

TOLLKEEPER.AI

an automated toll payment system

GROUP 08 | CSE499A.02

CURRENT SCENARIO



Bangladesh beat Sri Lanka by three wickets



How much will wages increase

Bangladesh International Sports Opinion Business Youth Entertainment Lifestyle

Search



Bangladesh

Expressway

Slow pace of toll collection causes long tailback

Staff Correspondent Faridpur

Updated: 01 Jul 2022, 20: 04



NEWAGE

Bangladesh

(11);

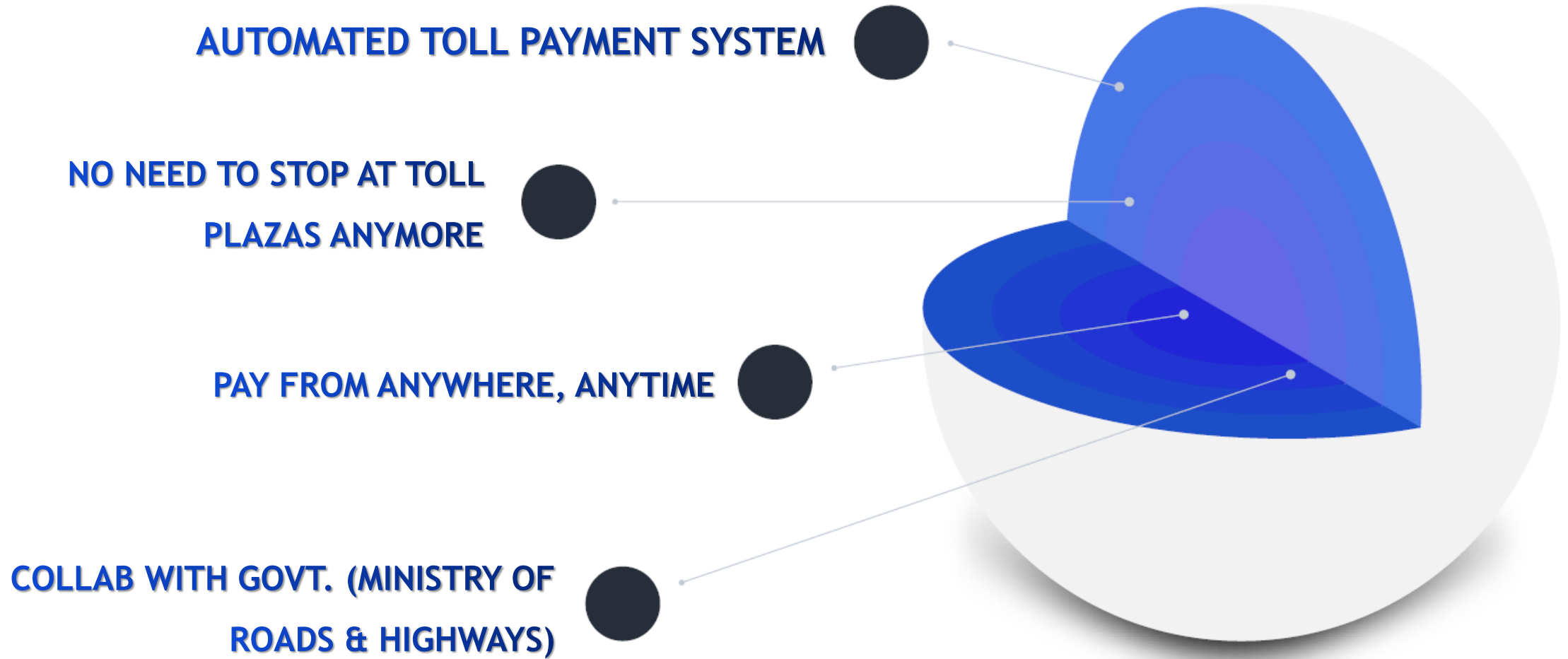
In Focus Elections Dhaka's Pollution Focus Classroom in focus Politics Foreign affairs Diaspora Country City TRENDING: Awami League BNP Dengue general election Dollar Crisis New Age Business magazine October 2023 Israel-Palestine conflict

Slow pace at expressway toll booths causes congestion

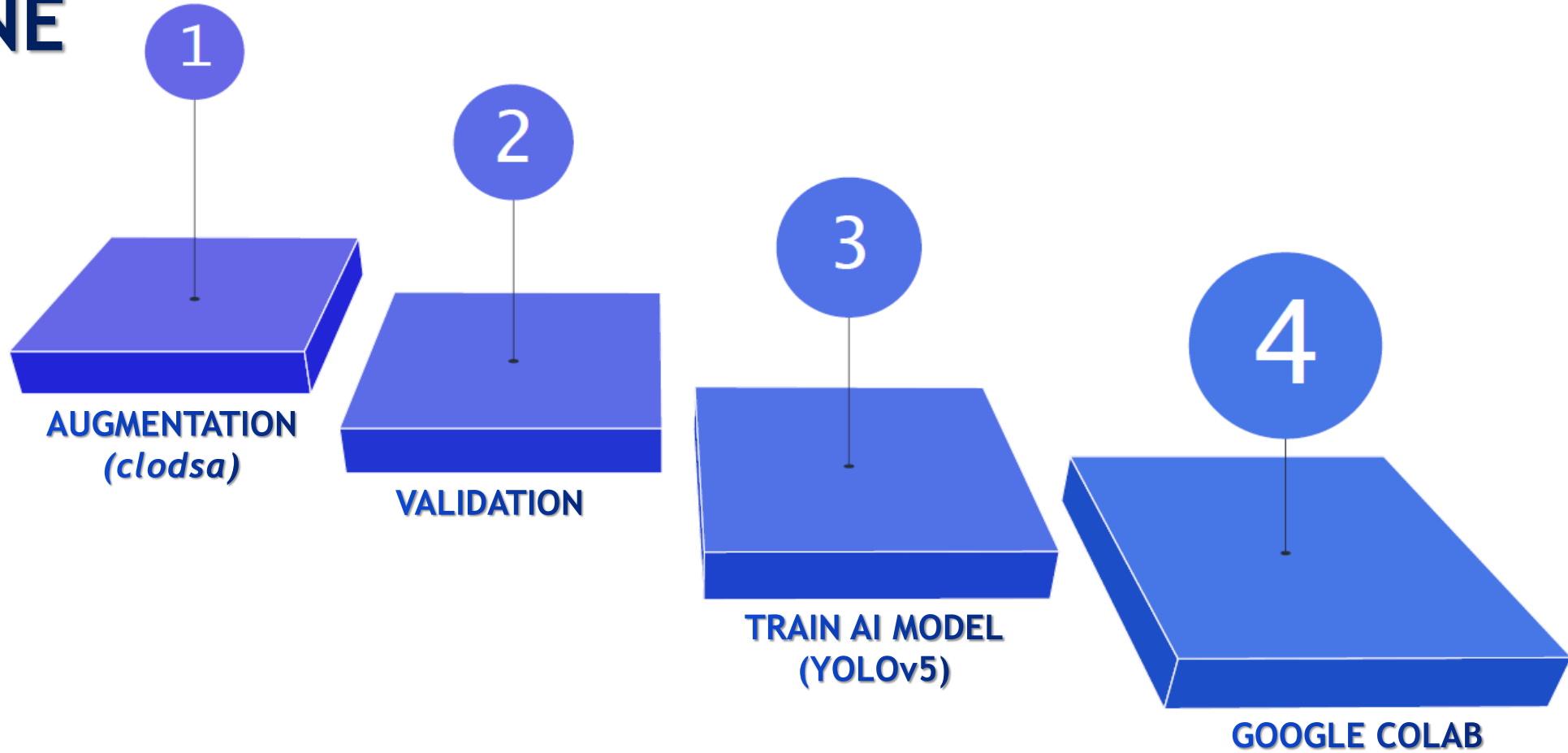
Staff Correspondent | Published: 20:43, Jul 01, 2022 | Updated: 00:01, Jul 02, 2022



