# Group Coursework Presentation Slide

## CC5068NI - Cloud Computing and the Internet of Things

# Smart IoT Dustbin

Section: L2N2
Team: 1

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# Introduction

❖ Welcome to our presentation on the Waste Management IoT project.

❖ Our aim is to revolutionize waste management through the integration of IoT technologies.

❖ By leveraging sensors, cloud computing, and automation, we can create a smarter and more efficient waste management system
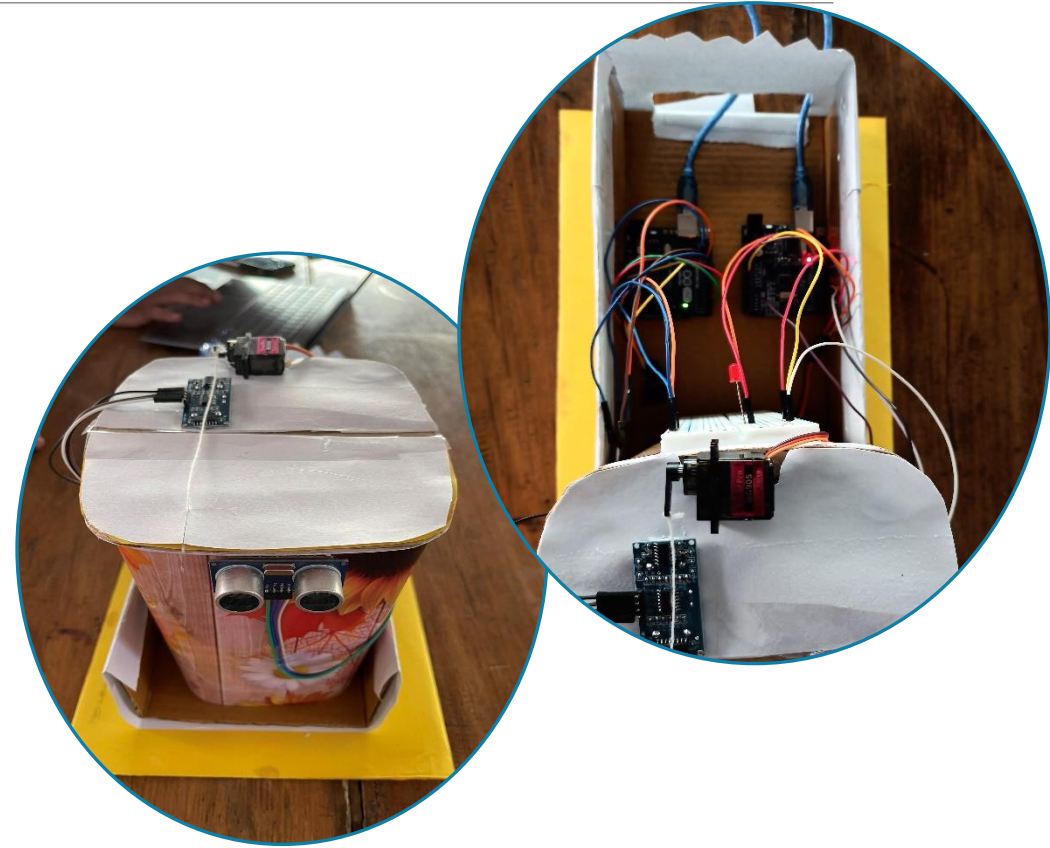
# The Challenge of Waste Management

❖ The volume of waste produced is continuously increasing in our modern civilization.

❖ Traditional waste management methods require manual monitoring and can lead to overflow and inefficiencies.

