PROJECT THREE: MILESTONE 1 – COVER PAGE

Team Number: Thurs-22

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

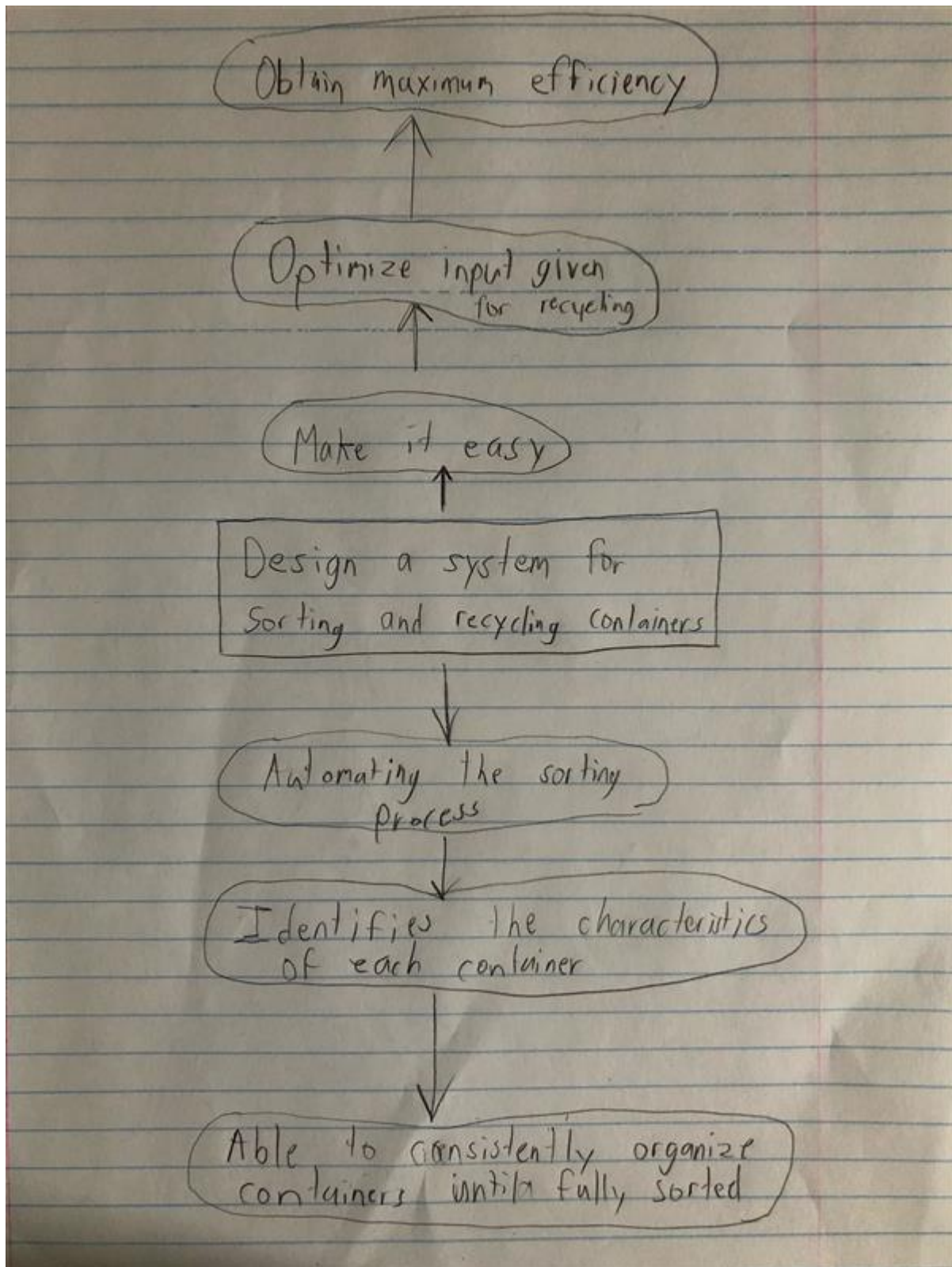| Full Name:	MacID:
Pratha Bhat	bhatp3
Vaisnavi Shanthamoorthy	shanthav
Nolan Roney	roneyn1
Armon Bal	bala
Jiayue Zhu	zhu3