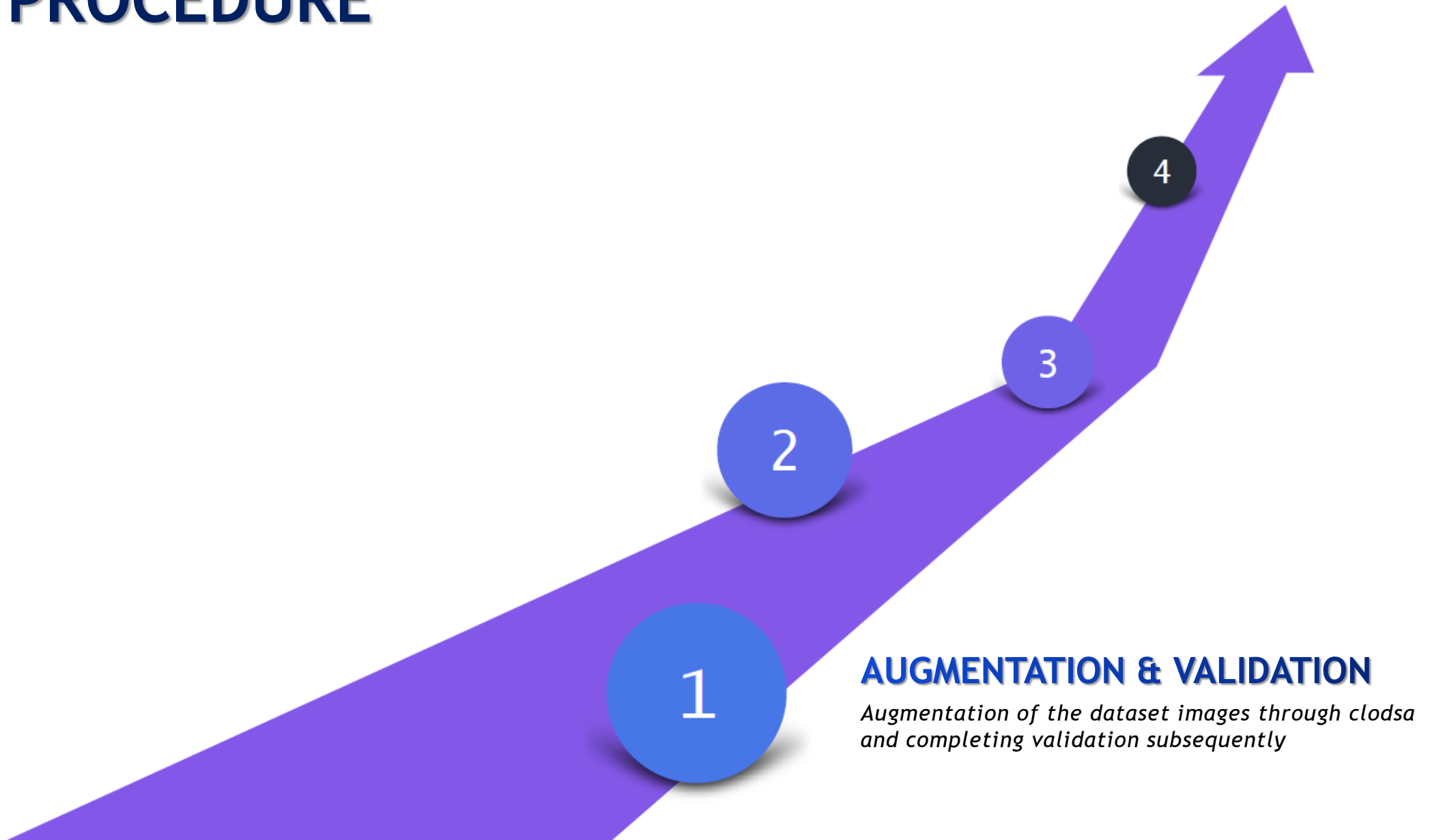
TOLLKEEPER.AI



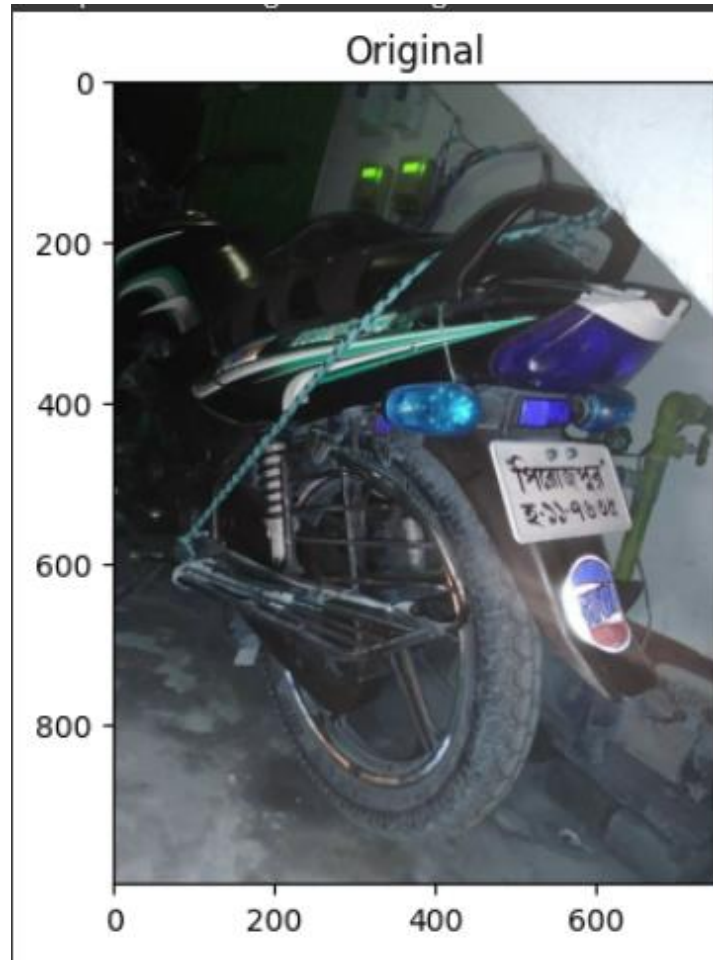
TASKS DONE



PROCEDURE



VERTICAL FLIP

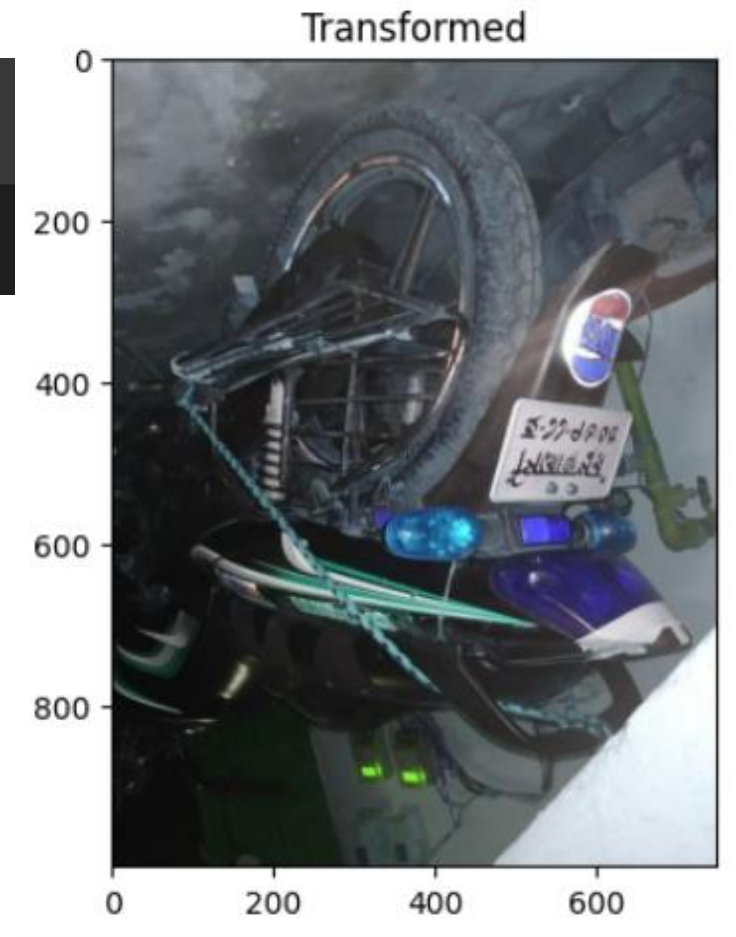


