



Highly Commended

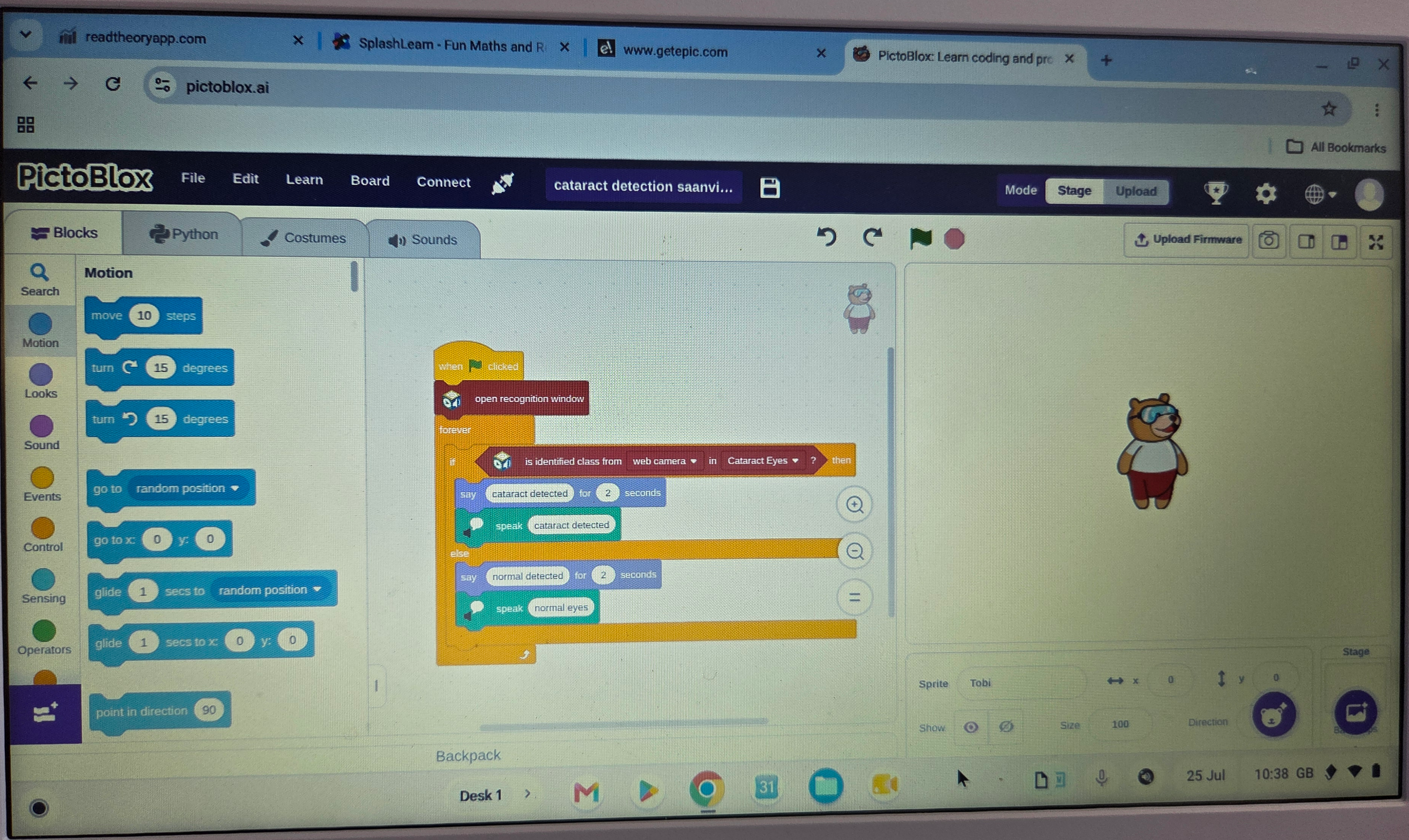
Programming, Apps & Robotics

Year 3 - 4

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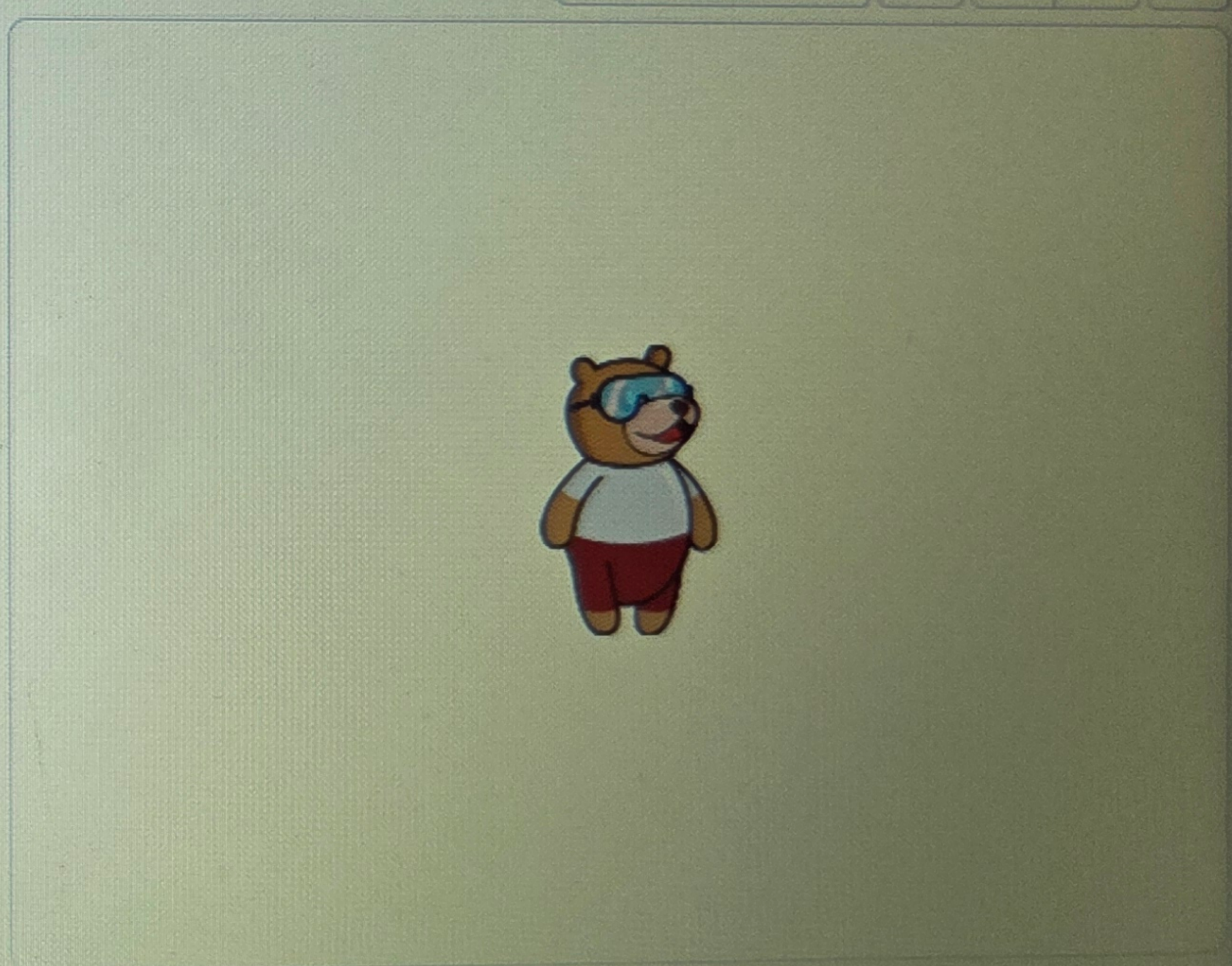




Motion

- move 10 steps
- turn 15 degrees
- turn 15 degrees
- go to random position
- go to x: 0 y: 0
- glide 1 secs to random position
- glide 1 secs to x: 0 y: 0
- point in direction 90

```
when clicked
  open recognition window
  forever
    if is identified class from web camera in Cataract Eyes ? then
      say cataract detected for 2 seconds
      speak cataract detected
    else
      say normal detected for 2 seconds
      speak normal eyes
```



Sprite Tobi

Size 100

Direction

Cataract Detection System

By Saanvi Modi, Year 3 – East Marden Primary School

1. Project Overview

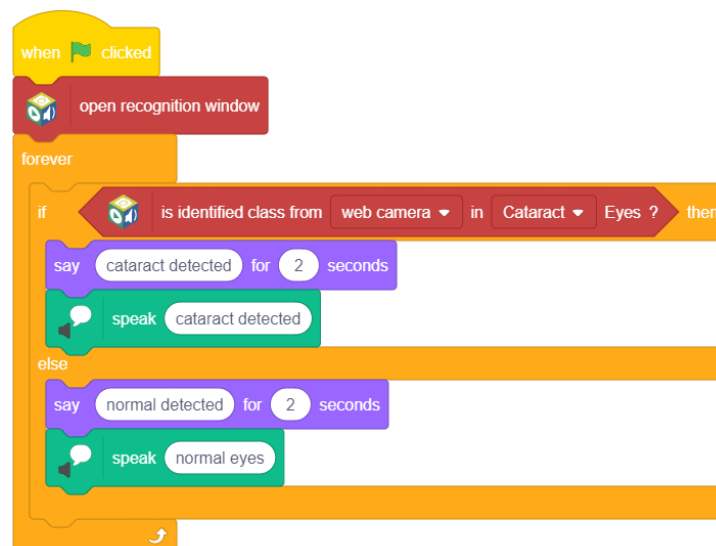
I built a simple program that can tell if a person's eye is healthy or has a cataract. The program uses a webcam to look at an eye image and then says out loud "healthy eye" or "cataract detected." It can help people get an early warning about eye health problems.

2. Tools and Data

Eye Images: I used an open-source dataset of eye photographs from Kaggle (kaggle.com/datasets/jr2ngb/cataractdataset). It has many photos of healthy eyes and eyes with cataracts.

Teachable Machine: I trained a model with hundreds of these pictures. I made two groups: healthy eye and cataract eye.

PictoBlox: I used this block-coding software to load my model from a web link. PictoBlox's machine-learning blocks helped me connect the model to my program.



3. How It Works

1. A photo of an eye is shown to the webcam or uploaded into the program.
2. The model looks at the image and decides whether the eye is healthy or has a cataract.
3. The program speaks the result through the computer's speaker so anyone can hear it.

4. Results

The detector was correct more than 90 out of 100 times in my tests. It spoke the result clearly so that the person being tested can understand what the model found.

5. Impact and Future Ideas

This tool can help people in remote areas get an early warning about cataracts before visiting a doctor.

In the future, I want to add more eye conditions like glaucoma and diabetic retinopathy.

I also plan to make a phone app so people can use it on the go.

6. Conclusion

This project combines easy-to-use tools with smart learning to solve a real health problem. I had fun learning about machine learning and coding. My father helped in searching for the eye disease database and in using Teachable Machine. Thereafter, I did the coding part myself. I hope this tool helps many people detect cataracts early and protect their eyesight.