GNG 1103

Deliverable F

Project Plan and Cost Estimate

Group #10

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Introduction

In this lab report, we will discuss our progress for prototype 1. In the first section, we will look at an overview of the reverse image search app. The purpose of this section is to demonstrate that we are able to do reverse image search using In the second section, we will discuss the creation of the camera app. The purpose of the application is to show that we are capable of accessing the user's camera.

1 Reverse Image Search

By using Google Cloud Vision for Unity, GCVU, an asset from the Unity Asset Store. The Asset allows the team to make use of the power of Google Image Reverse Search. Google provides developers with 300$ USD of free image reverse search credit. However, Google will not even begin using this free credit unless the team does more than 1000 searches in a month. Thus, the team does not anticipate ever making use of the free credit Google has provided. The GCVU asset cost 26.44$ (equivalent of 20 USD). The team still has 73.56$ remaining of the budget allocated for the class.

GCVU provides the team with an API that will be used to implement the reverse image search in the application. It was tested by the team using five images. We tried a couple types of branded plastic, and were able to identify either the brand or what the item was (see the top two images in figure 1). We tried two more pieces of plastic – one see through and another opaque. The see through one was identified as plastic by Google's engine. For the opaque one, Google was only able to return the brand of the item in question. Finally, an unbranded box was tried. This resulted in Google returning properties like "product design" and "mathematics". It is clear that google's system struggles to identify generic things like monochromatic boxes and cylinders, which may be problematic in the future when trying to identify specific items.

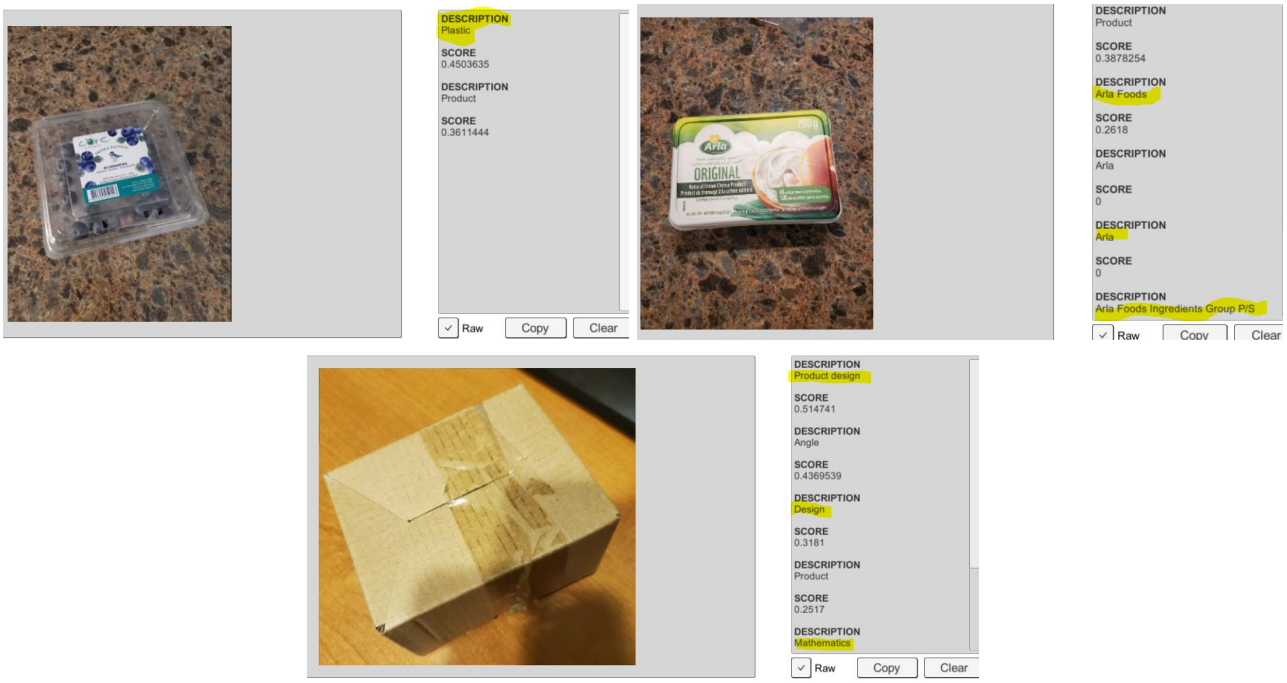

Figure 1 - [Top left] Chocolate mild test [Top right] Peanut butter text [Middle left] Plastic blueberry container [Middle right] Branded plastic test [Bottom] Cardboard box test