Vertical Flip

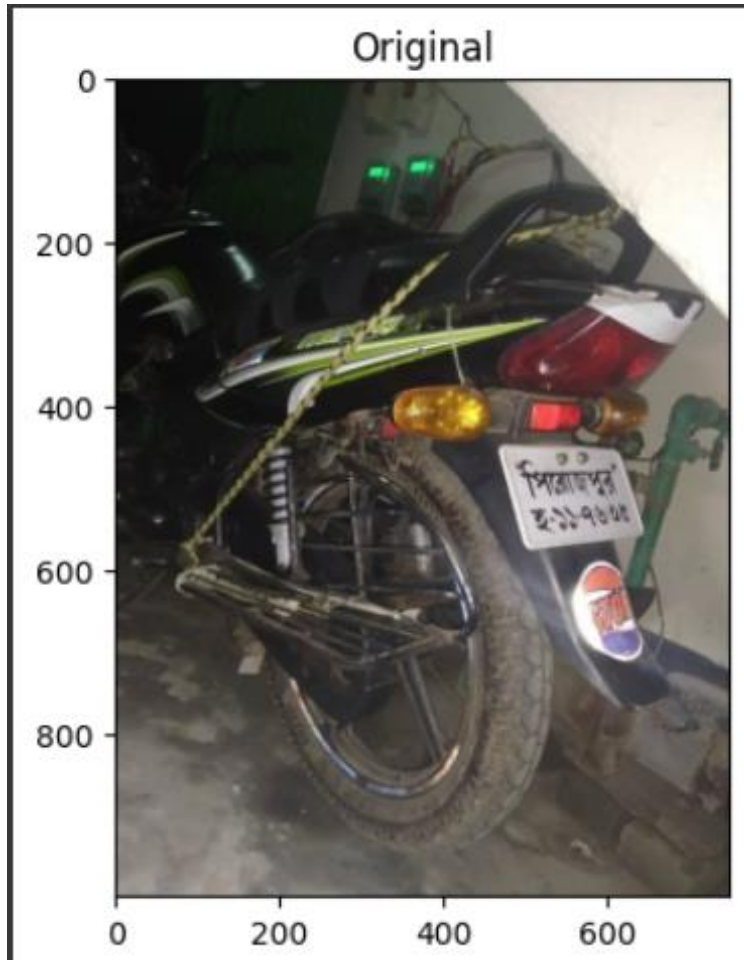
```
[ ] vFlip = createTechnique("flip",{"flip":0})  
    augmentor.addTransformer(transformer(vFlip))
```