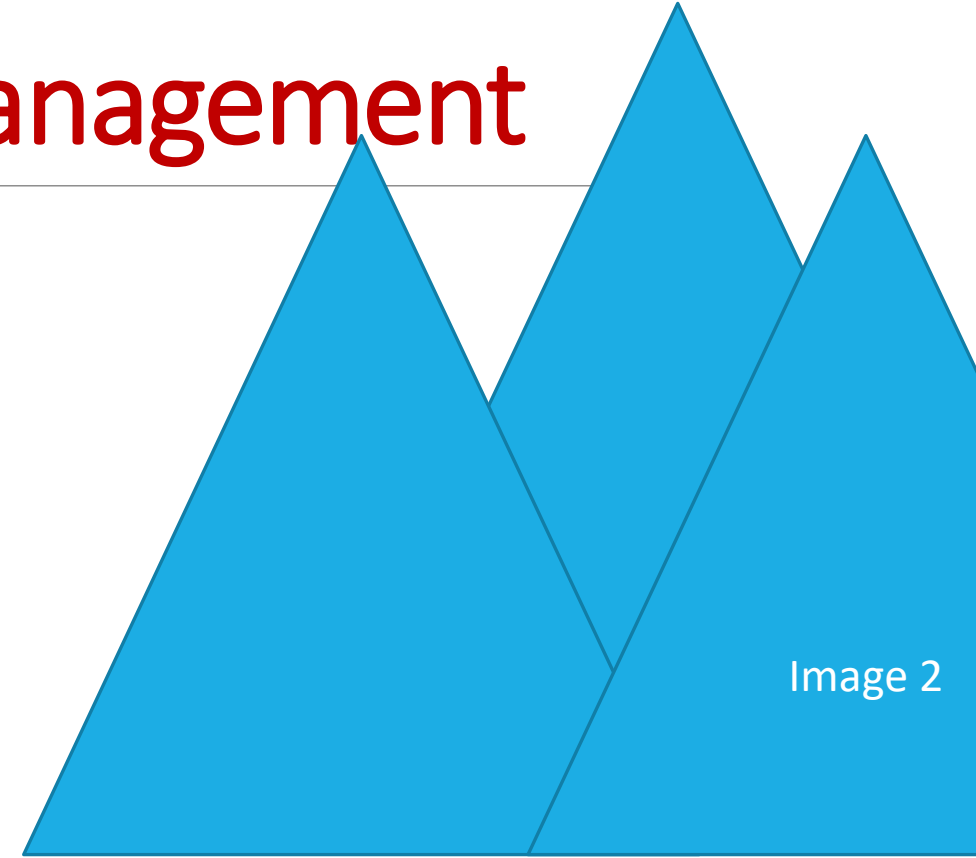❖ We need a solution that can optimize waste collection, minimize overflow, and improve resource utilization.

Image 2

# The Solution: Smart IOT Dustbin

❖ Introducing the Smart IoT Dustbin, a game-changing solution for waste management.

❖ These dustbins are equipped with IoT sensors and cloud computing capabilities.

❖ They automate waste level monitoring, lid control, and data analysis, making waste management smarter and more efficient.

# Next: Components Used

EVERY COMPONENTS USED IN OUR PROJECT

# Components Used

## Hardware

- Arduino Uno(02)

- Ultrasonic Sensor (HC-SR04)

