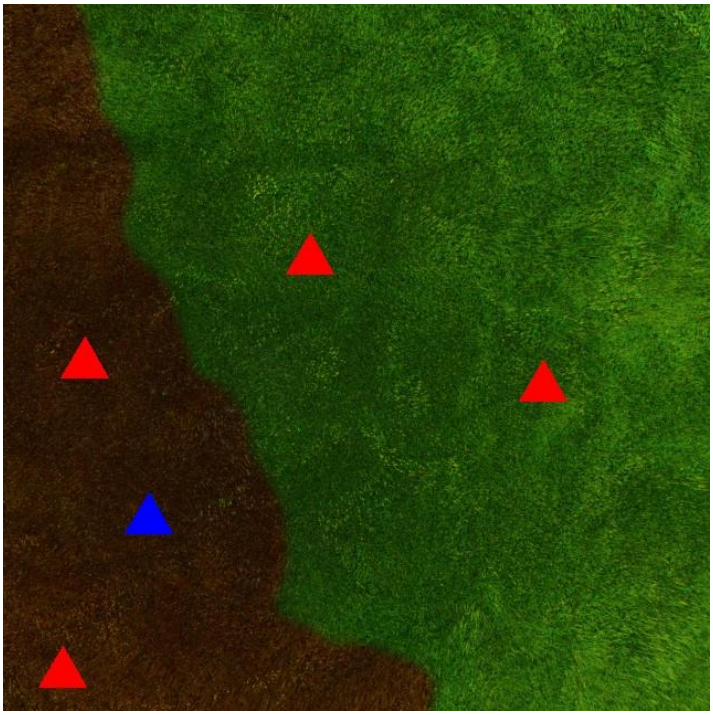
Task

The theme for this task is Search and Rescue. A fire has broken out in a civilian area and your job is to gather information about the location of houses and buildings in the area. Your UAV is collecting images of the search area that look like the sample image given below.

Information about the input image

- The brown area is burnt grass
- The green area is unburnt (green) grass
- The blue and red triangles are houses
- Each house colour has an associated priority
- Blue house have a priority of 2
- Red houses have a priority of 1



Sample Image

The task for you is to return the following information from the image

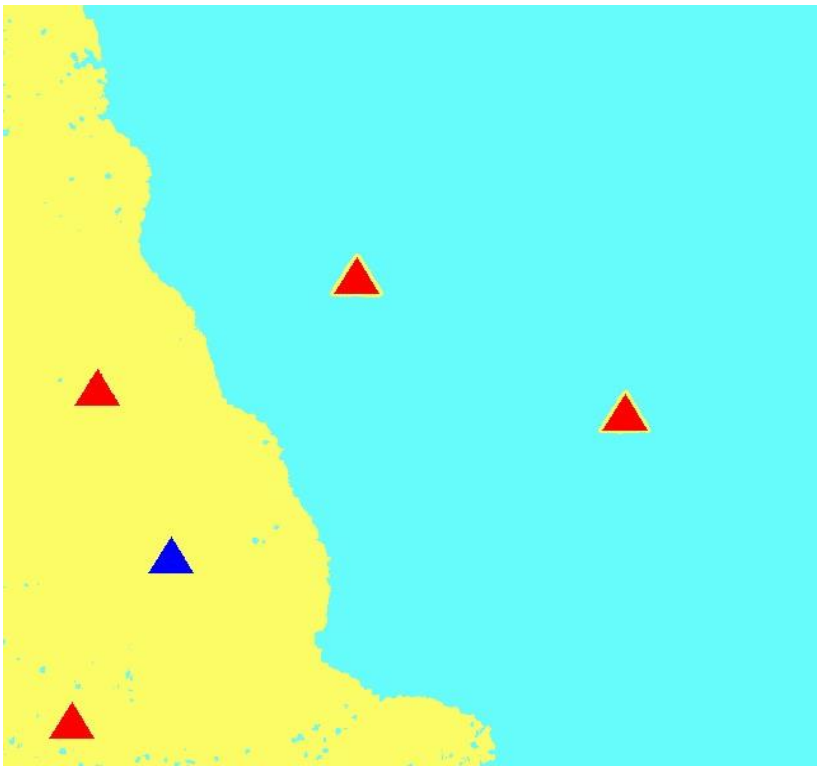
Input

A list of 10 images, similar to the sample image provided above

Expected Output

1. An output image, for each input image, that clearly shows the difference between the burnt grass and green grass, by overlaying 2 unique colors on top of each. The expected output for the given sample input is given below
2. The number of houses on the burnt grass (H_b) and the number of houses on the green grass (H_g), saved in a list
3. The total priority of houses on the burnt grass (P_b) and the total priority of houses on the green grass (P_g), saved in a list
4. A rescue ratio of priority P_r where $P_r = P_b / P_g$, saved in a list
5. A list of the names of the input images , arranges in descending order of their rescue ratio (P_r)