Showing the augmentation result

```
▶ imgFlip = vFlip.apply(img)  
plt.figure()  
plt.title("Original")  
plt.imshow(img)  
plt.figure()  
plt.title("Transformed")  
plt.imshow(imgFlip)
```



HORIZONTAL FLIP



Horizontal Flip

```
[ ] hFlip = createTechnique("flip",{"flip":1})  
    augmentor.addTransformer(transformer(hFlip))
```

Showing the augmentation result

```
▶ imgFlip = hFlip.apply(img)  
plt.figure()  
plt.title("Original")  
plt.imshow(img[:,::-1])  
plt.figure()  
plt.title("Transformed")  
plt.imshow(imgFlip[:,::-1])
```



AVERAGE BLUR

<matplotlib.image.AxesImage at 0x1ac8b6914c0

Original



Average Blur

Showing augmentation result

Drop

```
[ ] drp = createTechnique("dropout", {"percentage": 0.10})  
    augmentor.addTransformer(transformer(drp))
```

```
▶ imgFlip = drp.apply(img)  
plt.figure()  
plt.title("Original")  
plt.imshow(img[:, :, ::-1])  
plt.figure()  
plt.title("Transformed")  
plt.imshow(imgFlip[:, :, ::-1])
```

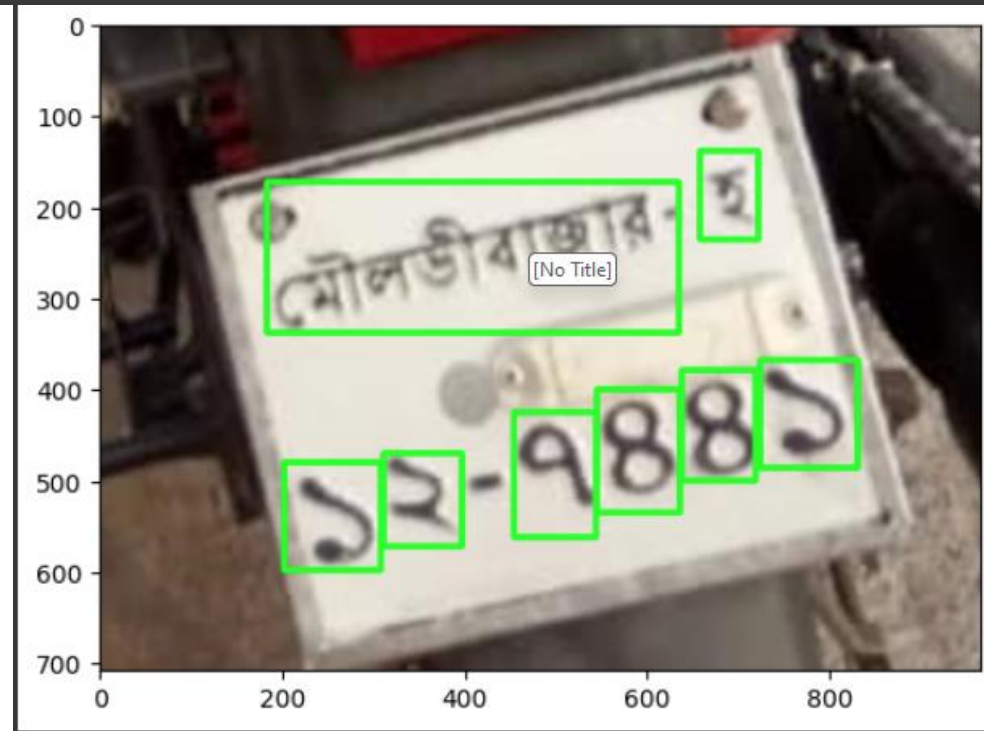
Transformed



BOUNDING BOX

Showing Image with bounding boxes

```
[ ] img,boxes = boxesFromYOLO("/content/dataset/Bangla_License_Plate/1443.jpg" , "/content/dataset/Bangla_License_Plate/1443.txt")  
showBoxes(img,boxes)
```



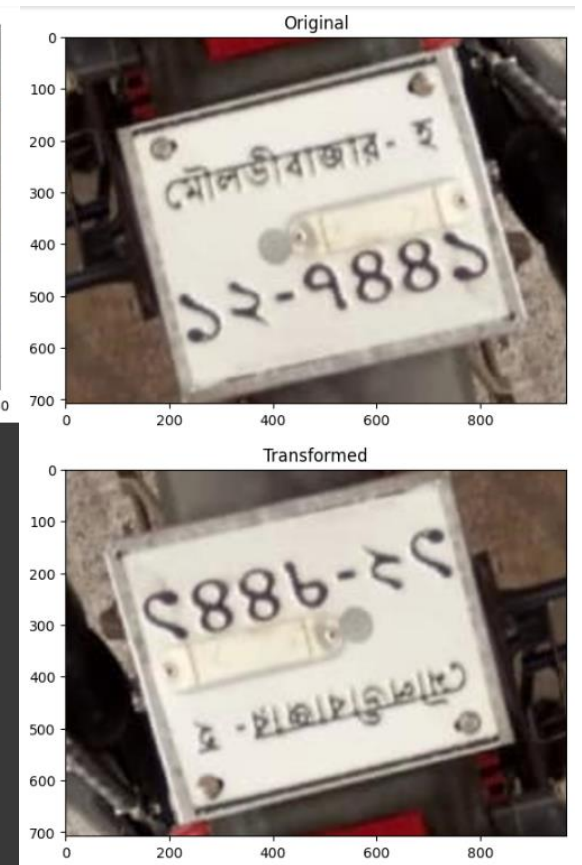
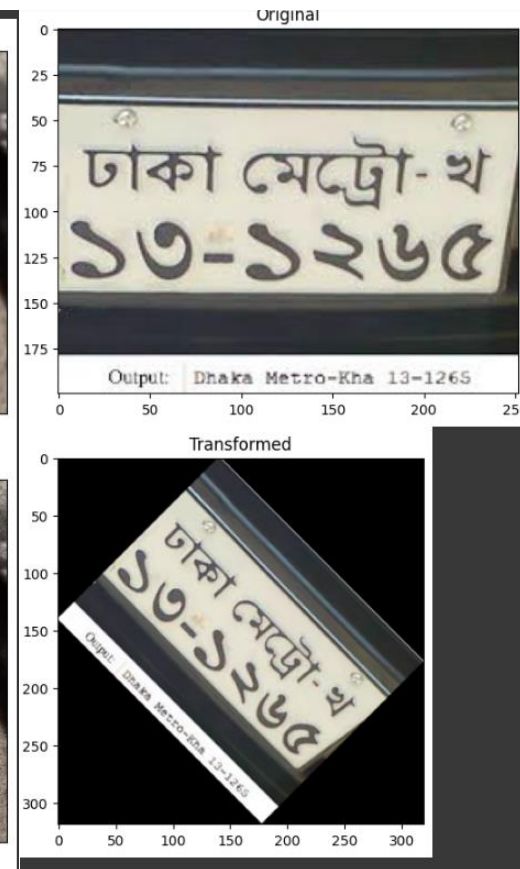
LICENCE PLATE (FLIPS & BLUR)

