SumoBot

Year three. Yikes.

We are giving you:

3 unmodified servoes
1 Pontech SV203b board to which you can download limited Basic programs via serial port
A disk and instructions for the Pontech.

Your responsibility with respect to what we give you is:

Use the servoes but do not open them to modify them. Gluing is OK.
Use the pontech board but do not crush or burn it. Gluing is NOT OK.
Look at the disk and instruction and return them unscathed to us.

Your job is to create a creature that can locomote using what we give you. It will do so autonomously, and effectively, in playing a simple game of SumoBot. Here are the rules of the game:

Robot electronics list

We provide three position-control servoes and an SV203. You may add batteries (regular servo-powering batteries only). You may not add servoes although you may add sensors (check with us) as long as the sensors are read by the SV203. Please add an on/off switch!

Robot hardware

You may use any hardware to build the robot (e.g. cardboard, foam board, sheet metal, duct tape, glue, Velcro, Lexan, acrylic, etc.). You may not add any additional motors, be they gasoline-powered, electrically powered or spring-powered. The only energy-storage device allowed is a single servo battery pack. You may not intentionally damage your competition's hardware (squirting cyanoacrylate, acid or water at them is a no-no).

Robot intelligence

The robot must be completely autonomous, with all code running on the SV203. No other computer may be used during the contest. You are allowed to make trained animals part of your robot, but they must be of a lower intelligence level than a primate and must qualify with respect to the dimensions and weight regulations below.

Robot dimensions

At game start, the robot must be able to fit in a box 15” x 12” x 7” in the orientation of your choice. It may expand beyond that size after the game begins.

Robot weight

The robot may weigh no more than 2.0001 pounds.

Sumo table

We will play on the wood-laminated 72” x 30” table in REL.
The robots start at opposite long ends of the table, in any position with a distance of not less than 8” between the robot and the circle perimeter.

In the center of the table is a circle 25” in diameter with its perimeter marked by pencil.

Robot activation

At the beginning of the game, there must be a sensor-based method for telling your robot to begin playing (e.g. I will push a button, touch two leads, flip a switch, et cetera).

The robot in its entirety must be mobile – it may not consist of any parts that are affixed to the table.

The robot MUST have an on/off switch that you use to activate it.

Endgame rules

Crossing the threshold is defined as any part of the robot crossing the circle perimeter. *Leaving the circle* is defined as an event, after the threshold has been crossed, in which the entirety of the robot is outside the perimeter.

The game ends when the judge determines that progress is not being had.
If both robots never cross the circle threshold, they tie.
If both robots never leave the circle, they tie.
If one robot crosses the threshold (any part of it) and the other never crosses the threshold, the former robot wins.
If both robots cross the threshold, the first robot to leave the circle loses.