Automatic Cat Litter Box
Team Litter Buster
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Why are we doing this
- Found out that the need for automatic cat litter boxes is increasing over the days.
- Most of the automatic cat litter box on the market now is too expensive for general customers. (ranging from $500-900).
- The emergency system in the litter boxes on the market are not very efficient.

Client
Busy cat-lover/owner; People who want to keep house in a clean state

Goal
• Affordable
• Safe
• Reasonable size
• Easy assembly

Software and Hardware
Language: Python
Platform: Raspberry Pi ($50), Cypress Psoc 5 ($15)

Sensors:
Motion Sensor:
SparkFun OpenPIR:
Voltage Supply Range: 3VDC to 5.75VDC
Motion-detected average current: 3mA
Working Mode: Single or Dual Pulse Detection
Price: $15.95

Pressure/Force Sensor:
SparkFun Force Sensitive Resistor:
Dimension: 3.5”x1.75”
Sensing area: 1.75”x1.75”
Force sensing range: 100g-10kg
Price: $11.25

Motor:
FS90R Continuous Rotation Servo
Operating Voltage: 4.8VDC/6.0VDC
Stall Torque: 1.3kg/cm (4.8V)/1.5kg/cm (6.0V)
Max speed: 110RPM (4.8V)/130RPM (6.0V)
Price: $14.99 (two units)

Software implementation flow chart

How the litter box works
Idle stage, all sensor initialized
- Cat left, start cleaning process
- Sand and waste entered the storage container, mesh and tray return to idle position
- Send collected clean litter back to tray
- Litter box is ready to be used again

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