Horizontally and Vertically Flip

```
[ ] hvFlip = createTechnique("flip",{"flip":-1})  
augmentor.addTransformer(transformer(hvFlip))
```

Showing the augmentation result

```
[ ] imgFlip = hvFlip.apply(img)  
plt.figure()  
plt.title("Original")  
plt.imshow(img[:,:,:-1])  
plt.figure()  
plt.title("Transformed")  
plt.imshow(imgFlip[:,:,:-1])
```



PROCEDURE

DETECT
*Recognize the number plate in the car by
using detect.py*

2

3

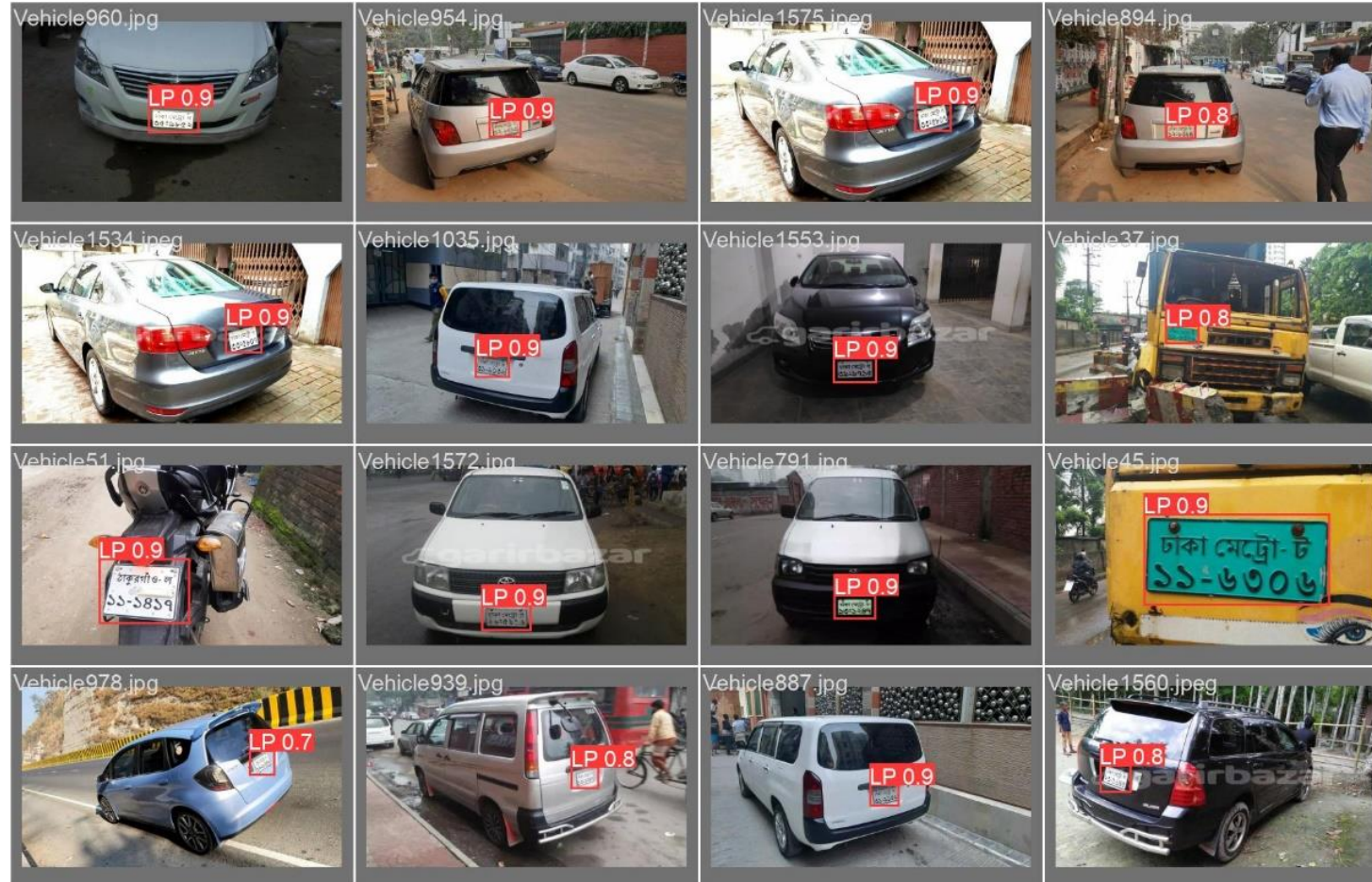
4

AUGMENTATION & VALIDATION

*Augmentation of the dataset images through clodsa
and completing validation subsequently*