2 The Camera App

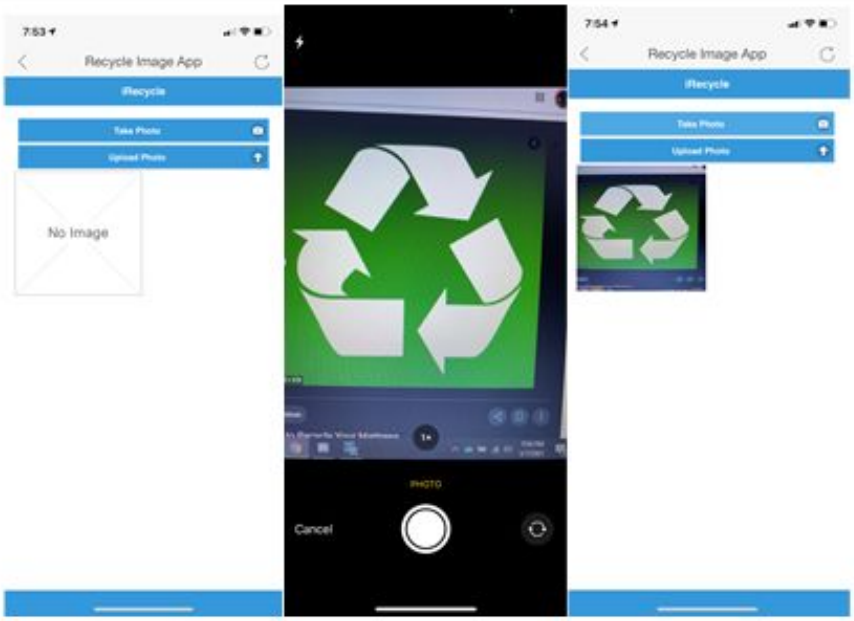

Figure 2 - (a) (b) (c) - Shows the user interface of the application for camera app prototype

This simple prototype shows a basic sample of the application that we are trying to configure. User will start the application then a screen with two options will pop up. The two options as shown above are upload an existing image or take an image. Then after the user decides what more convenient the image will be added to the application which will then be processed to which at a certain point the user will receive recycling related information about the image (type of product and recyclable bin option).

What To Expect for Prototype 2

In the next prototype, we plan to mesh the parts outlined in this document together. Furthermore, we will use the JSON formatted data returned by Google Cloud Vision to figure out what is in the image and whether or not it is recyclable. We do not expect this product to meet the client's 95% standard in terms of reverse image search, though we may be able to increase the probability of the app producing the correct answer with the help of the Akinator method. The Akinator method will be featured in prototype 2.

Thus, prototype 2 will perform as shown in the figure below. However, the app's user interface may not be complete at this stage and it may be a barebones version of the process illustrated below.

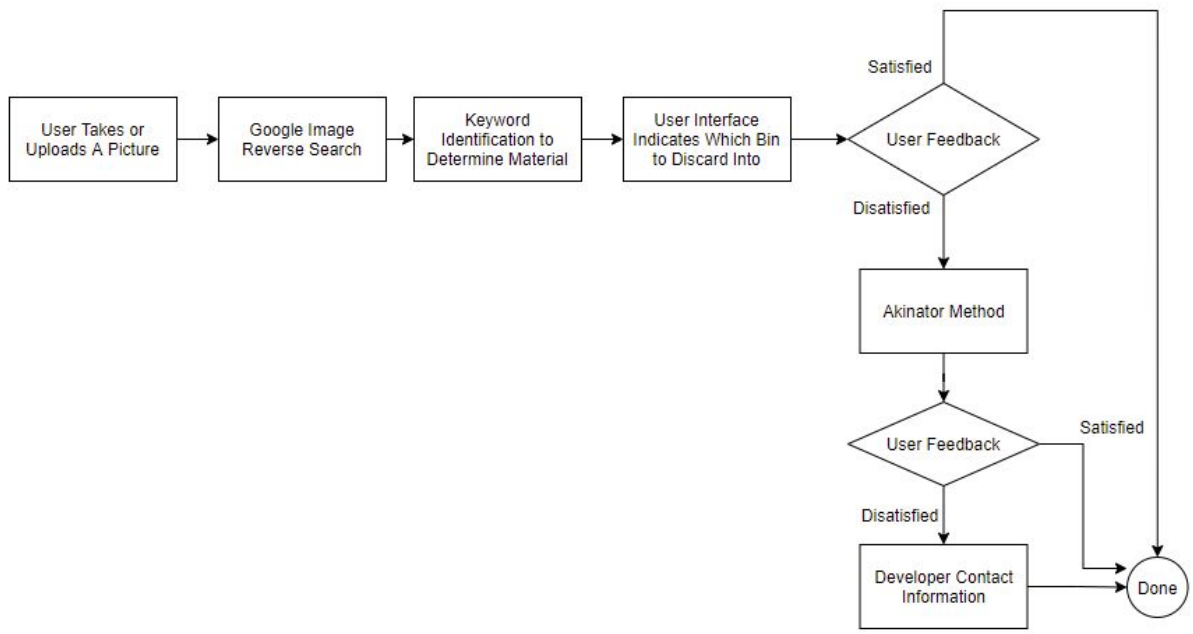

Figure 3 - How the second prototype will operate