- Servo Motor

- Breadboard

- Jumper Wire

- LED Light

- Esp8266 Wi-Fi Module

# Components Used

## Software

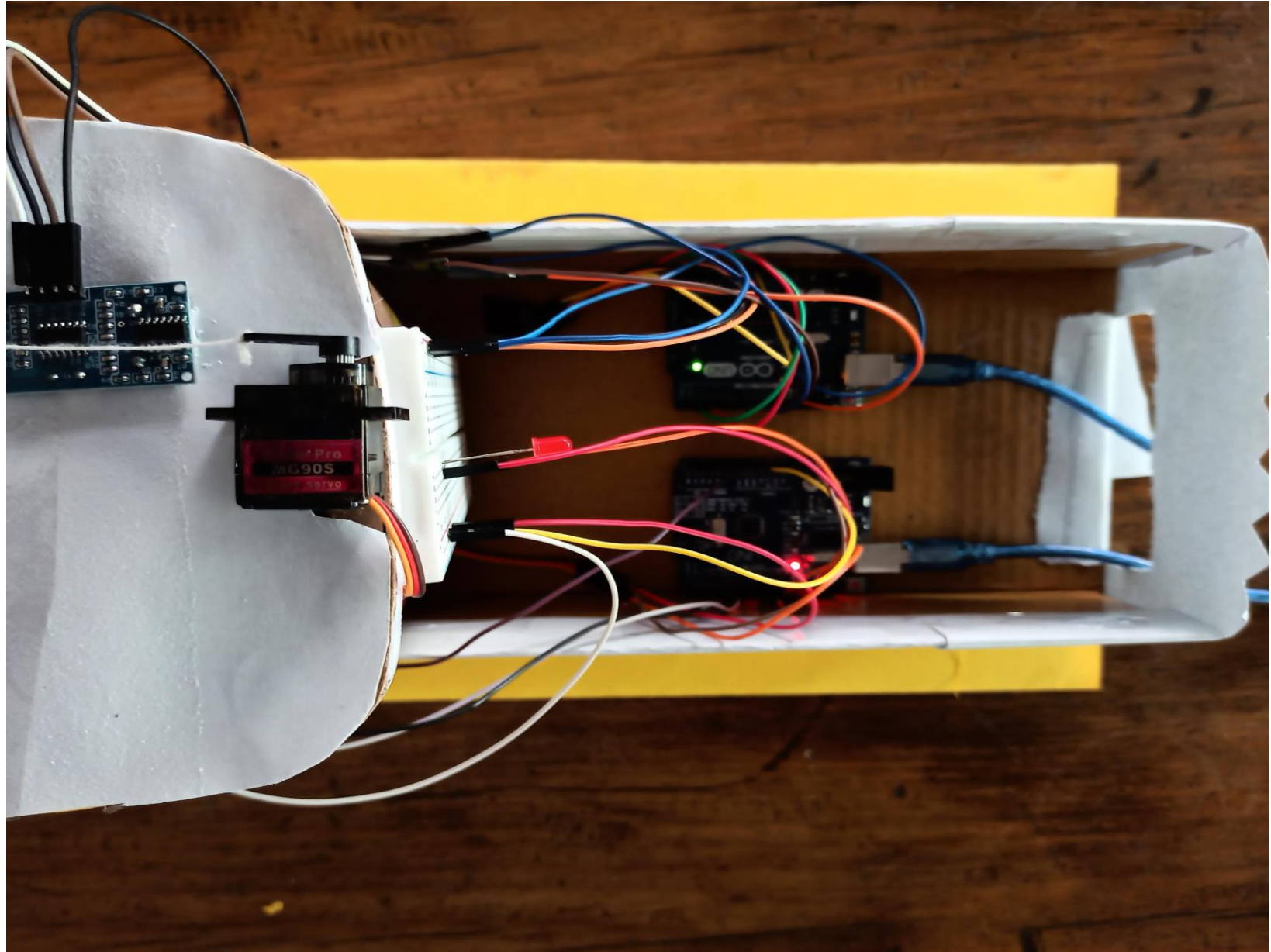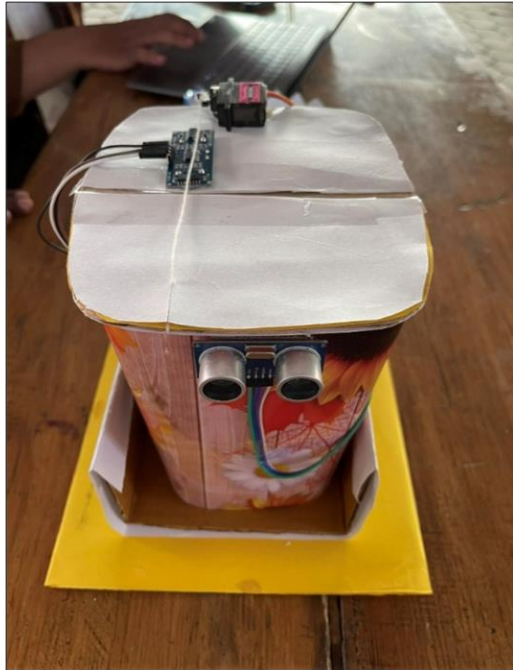- Arduino IDE