1

DETECTING THE NUMBER PLATE



PROCEDURE

DETECT
*Recognize the number plate in the car by
using detect.py*

2

3

CROP

*Crop the number plate and
process it for testing*

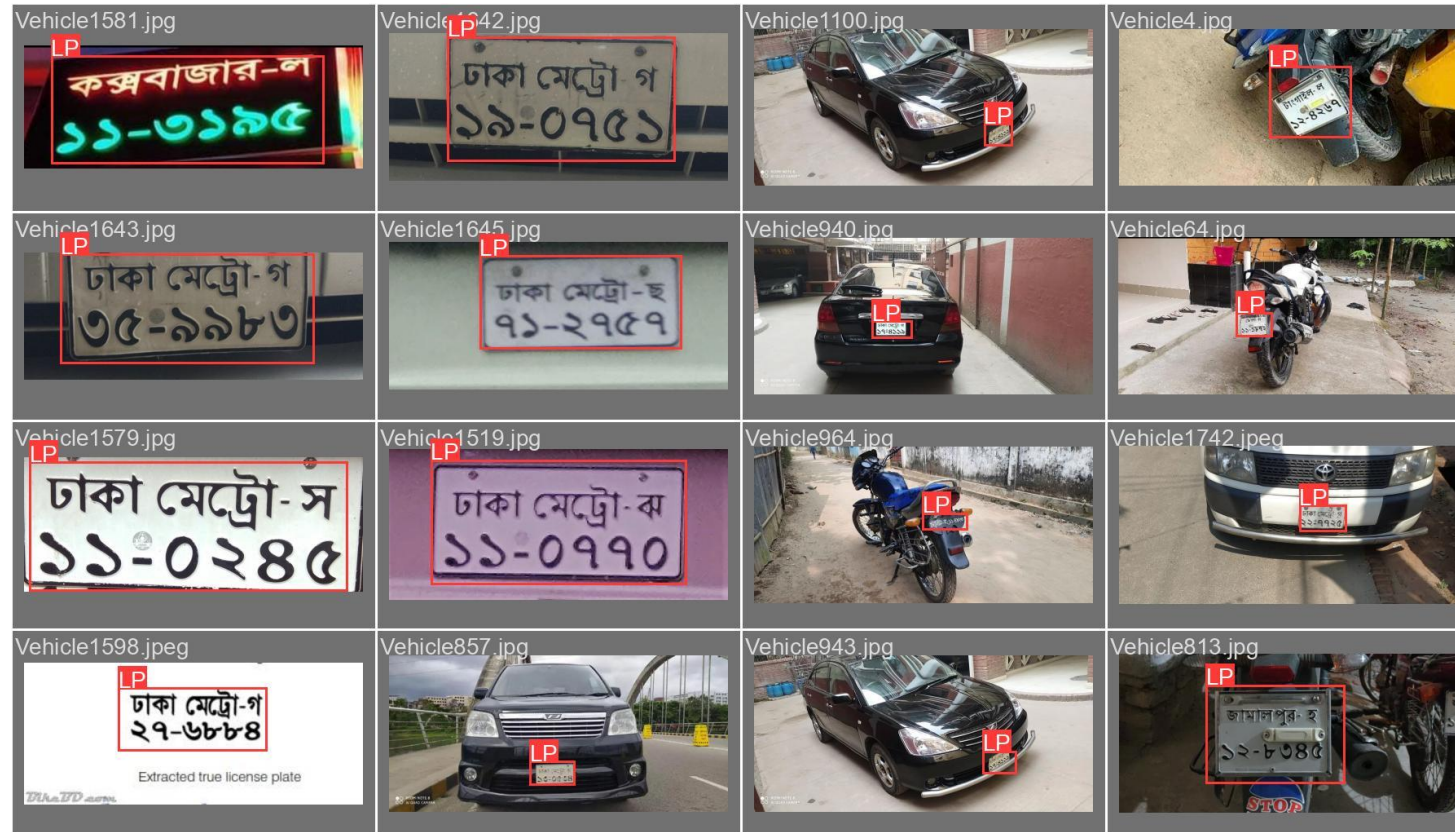
4

AUGMENTATION & VALIDATION

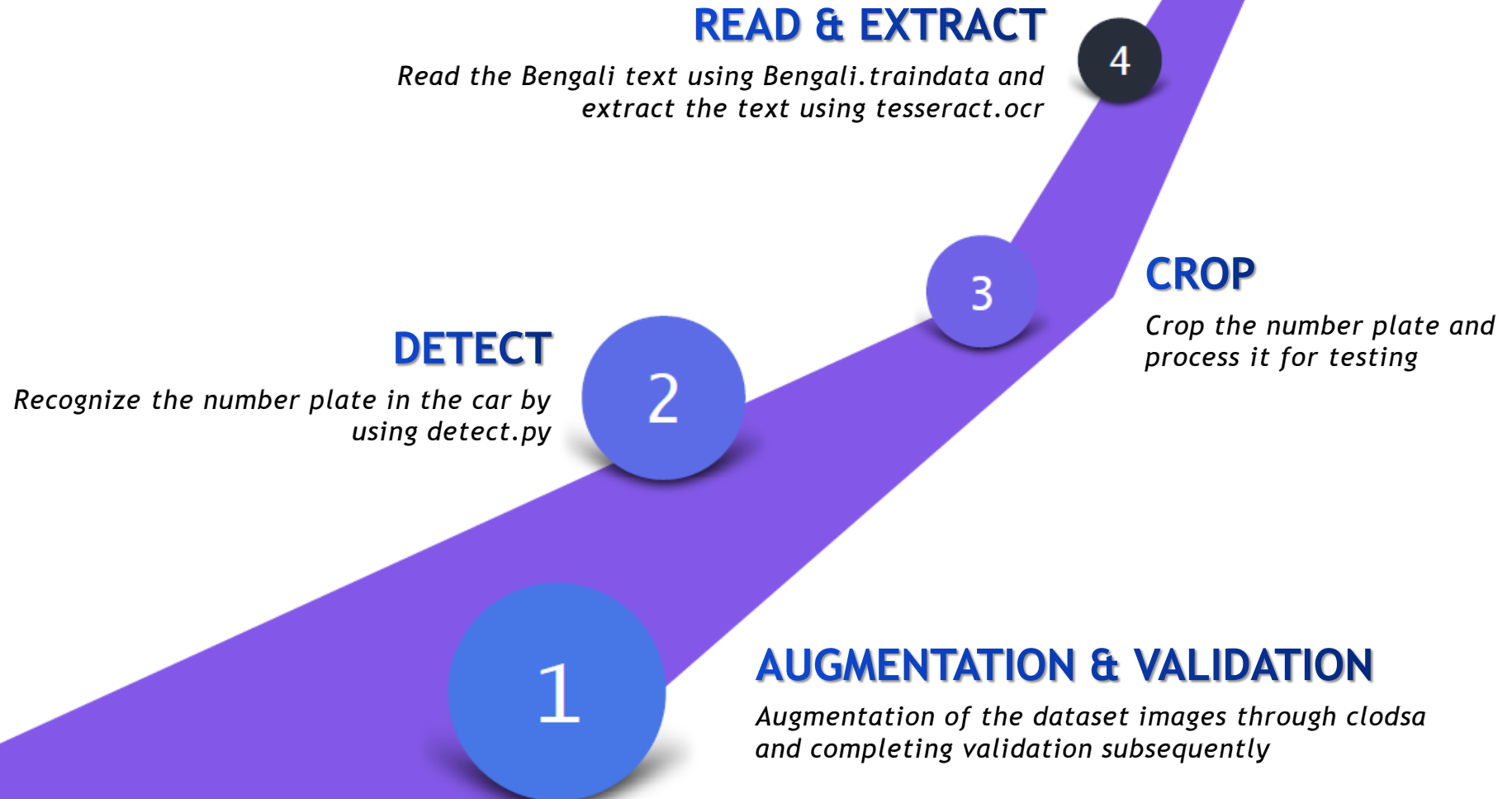
*Augmentation of the dataset images through clodsa
and completing validation subsequently*