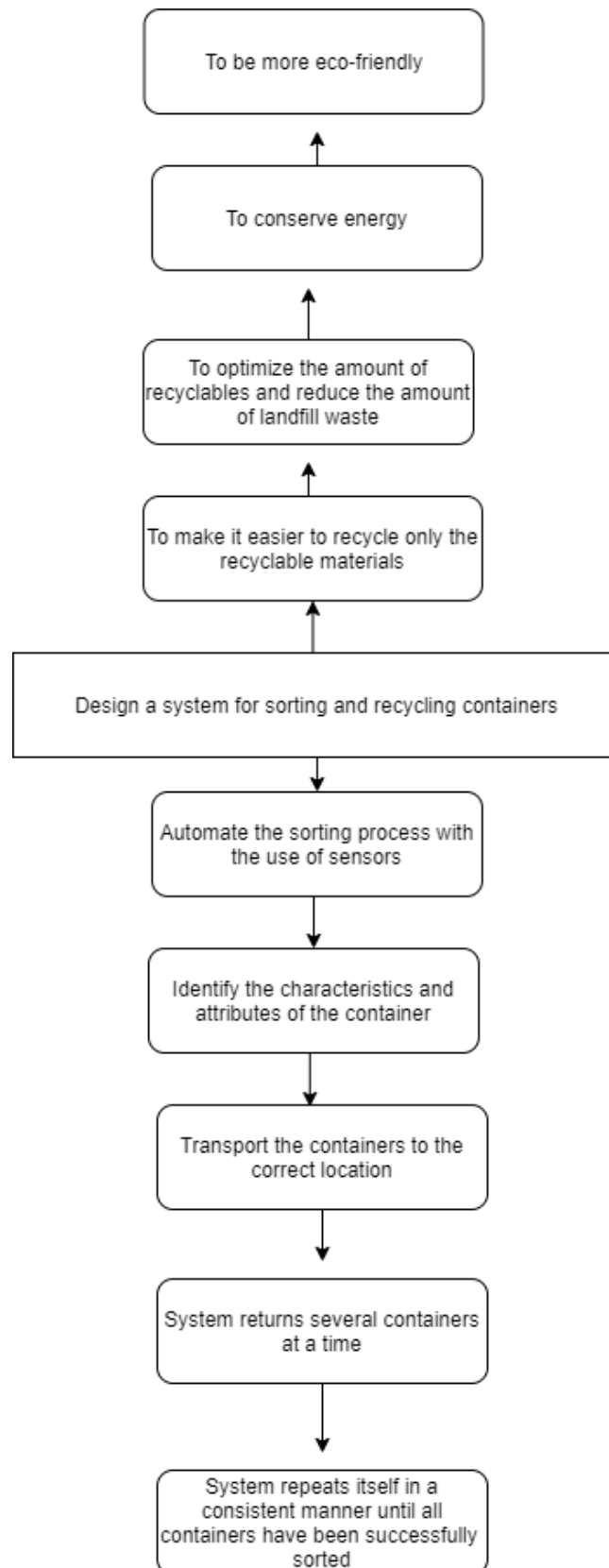Team Number: | Thurs-22 |

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. **<u>Do not include more than one Picture per page</u>**

*Both the rough copy and the refined visual of the Why/How Ladders can be found on the next two pages

Rough Work of the Why/How Ladder:

```
        ┌──────────────────────────────┐
        │  Obtain maximum efficiency   │
        └──────────────────────────────┘
                      ↑
        ┌──────────────────────────────┐
        │  Optimize input given        │
        │           for recycling      │
        └──────────────────────────────┘
                      ↑
        ┌──────────────────────────────┐
        │      Make it easy            │
        └──────────────────────────────┘
                      ↑
        ┌──────────────────────────────┐
        │  Design a system for         │
        │  Sorting and recycling       │
        │  Containers                  │
        └──────────────────────────────┘
                      ↓
        ┌──────────────────────────────┐
        │  Automating the sorting      │
        │           process            │
        └──────────────────────────────┘
                      ↓
        ┌──────────────────────────────┐
        │  Identifies the characteristics │
        │  of each container           │
        └──────────────────────────────┘
                      ↓
        ┌──────────────────────────────┐
        │  Able to consistently organize │
        │  containers until fully sorted │
        └──────────────────────────────┘
```

Refined Visual of the Why/How Ladder:

To be more eco-friendly

↑

To conserve energy

↑

To optimize the amount of recyclables and reduce the amount of landfill waste

↑

To make it easier to recycle only the recyclable materials

↑

Design a system for sorting and recycling containers

↓

Automate the sorting process with the use of sensors

↓

Identify the characteristics and attributes of the container

↓

Transport the containers to the correct location

↓

System returns several containers at a time

↓

System repeats itself in a consistent manner until all containers have been successfully sorted

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

Team Number: | Thurs-22

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	- Should be easy to use - Should be able to securely hold the containers in place - High storage capacity - Successfully able to deposit containers - Navigate all pathways and stations successfully
Constraints	- The device must hold at least three containers - Sensor can sort containers based on characteristics (material, mass, etc.) - Total mass of the containers picked up at once cannot exceed a mass of 90 grams - The device must deposit the containers into the recycling bins

MILESTONE 1 (STAGE 3) – REFINED PROBLEM STATEMENT

Team Number: | Thurs-22

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

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.

Refined Problem Statement: Improve means of recycling items by designing a system for sorting recyclable and non-recyclable containers based on their characteristics in order to be more eco-friendly by reducing the number of recyclables that end up in landfills.