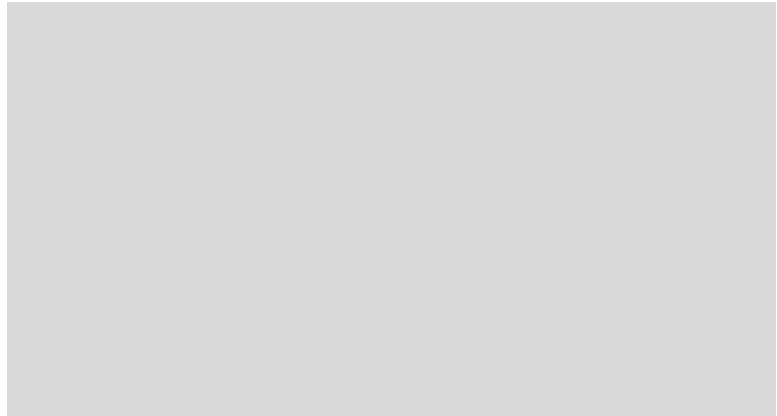- Tinker Kad
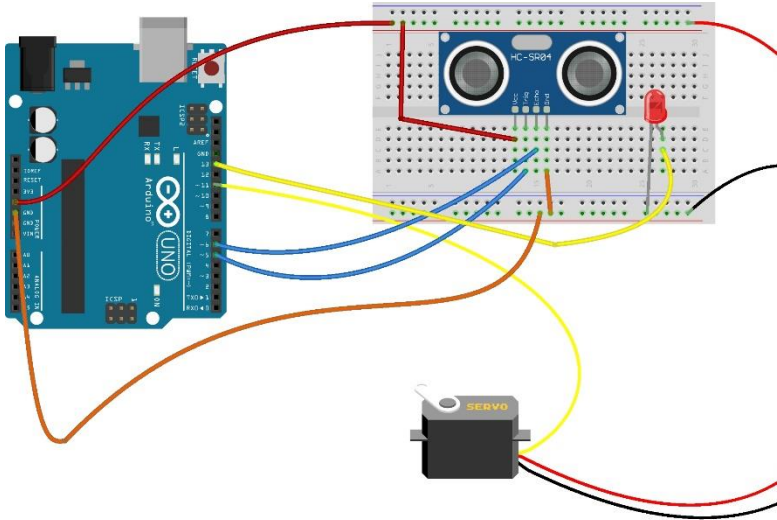
# Next: System Demonstration

WORKING MECHANISM OF OUT PROTOTYPE

# System Demonstration

Two Arduino UNOs:

➢ Opens the lid

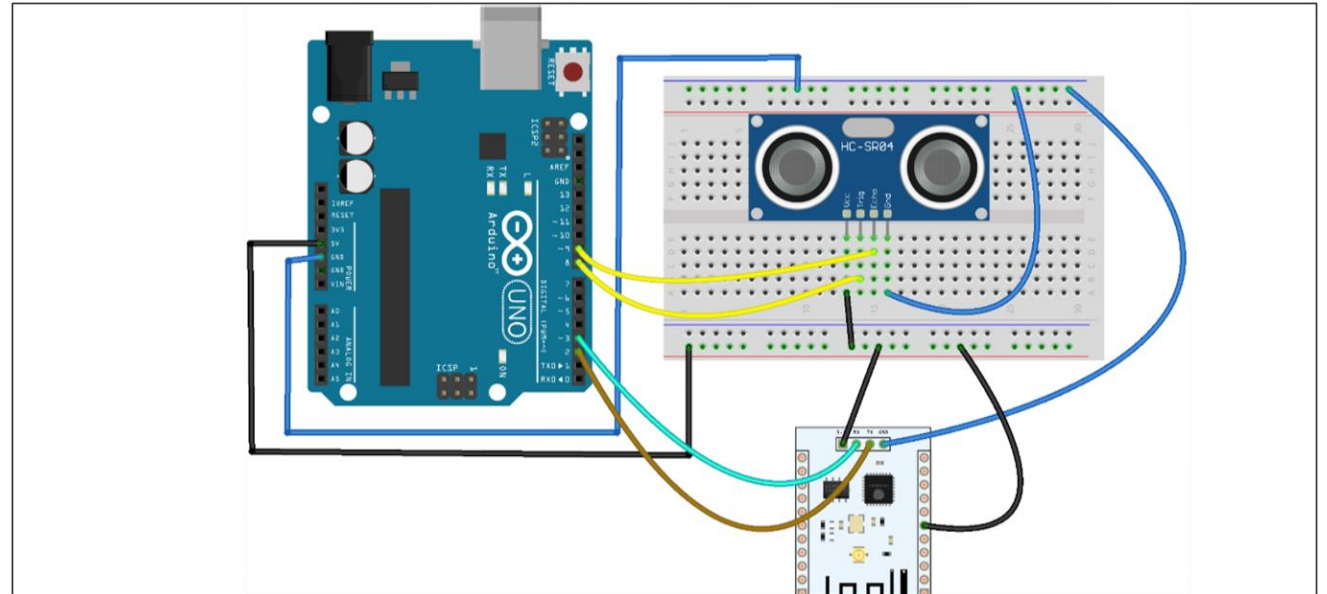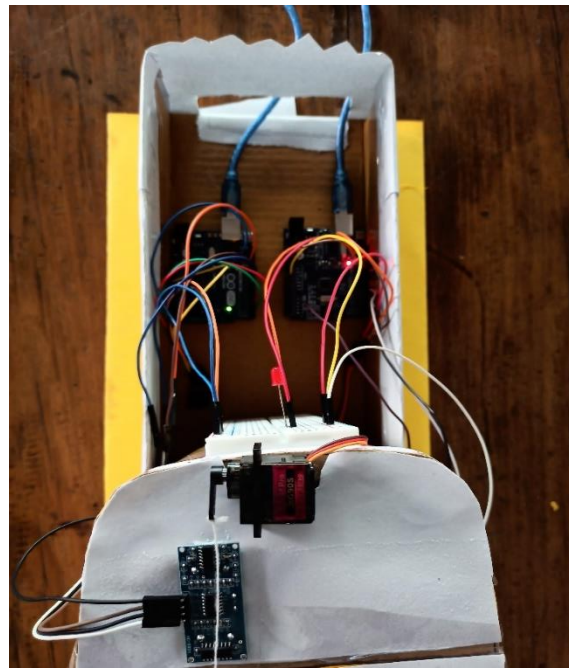➢ Sends the trash level data to the cloud