1

CROPPING THE NUMBER PLATE



PROCEDURE



READING & EXTRACTING

```
[ ] plot_two_images(img3, thresh3, 'Original image', 'Processed image')
```

Original image



Processed image



```
text = pytesseract.image_to_string(thresh3, lang = "Bengali")
```

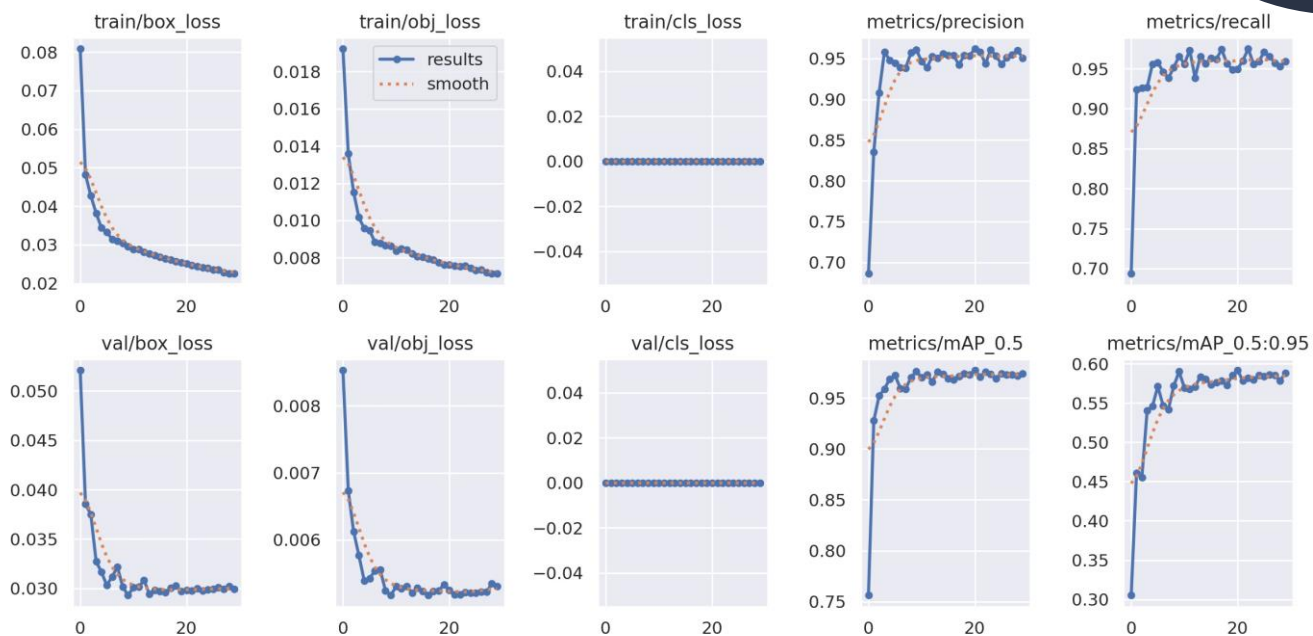
```
[ ] print(text)
```

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RESULTS

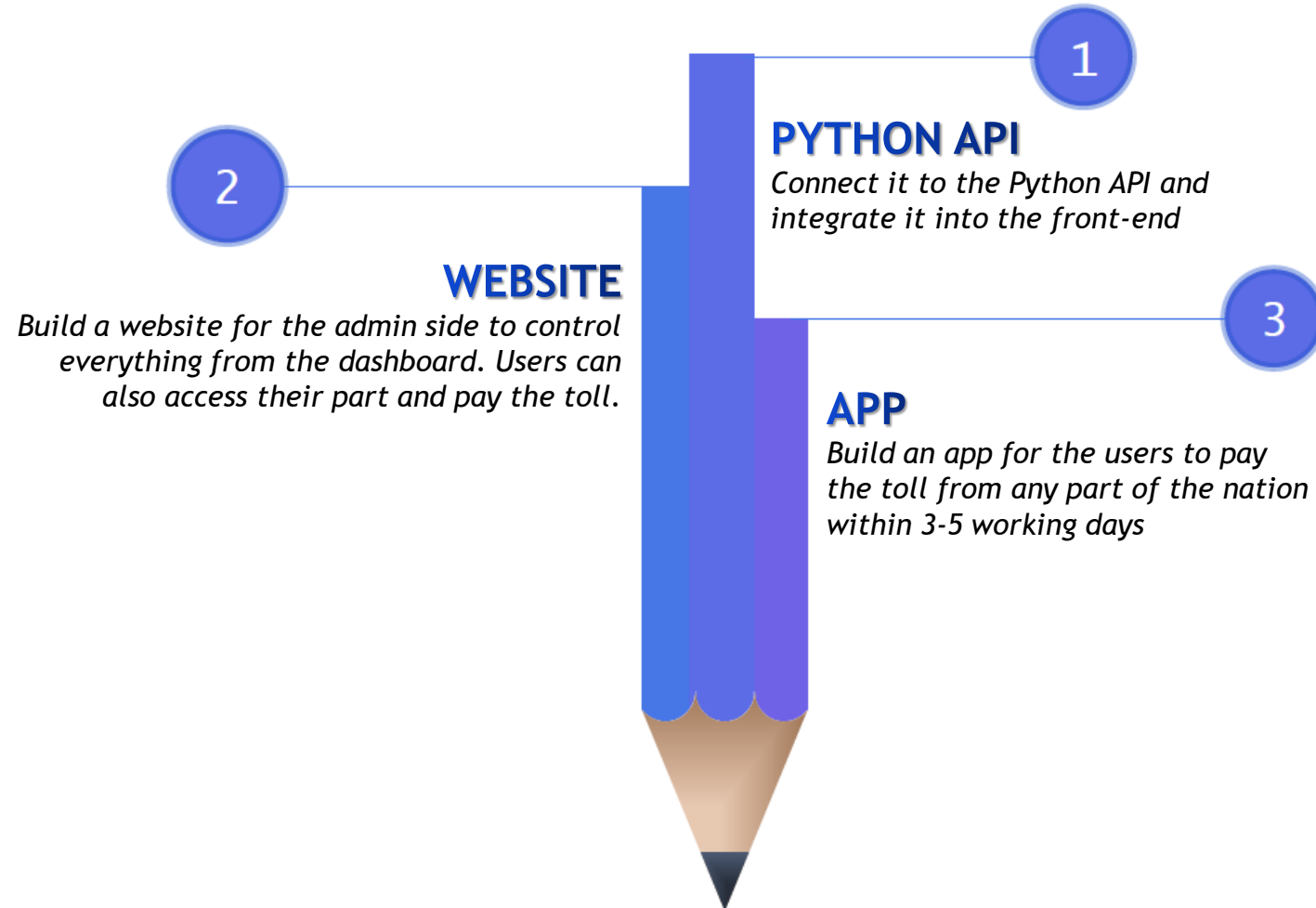
97.4%

*We achieved 97.4% accuracy with map50;
Decreased the Loss and Increased the Precision*




CSE499B

GOALS




UX DESIGN



TOLLKEEPER.AI

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TOLLKEEPER.AI

CREATE ACCOUNT


Name:

NID:

Mobile:

Password:

Confirm Password:



TOLLKEEPER.AI

PAYMENT DETAILS

Padma Bridge
