Questions:
What is your team's (code)name?
URStreamSight

List the members of your team (one on each line; first name, last name format)
Raymond, Knorr
Avery, Cameron
Noah, Rowbotham

Provide your team's GitHub link (ensure your GitHub is publically accessible)
Project Repos (https://github.com/URStreamSight)
Documentation Website (https://urstreamsight.github.io/)

Provide the main vision, idea, area (etc.) of your project (e.g. A calendar app). Try to keep it brief (1-2 sentences at most)
A tool, paired with a waste collection truck, that classifies the recyclables and non-recyclables dumped into the vehicle. Therefore creating the possibility to measure the amount of contaminants (non-recyclables) present in the recycling at a household level.

Provide a deeper rationale of your team's project - your team's "golden circle" the why, how, and the what of it all (recall: Simon Sinek, Golden Circle) (Go a little deeper then your project description, 3-6 sentences)
WHY
Citizens around Canada are confused regarding what proper recycling is. This costs millions of dollars in processing fees and lost revenues. By providing a method of measuring contamination from households, municipalities can begin targeting the issue at its source and begin providing individuals with contextual feedback to improve their recycling habits.

HOW
A tool that operates within waste collection vehicles could classify recyclables and non-recyclables on a bin by bin basis. By understanding how much non-recyclables were present in a bin, the quality of the recycling can be quantified. This data can then be used within Prairie Robotics' full suite of tools to provide municipalities with audits of individuals recycling quality.

WHAT
A computer and camera system installed within a waste collection vehicle will act as an input to capture data. Our API will process and store the images before being fed to a classification model. The model will determine the quantity of recyclable and non-recyclable items present within that load. This score will ultimately be used by Prairie Robotics to create metrics for municipalities and individual households.

Describe the business need or opportunity (innovation) that your team envisions, i.e. how will your team's completed project (positively) advance society through software technology? (think 1-2 paragraphs, 8-12 sentences)

Waste and recyclables are the last public utility to be metered. There is currently no technology that allows municipalities to measure the quantity or quality of waste and recyclables at the household level, while ensuring the households privacy remains intact. Furthermore, our recycling streams are so contaminated that Canadians not only pay exorbitant processing fees but also miss out on potential revenues from processing high-quality recycled material. In Regina, it was found that contaminated recycling incurred an additional $190 000 paid in processing fees [1]. REACT, who manages waste streams for several rural centers in Saskatchewan, transitioned from receiving $55 per ton of recycling in 2012, to paying $284 per ton in 2019. This change largely influenced a 59% increase in program fees that REACT applied to households living in these communities [2].

Our application will integrate with Prairie Robotics' existing waste management tools. Prairie Robotics' final management tool will allow municipalities to meter recyclables, incentivize better recycling habits, provide targeted education to problem neighborhoods and reduce processing fees. By producing cleaner recycling at the source we create the space for local industry to process the recycling within Saskatchewan thereby keeping the profits within our province. Our project only aims to provide a means of collecting and processing data per residential bin. The value to society is indirectly obtained from Prairie Robotics using our tool.

[1] Adam, Derek “City of Regina Curbside Education” presented at Waste Reforum 2020, 16 July 2020

[2] Wrubleski, Maury. “REACT Says Fee Increases Due to Various Factors.” DiscoverHumboldt.com, 19 Dec. 2019,discoverhumboldt.com/local/react-says-fee-increases-due-to-various-factors.

Notes:
Customer base:
The company (Prairie Robotics)
The public
Questions:
How do you visualize the data?
Simple website but Prairie Robotics will deliver the finished product how they want to the municipalities
We will have an API and have a basic interface for display
Tim: Be wary of the difference between Software Engineering and Computer Science. Talk about testing, correct & incorrect, it might just be a dummy interface but keep it open. They will do what they will do in the end but the front facing end is important
Noah: We want a finished product to display and then let them do what they want with it.
There will be a lot of requirement analysis.

Tim: Make a video of this, talk about the background, technologies, the roles that you might be working on individually

Avery: We should make sure they see that the backend is software engineering and the systems that are involved. The system and development of it is still software engineering, even if it does not have a prominent front-end.