# 1st Arduino UNO

Communicates Servo Motor with 1$^{st}$ ultrasonic sensor to open the lid

# 2nd Arduino UNO

Takes the input from 2nd ultrasonic sensor and sends it to the Cloud for analysis

# Next: Benefit and Impact

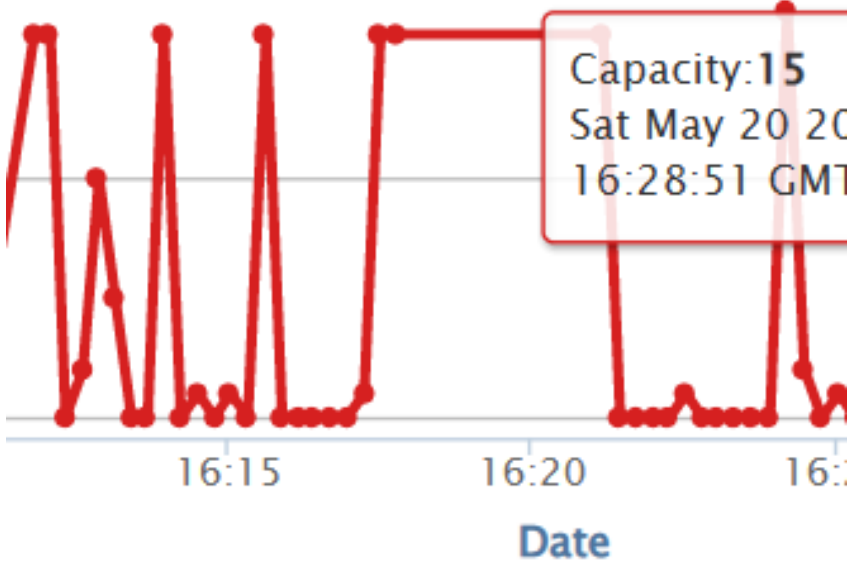SOME OF THE BENEFITS AND IMPACTS OF OUR PROTOTYPE

# Benefits & Impact Our Product

❖ The Smart IoT Dustbin project brings numerous benefits and has a significant impact some of them are listed below:

➢ Reduced human intervention: The automation provided by the Smart IoT Dustbins reduces the need for manual monitoring and collection, saving time and resources.

➢ Data-Insights: The dustbin generates the fill level which is collected in the cloud. Analysis of this data could provide useful insights into waste generation and waste management.

# Benefits & Impact Our Product



SMART IOT DUSTBIN

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❖ The Smart IoT Dustbin project brings numerous benefits and has a significant impact:

➢ Efficient waste collection: Real-time data-driven optimization of waste collection routes and schedules reduces overflow and ensures prompt waste disposal which enables waste management optimization and allows more efficient and timely collection of waste.

# Benefits & Impact Our Product

❖ The Smart IoT Dustbin project brings numerous benefits and has a significant impact:

➢ Enhanced public health: By maintaining cleaner and healthier surroundings, the Smart IoT Dustbins contribute to improving public health and hygiene.

# Benefits & Impact Our Product

❖ The Smart IoT Dustbin project brings numerous benefits and has a significant impact:

➤ Scalability, dependability, and cost-effectiveness: Cloud computing enables the project to scale easily, ensures data reliability, and offers cost-effective storage and analysis solutions.

# Next: Future Works and Conclusion

HOW THIS PROTOTYPE COULD FURTHER BE IMPROVED

# Future Possibilities
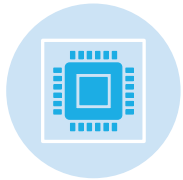
The integration of Smart IoT Dustbins with other devices and systems opens up exciting possibilities:

Sharing data with waste collection companies to optimize routes and schedules.

