

# Launcher Algorithm

- 1) Bluetooth receiver- receives go signal with angle of rotation
- 2) Move the stepper motor according to given rotation
  - 1) Provide gear ratio to change any time (for eg. if we want to change gear ratio from 3:1 To 5:1 define a variable which act as a multiplier for stepper motor)
  - 2) Rotation receive is overall angle, not angle of rotation of stepper motor (for eg. if gear ratio is 3:1 and stepper is off 200 steps and angle received from bluetooth is 30 degree which means steps for stepper is  $30 \times \{\text{steps(i.e. 200)}/360\} \times \text{gear ratio multiplier(i.e. 3)}$  )
  - 3) Also provide variable to change steps of stepper along with gear ratio variable.
- 3) Give enough delay to complete rotation then send back bluetooth transmitter to prompt msg once rotation done.

**Emergency algorithm:** Add emergency stop over main algorithm using while loop

- 1) Check for emergency stop algorithm from bluetooth receiver.
- 2) Receives emergency stop signal from bluetooth
- 3) Assign a variable called flag (for while loop) to 1 from 0
- 4) While loop condition satisfy and proceed to next procedure.
- 5) Stop rotating stepper
- 6) Wait for 3 second
- 7) Return back to start position
- 8) Send back msg prompt through transmitter as system is "SYSTEM RESET"
- 9) Turn flag to 0 and wait for next emergency stop