The expected output for the given sample image is given below:



Sample output

2. [[3,2]] (There are 3 house on the burnt grass and 2 houses on the green grass)
3. [[4,2]] (Priority of houses on burnt grass = 2x1 + 1x2 = 4 (two red houses and one blue house) and priority of houses on green grass = 2x1 = 2 (two red houses))
4. [2] (Ratio of priority is 4/2 = 2)
5. [image1, image3, image4….. etc] (this is based on the priority ratio of the various images given as input) **(not related to the given sample image)**

Example:

Input images

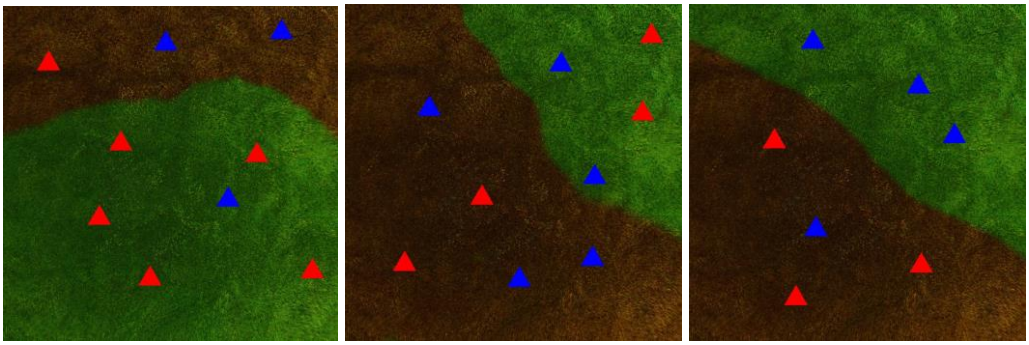


image1 **image2** **image3**

Expected Output

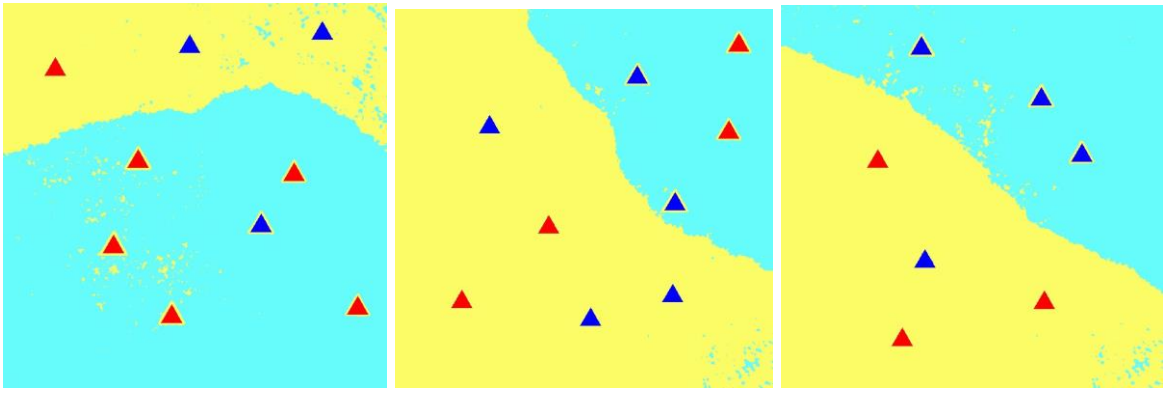


image1 **image2** **image3**

n_houses = [[3,6],[5,4],[4,3]]

priority_houses = [[5,7],[8,6],[5,6]]

priority_ratio = [0.71,1.33, 0.83]

image_by_rescue _ratio = [image2, image3, image1]

To simplify the given task, we've given a step-by-step approach to learn various concepts and libraries that are required to complete the task