Providing insights to city planners for better waste management and urban planning decisions.
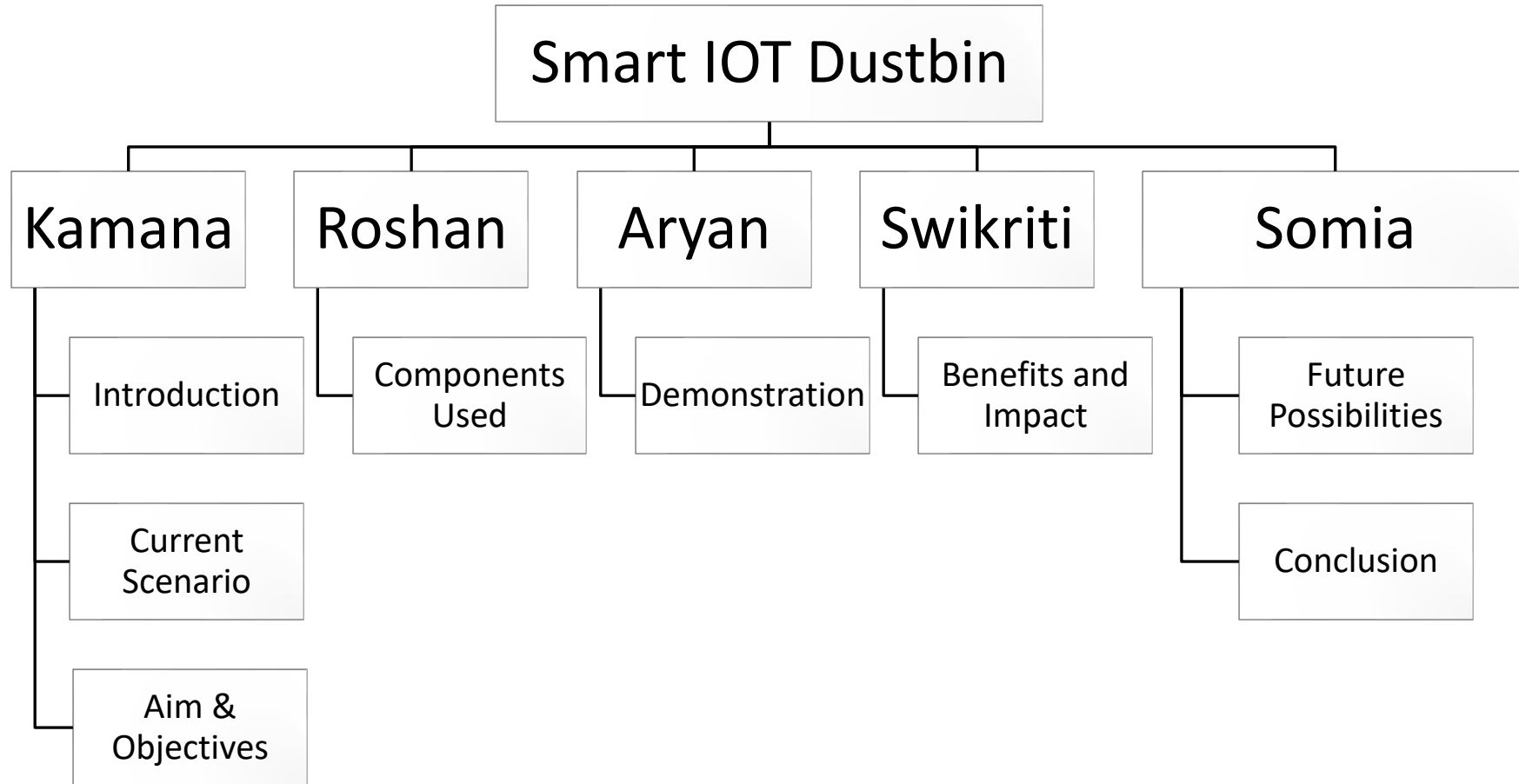
Continuous advancements and improvements based on data analysis and feedback.

# Conclusion

❖ The Waste Management IoT project presents a powerful solution for improving waste management.

❖ By embracing IoT, sensors, and cloud computing, we can create a smarter and more sustainable future.

❖ Let's work together to create a cleaner, greener, and healthier planet.

# Individual Contribution (WBS)

# Thank You