Cover page

Project title: Greeny Academic Year: 2022/2023

Group Members: Khalid Ahmad Jabr Department Name: Computer Engineering

Noor Khader Braik

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Project Type Hardware

Supervisor Name: Dr. Manar Qamhieh

Format:

- Single space, Times New Roman.
- 12 pt,
- Maximum 1 page.

Abstract Body:

Items must be provided in the Abstract:

- Why do you think this project is important? Please explain the significance of this Project in brief.
- In your point of view what are the important aspects that should be covered in the project?
- Objective(s): In your view, please explain the main objectives of the project.
- Methodology: Give a brief outline of the application development process.
- Had this project been done before? Are there any similar applications available today?
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- **Note:** Please deliver this abstract early to ensure that your Project has been approved by the department's projects committee. **Registration will not be done without this approval.**

Project's Abstract:

With more waste being produced every day, the globe is currently experiencing a growing waste management dilemma. Not only does this add to environmental pollution, but it also endangers both human health and wildlife welfare. It's essential that we create fresh, inventive approaches to trash management if we're to successfully solve this issue.

The necessity to find a solution to the issue of improper and ineffective waste management techniques served as the inspiration for the "Keep It Green" project. The project intends to improve the efficiency and accuracy of trash management by classifying waste into groups including plastic, and glass using machine learning, also it provides a point system depending on the waste the user has dropped. The user will receive points once he gets authorized by scanning his unique QR code, or entering a unique ID. By allowing for the correct recycling of various waste kinds, this not only benefits the environment by lowering the quantity of garbage that ends up in landfills but also encourages sustainability.

In essence, the system asks the user to scan his QR code or enter his unique ID using a keypad when the distance between him and the basket is less than half a meter. After the user has logged in, the basket will open so the user can throw the garbage and then the system will scan it using a camera, and process the image using raspberry pi to classify it in order to direct the garbage to the appropriate basket. Based on the classification result, a specific group of points will be added to the user account. Moreover, the system will keep users informed of the status of the baskets, including the capacity of each basket, which will be measured using a weight sensor and displayed on LCD. Also each basket will have a unique ID so if it becomes full it will send a notification or update it's status using an esp32 so it gets empty ASAP.