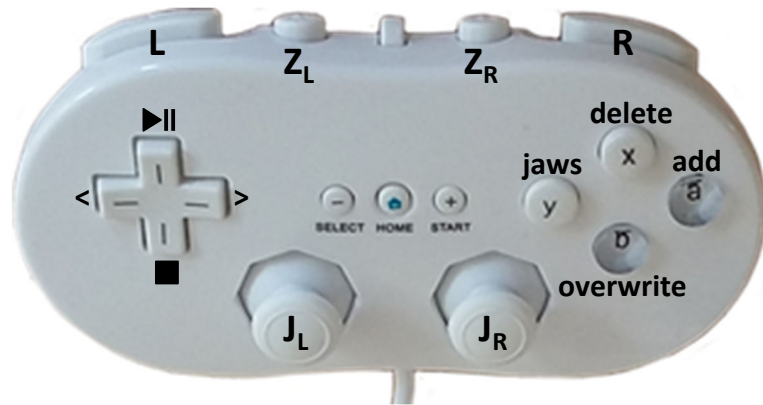
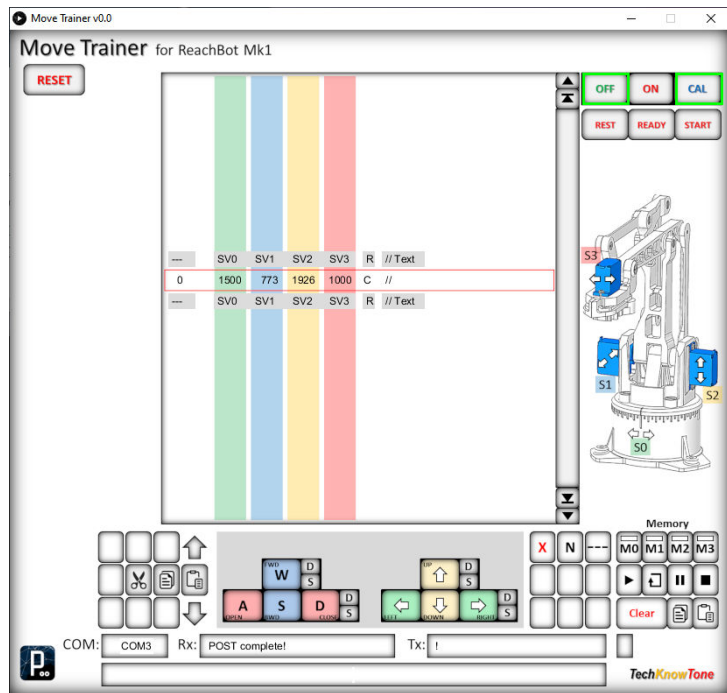


Note:
Front buttons 'L' 'Z_L' 'Z_R' 'R' act like control keys

Wii Controller (Record Mode):

- ▶|| - play/pause the recorded move sequence
- (held) play cycle repeatedly until stopped
- - stop 'play' and go to 'start'
- < - move to previous recorded position, cycle
- > - move to next recorded position, cycle
- SELECT** - moves to reset/rest position, overwrites current
- HOME** - moves to ready position, overwrites current
- START** - moves to floor position, overwrites current
- a** - add a new point in the sequence, as current
- b** - insert/increment a delay, in 100ms steps
- if held down auto-increment up to 9.9 seconds
- x** - snapshot current position in memory
- y** - close/open jaws 'n' times (assumes open to start)
- J_L** - X open/closes jaws, Y moves reach fwd/bckwd
- J_R** - X rotates L/R, Y moves up/down
- L** (< or >) - insert a slow down/speed up command
- L + x** - recall, overwrite and move to the snapshot point
- L + y** - decrement stored clap count (9 – 0)
- L + b** - decrement delay, in 100ms steps to zero
- L + a** - appends the current position as last point
- L + R** - export recorded move sequence to serial port
- (L or R) + J_n** - hold L or R to half joystick demands
- Z_L + START** - RECORD mode enter/exit toggle, Hold to clear
- Z_L + a** - delete current point
- (Z_L or Z_R) + J_n** - hold L or R to quarter any joystick demands

Reach Robot Mk1 – Windows App



Note:
Front buttons 'L' 'Z_L' 'Z_R' 'R' act like control keys

Wii Controller (App Mode):

- ▶|| - play/pause the recorded move sequence
- (held) play cycle repeatedly until stopped
- - stop 'play' and go to 'start'
- < - move to previous recorded position, cycle
- > - move to next recorded position, cycle
- SELECT** - moves to reset/rest position, overwrites current
- HOME** - moves to ready position, overwrites current
- START** - moves to floor position, overwrites current
- a** - add a new point in the sequence, as current
- b** - insert/increment a delay, in 100ms steps
- if held down auto-increment up to 9.9 seconds
- x** - snapshot current position in memory
- y** - close/open jaws 'n' times (assumes open to start)
- J_L** - X open/closes jaws, Y moves reach fwd/bckwd
- J_R** - X rotates L/R, Y moves up/down
- L + x** - recall, overwrite and move to the snapshot point
- L + y** - decrement stored clap count (9 – 0)
- L + b** - decrement delay, in 100ms steps to zero
- L + a** - appends the current position as last point
- L + R** - export recorded move sequence to serial port
- (L or R) + J_n** - hold L or R to half joystick demands
- Z_L + START** - RECORD mode enter/exit toggle, Hold to clear
- Z_L + a** - delete current point
- (Z_L or Z_R) + J_n** - hold L or R to quarter any joystick demands

Note: connecting the robot to the Windows App prevents the robot from entering local Record Mode, as the app extends the functionality of the stored data, which can be copied and used in robot C++ code.