**P1 Software Design Document**

***Introduction***

Our purpose in writing this program is to evaluate the refresh rate of the camera that we will later use to control the camera function of the create and regular robots. This function will enable us to grab the tribbles and gain an additional advantage on the playing field.

The program will make use of the camera sensors only. No additional sensors will be used.

***Program Objectives***

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| **Objectives** | **Priority** |
| 1.) Enable camera to sense the specific amount of tribbles in the parameter and analyze the number of blobs in the area | 2 |
| 2.) Recognize different colored blobs and enhance the ability to sort the green and orange tribbles | 1 |
| 3.) Repeat the sensing function multiple times and use the program in conjunction with the specific robot’s code | 3 |
| 4.) Place the sensor on the robot and find the best spot for the sensor | 4 |

The priority is listed from levels 1 to 4, with 1 being most important/urgent and 4 being least important/not urgent.

Being able to recognize different colored blobs is most important because without knowing what color the tribbles are, then we can’t do anything else. On the other hand, placing the sensor is very minor and takes less than 5 minutes.

**Objective 1**

In order to complete this task, the program will need to:

1) Have a while loop that updates the camera every second (just an example)

2) Get how many objects there are by using a function (get\_object\_count()) with the color channel put inside the function

We will need to have many custom color channels preset before the match in order to have sufficient results.

**Objective 2**

In order to complete this task, the program will need to:

1. Program the camera to use the blob-sensing program in objective 1
2. Have the program be able to customize the color channel