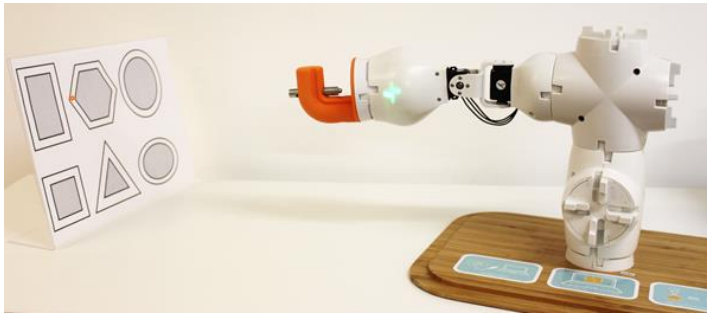
Build a robot that draws with a laser

You will program a robot to draw geometrical figures with a laser pointer.



Robots equipped with powerful lasers are used in manufacturing to weld metal parts or cut them into specific shapes.

Note that several groups can take turns programming the same robot.

Task 1:

Construct the robot as shown in the image and position the laser pointer so that it is able to trace the figures.

Task 2:

Program the robot to move the laser dot along the edges of the geometrical figures. The laser dot must be kept inside the lines. Try to make the movements as smooth as possible. You get 5 points per figure in the first row, 10 points in the second row, and 15 in the last row.

Task 3:

Experiment with the program and the robot to make it more user-friendly or interesting.

For example, you can program the robot to pause when the space bar is pressed, or you can include variables and mathematical formulas in your program that make it easy to get the robot to draw new geometrical figures.

Make it draw as complex a figure as possible.