Methodology:

Hardwares used:

1. Nodemcu
2. Ultrasonic Sensor
3. Relay module
4. Linear actuator
5. L7805 voltage regulator
6. 12V- 2Amp power supply
7. Indicator lights
8. Viro board
9. Connecting wire

Software:

1. Arduino IDE
2. MIT App inventor
3. Web Dashboard
4. Firebase

Steps:

1. Smartbin with 2 separate containers, one for organic wastes another for plastics.
2. Using ultrasonic sensor, the bin detects the person in front of the bin. Then it opens the lid for dumping of waste.
3. Linear actuator has been used for preparing the opening mechanism.
4. Two Ultrasonic sensor attached inside the bin for both parts detects how much the bin is filled.
5. The waste level data from the bin will be sent to firebase.
6. The waste level of the bin is updated real time in the admin dashboard with the help of firebase.
7. In case of emergency, for example the bin gets filled-up before the dedicated time of unloading, the bin will send emergency signal in the admin dashboard.