Part list

1. Physical structure
   1. Base assembly
      1. Mounting/Top triangle
         1. Top triangle
         2. Main support
      2. Base Triangle
      3. 6 Plexiglass stands
      4. Plexiglass paper keepers
         1. Top keepers
         2. Side keepers
         3. Bottom keepers
   2. Servo tripod assembly
      1. 3 Servo motors
      2. Top support
      3. Bottom support
      4. 3 Servo brackets
      5. 3 Levers
      6. 3 Rods(Not finalized)
      7. Base platform (or effector platform)
2. Electrical Connections and Circuits
   1. Arduino
   2. 3 servo motors
   3. External power source

Manufacturing plan:

1. Laser cut the following items:
   1. 1 Base Triangle
   2. 1 Top triangle
   3. 1 Main support
   4. 1 Top support
   5. 1 Bottom support
   6. The 3 servo brackets
   7. 6 Plexiglass stands
   8. Plexiglass paper keepers
2. 3D print the following items:
   1. 3 levers
   2. 6 rods
   3. 1 Effector
   4. 3 Connectors
3. Make the servo tripod assembly
   1. Put the 3 servo brackets in the holes in the bottom support piece
      1. The servo bracket’s holes should be more outer rather than being inner facing
   2. Put the top support piece on top of the 3 servo brackets
      1. The two support pieces should be mirrored across the middle of the servo brackets
   3. Insert the servo motors into the servo brackets so the rotating part of the servo aligns with the center of the support pieces. Then hot glue the servos to the servo brackets
   4. Set the servo motors to 45 degrees each through the Arduino. Then attach the lever pieces to the servo motors so the levers are 45 degrees to the bottom support piece
   5. Use adhesive to hold the laser cut pieces together at every connection point
   6. Make the 6 rods by connecting two ball joints by their stem to the rod ends for each rod by hot glue the pieces together
   7. Put the 3 connector pieces into the holes on the effector piece. It should be just press fit but can be hot glued if necessary
   8. Connect one of the screw ends of each rod to the connector pieces on the effector. This should be press fit but can be hot glued if necessary
4. Make the base structure assembly
   1. Start with the base triangle and place the paper keepers in the holes that trace a rectangle
      1. The 2 bottom paper keepers are placed in the holes along the flat bottom of the base triangle with their flat side facing each other
      2. The side paper keepers are placed right above the bottom paper keepers in the holes that are perpendicular to the flat bottom of the base triangle
      3. Place the top paper keeper on top of the side paper keepers. This should close the gap between the two side keepers
   2. Place the 6 Plexiglas stands in pairs of 2 in each of the corners in the holes
   3. Place the top triangle on top of the Plexiglas stands so they fit into the holes on the top triangle
   4. Attach the main support piece to the top triangle where the 3 spokes of the main support piece are in the middle of each the top triangle’s sides
   5. Use adhesive to hold the laser cut pieces together at every connection point
5. Attach the servo tripod assembly to the main support piece by screwing the top support piece of the servo tripod to the main support piece of the base structure assembly. The central triangles of the support pieces should line up. The bottom support piece is on the same side that the lever pieces are pointed in
6. Attach the remaining screw ends to the lever pieces where the levers and the connector pieces are parallel to the lever pieces
7. Electrical system
   1. Connect the ground wires of each servo (It is the brown wire on the servos) to the external power supply’s ground and the arduino’s ground
   2. Connect the power wires of each servo (It is the red wire on the servos) to the external power supply’s power
   3. Connect the signal wires of each servo (It is the orange wire on the servos) to the corresponding arduino pins. For this part, the bottom is the bottom part of the base triangle
      1. The bottom servo’s signal wire goes to the 8th digital pin on the arduino
      2. The right servo’s signal wire goes to the 9th digital pin on the arduino
      3. The left servo’s signal wire goes to the 10th digital pin on the arduino