CSCI – 585 DATABASE SYSTEMS

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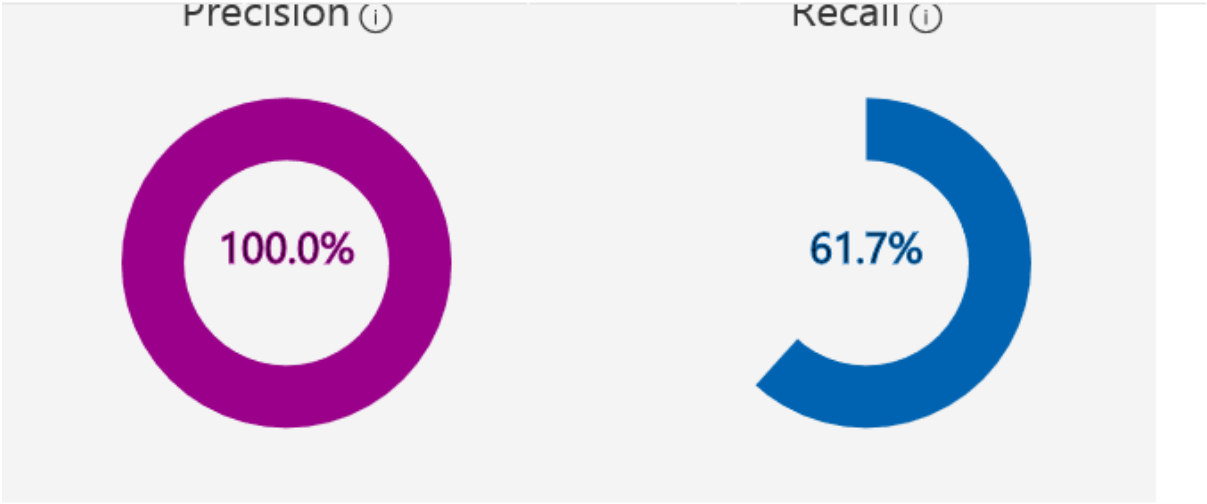
Homework 4

Part1: The Screenshot of:

a. Performance result for Iteration1:



Performance Per Tag

Tag	Precision	Recall
Cat	100.0%	83.3%
Dog	66.7%	38.9%

b. Prediction result for Iteration 1:

1. Dog – Correct Prediction.

Predictions

Tag	Probability
Dog	82.2%
Cat	0.1%

2. Cat – Correct Prediction.

Predictions

Tag	Probability
Cat	54.5%
Dog	0%

3. Dog – Correct Prediction.

bmp
File size should not exceed: 4mb

Predictions

Tag	Probability
Dog	57.6%
Cat	0%

4. Cat – Incorrect Prediction.

bmp
File size should not exceed: 4mb

Predictions

Tag	Probability
Cat	0%
Dog	0%

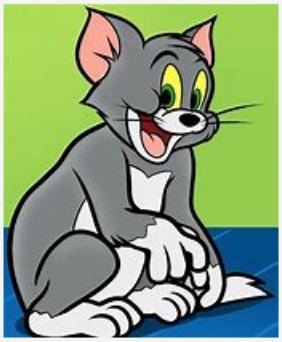
5. Dog – Incorrect Prediction.