Dhaka Metro Ka 22-4578
Ref: 82544097

264TK

Padma Bridge
Dhaka Metro Ka 22-4578
Ref: 82544097


264TK

Padma Bridge
Dhaka Metro Ka 22-4578
Ref: 82544097

264TK

Padma Bridge
Dhaka Metro Ka 22-4578
Ref: 82544097


264TK




TOLLKEEPER.AI



PAYMENT METHODS

Saved Methods:

01xxxxxxxxxx

01xxxxxxxxxx

Add Methods:

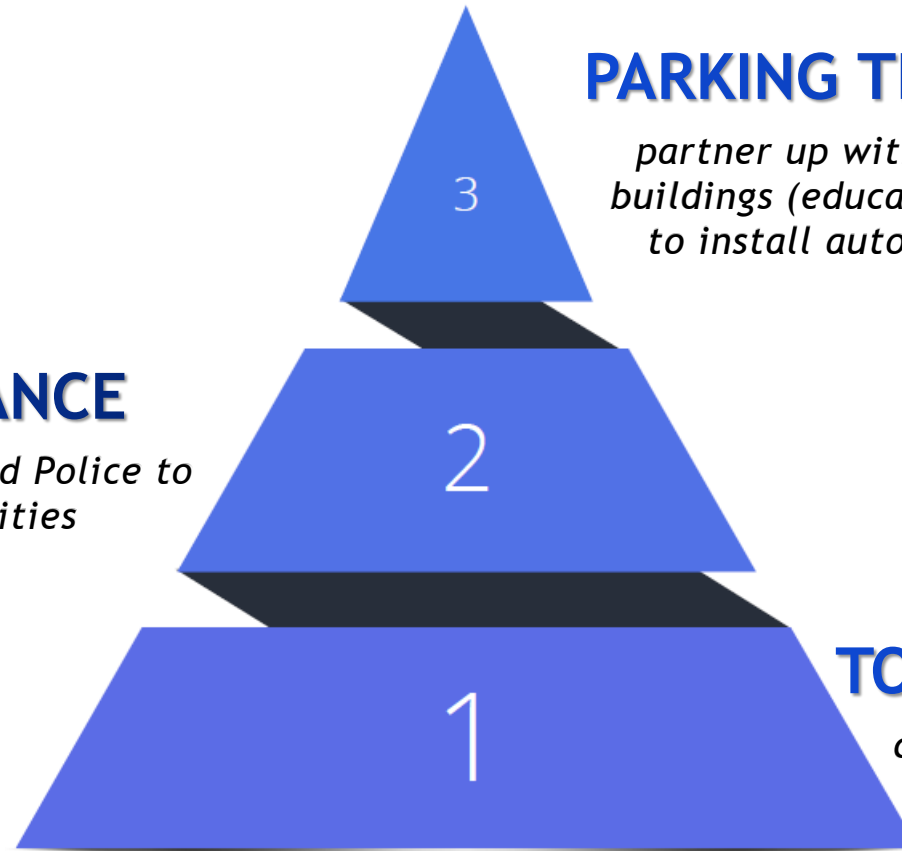


>

BUSINESS PLANS

TRAFFIC SURVEILLANCE

collab with city corporations and Police to install surveillance systems in cities



PARKING TRACKING SOFTWARE

partner up with shopping malls and commercial buildings (educational institutions and hospitals) to install automated parking tracking software

TOLL COLLECTION SYSTEM

collab with Bridges and Expressways to gain toll collection contracts