PROJECT THREE: MILESTONE 1 – COVER PAGE

Team Number: Tues-24

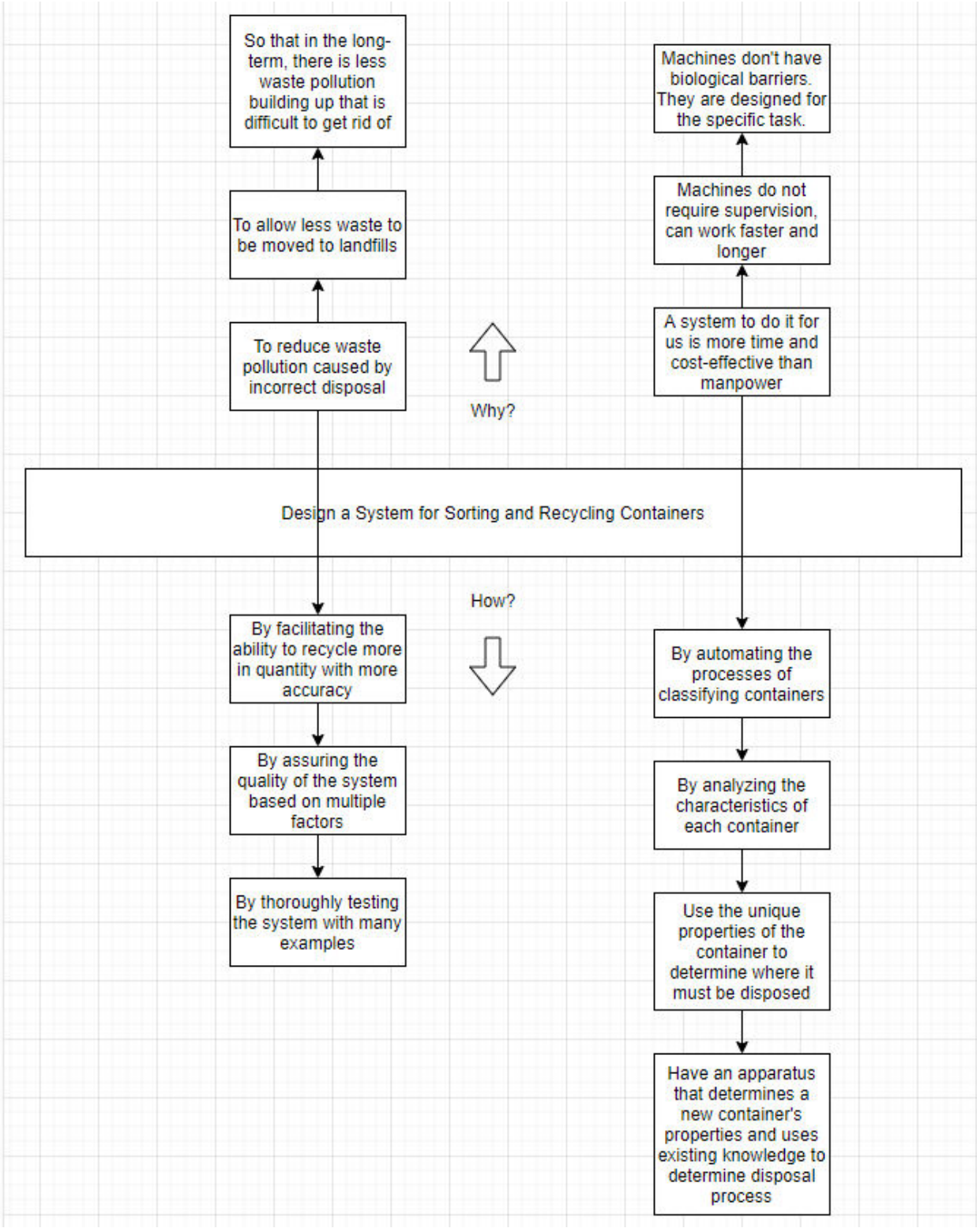
Please list full names and MacID's of all *present* Team Members

Full Name:	MacID:
Ehsaan Khan	khane16
Borna Sadeghi	sadegb1
Amir Rayyan Khan	khana344
Zhenyu Zhao	zhaoz154

MILESTONE 1 (STAGE 1) – WHY/HOW LADDERING

Team Number: Tues-24

1. Document both your conversation and a refined visual on a separate sheet of paper
2. Take a photo of both your rough work and refined visual
3. Insert each photo as a Picture (Insert > Picture > This Device)
4. **Do not include more than one Picture per page**


So that in the long-term, there is less waste pollution building up that is difficult to get rid of
To allow less waste to be moved to landfills
To reduce waste pollution caused by incorrect disposal
Why?
Machines don't have biological barriers. They are designed for the specific task.
Machines do not require supervision, can work faster and longer
A system to do it for us is more time and cost-effective than manpower
Design a System for Sorting and Recycling Containers
How?
By facilitating the ability to recycle more in quantity with more accuracy
By assuring the quality of the system based on multiple factors
By thoroughly testing the system with many examples
By automating the processes of classifying containers
By analyzing the characteristics of each container
Use the unique properties of the container to determine where it must be disposed
Have an apparatus that determines a new container's properties and uses existing knowledge to determine disposal process

MILESTONE 1 (STAGE 2) – LIST OF OBJECTIVES AND CONSTRAINTS

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As a team, create a list of objectives and constraints in the table below. The exact number you should have depends on what information you have gathered from the Project Pack as well your previously completed needs hierarchy.

Objectives	- Device should be able to identify all types of container materials - Device must be able to classify containers as recyclable or non-recyclable - Arm should be able to grasp all types of containers - Q-bot should be able to collect containers from arm - Q-bot should deposit containers into the correct bin - Hopper must be able to mount to a base plate on top of the Q-bot - Arm must be able to place any container into the hopper - The design of the hopper should allow the actuator to move it
Constraints	- Size of the hopper is small enough to fit on the base plate - Size of the hopper is large enough to fit all types of containers - The Q-bot hopper should be able to carry more than 90 grams - Hopper must be cost-effective to develop

MILESTONE 1 (STAGE 3) – REFINED PROBLEM STATEMENT

Team Number: Tues-24

Initial Problem Statement

1. Write the initial problem statement in the space below. This will have been defined in a previous lecture, prior to your scheduled Design Studio.

Design a system for sorting and recycling containers.

Who needs *what* because *why*?

Refined Problem Statement

2. Write the refined problem statement below. Kindly refer to the Refined Problem Statement rubric provided on Avenue (see P3 Rubrics). This will guide your group in creating a valid statement.

Improper recycling processes could lead to a detrimental effect on the environment as waste becomes misplaced, so the recycling process of materials must be made more accurate, fast, and efficient.