Some thoughts on how the useless box should work:

Setup statements (inputs etc.) and library referrals

The loop

If switch is off – do nothing except for continuing whatever actions are prescribed in one of the various cases defined below.

If the switch is on:

* Select a random number between 1 and the number of cases (10?)
* Run the actions in the defined case. I am not sure if we can initiate a case without a trigger from the switch or not. I am assuming we can so if we can’t some of the below won’t be relevant
* End

Cases:

1. When switch is flipped activate arm servo to turn off switch without any use of the lid servo
2. When switch is flipped activate arm servo to halfway position, pause for 1 sec, then turn off switch
3. When switch is flipped do nothing and wait for user to reach toward switch and trigger prox sensor
   1. When detected raise lid but not arm and close
   2. When detected the second time raise lid and raise arm halfway and then close
   3. When detected the third time raise lid and raise arm to close the switch
   4. If the person does not come back around at any point for 5 seconds, raise arm and turn off the switch
4. While the switch is still off wait for a person to be detected by the prox sensor
   1. Open the lid and hold it for a second or two then close
      1. If they have now flipped the switch use the arm to close the switch without the lid servo
      2. If they have not flipped the switch wait for them to come back and clap the lid three times
         1. If they have still not flipped the switch wait three to five seconds and then exit this case and select a new one
      3. If they do flip the switch use the switch arm servo to flip the switch
5. When the switch is flipped activate the lid servo, clap a few times and close.
   1. Wait three seconds
   2. If the person comes back clap three times again and close
   3. Wait three more seconds
   4. If they don’t come back open the lid servo and then use the arm servo to close the switch