bmp
File size should not exceed: 4mb

Predictions

Tag	Probability
Dog	0%
Cat	0%

6. Cat – Incorrect Prediction.



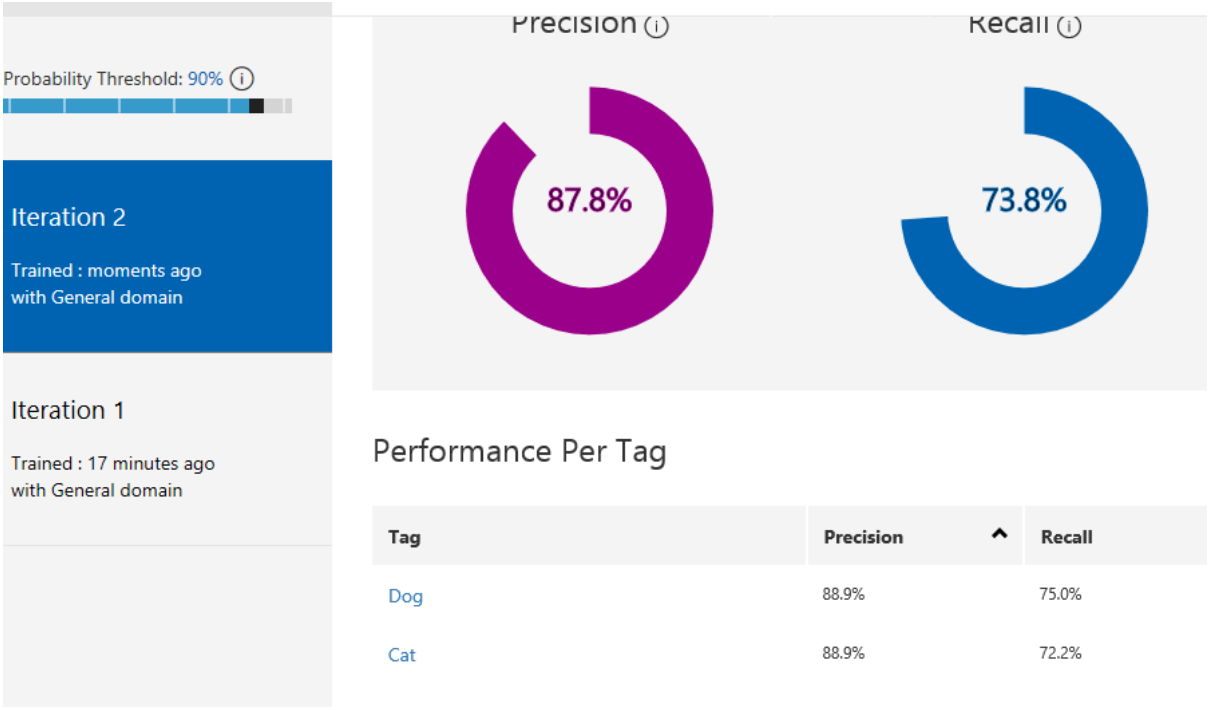
File formats accepted: jpg, png, bmp
File size should not exceed: 4mb

Predictions

Tag	Probability
Cat	98.2%
Dog	0.2%

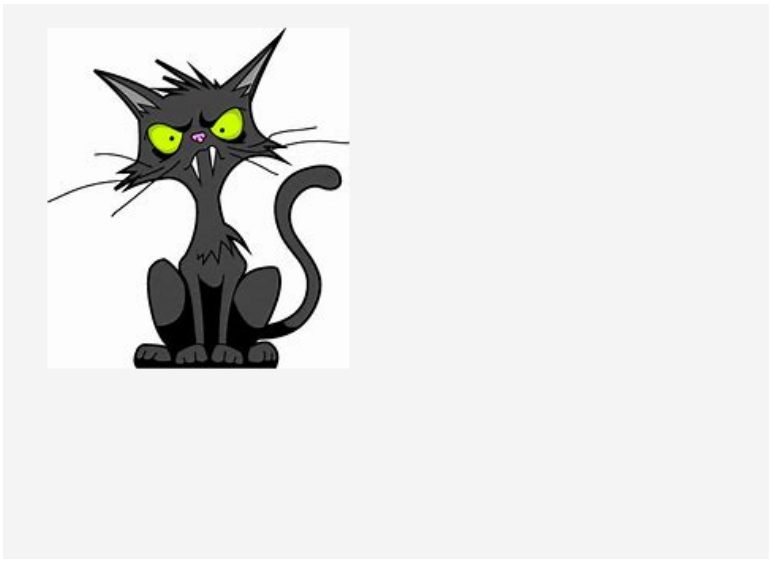
Part2: The Screenshot of:

a. Performance Result:

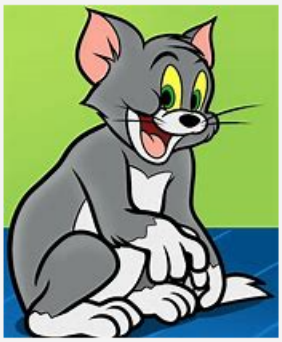


b. Prediction Results:

1. Cat – Correct Prediction (Incorrect in Iteration1)



2. Cat – Correct Prediction (Incorrect in Iteration1).



File formats accepted: jpg, png, bmp
File size should not exceed: 4mb

Predictions

Tag	Probability
Cat	98.2%
Dog	0.2%

3. Cat – Correct Prediction(New).

bmp
File size should not exceed: 4mb

Predictions

Tag	Probability
Cat	99.5%
Dog	0%

4. Dog – Correct Prediction(New).

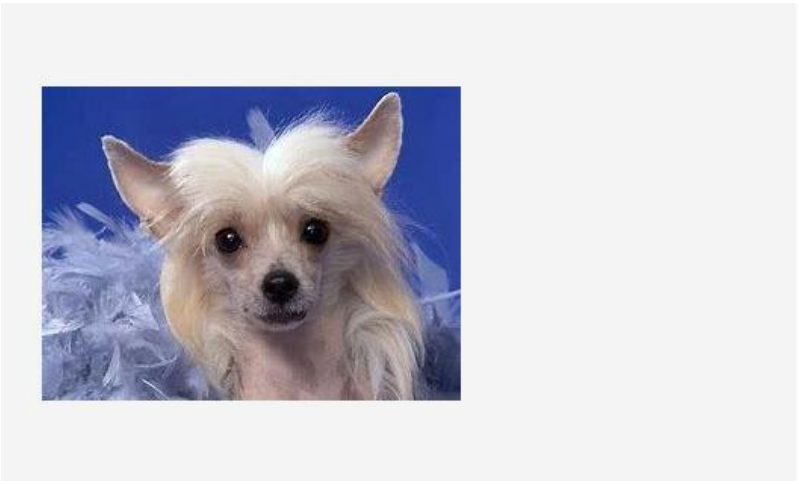
bmp
File size should not exceed: 4mb

Predictions

Tag	Probability
Dog	2.1%
Cat	0.2%

Part3: Screenshot to check if image is consistent in Iteration 1:

1. Dog.
   a. Iteration1 through GUI:



Predictions

Tag	Probability
Dog	82.2%
Cat	0.1%

   b. Iteration1 through Cognitive API:


```
{
  "id":"56abd641-c7c6-4238-aa64-8ec43a47c479",
  "project":"d572e47b-8585-4cfb-aecd-453b0393770f",
  "iteration":"76996ba5-06d0-4089-8ae7-3052e21369eb",
  "created":"2018-06-27T05:53:05.0612805Z",
  "predictions":[
    {
      "probability":0.8225741,
      "tagId":"5a06d4be-acaa-4280-98b9-5b8d11d1b051",
      "tagName":"Dog"
    },
    {
      "probability":0.00163993414,
      "tagId":"4a485a0a-3f04-4541-998b-0f78afe045fd",
      "tagName":"Cat"
    }
  ]
}
```

2. Cat.
   a. Iteration1 through GUI:

Predictions

Tag	Probability
Cat	54.5%
Dog	0%

   b. Iteration1 through Cognitive API:


```
{
  "id":"32b22841-2318-4e80-bf5b-211a8b1b0f8a",
  "project":"d572e47b-8585-4cfb-aecd-453b0393770f",
  "iteration":"76996ba5-06d0-4089-8ae7-3052e21369eb",
  "created":"2018-06-27T05:19:02.566281Z",
  "predictions":[
    {
      "probability":0.5451053,
      "tagId":"4a485a0a-3f04-4541-998b-0f78afe045fd",
      "tagName":"Cat"
    },
    {
      "probability":0.000153462126,
      "tagId":"5a06d4be-acaa-4280-98b9-5b8d11d1b051",
      "tagName":"Dog"
    }
  ]
}
```

Part4: Findings from Iteration1 and Iteration2 and difficulties:

1. The Precision has reduced from 100% in Iteration1 to 87.8% in Iteration2. So, it has become worse due to addition of more data with different characteristics.
2. There were few predictions in Iteration1 that were incorrect as the data was not sufficient and so I had to train the classifier with more data.
3. Also, with more image samples(data) the classifier learnt better to predict (In Iteration 2, It predicted correctly samples that were predicted incorrectly in Iteration1).
4. There is consistency in prediction, i.e. the prediction of correct images in Iteration1 is consistent with prediction of same image in Iteration2.
5. Also for an Iteration, prediction with GUI and prediction through cognitive API yields same results!

6. Difficulty:
    a. Finding images(training data) for this assignment to qualify for Iteration1 and Iteration2 took some time because of trial and error.
    b. Also, doing set up of Visual Studio took some time as this was my first experience with it and setting up environment was not easy.