

Where

Why

How

Approach

Page 01

# رخصتك

Smart Driving Test: Get Your  
License with a Dashcam Video!

Lets Go!



Le wagon  
#1801



الأكاديمية السعودية الرقمية  
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Why

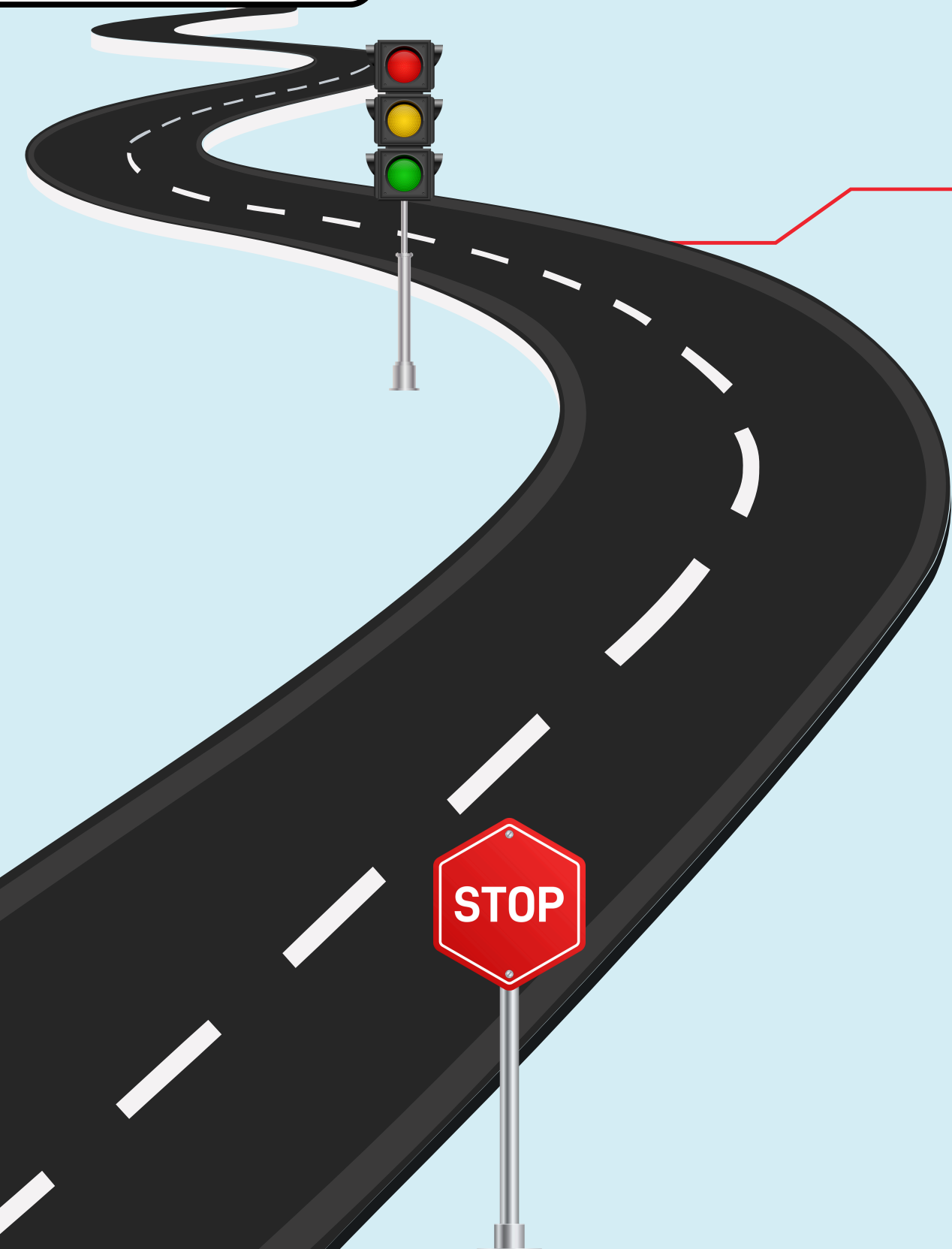
How

Approach

# WHERE DID THE IDEA COME FROM?




 My struggle

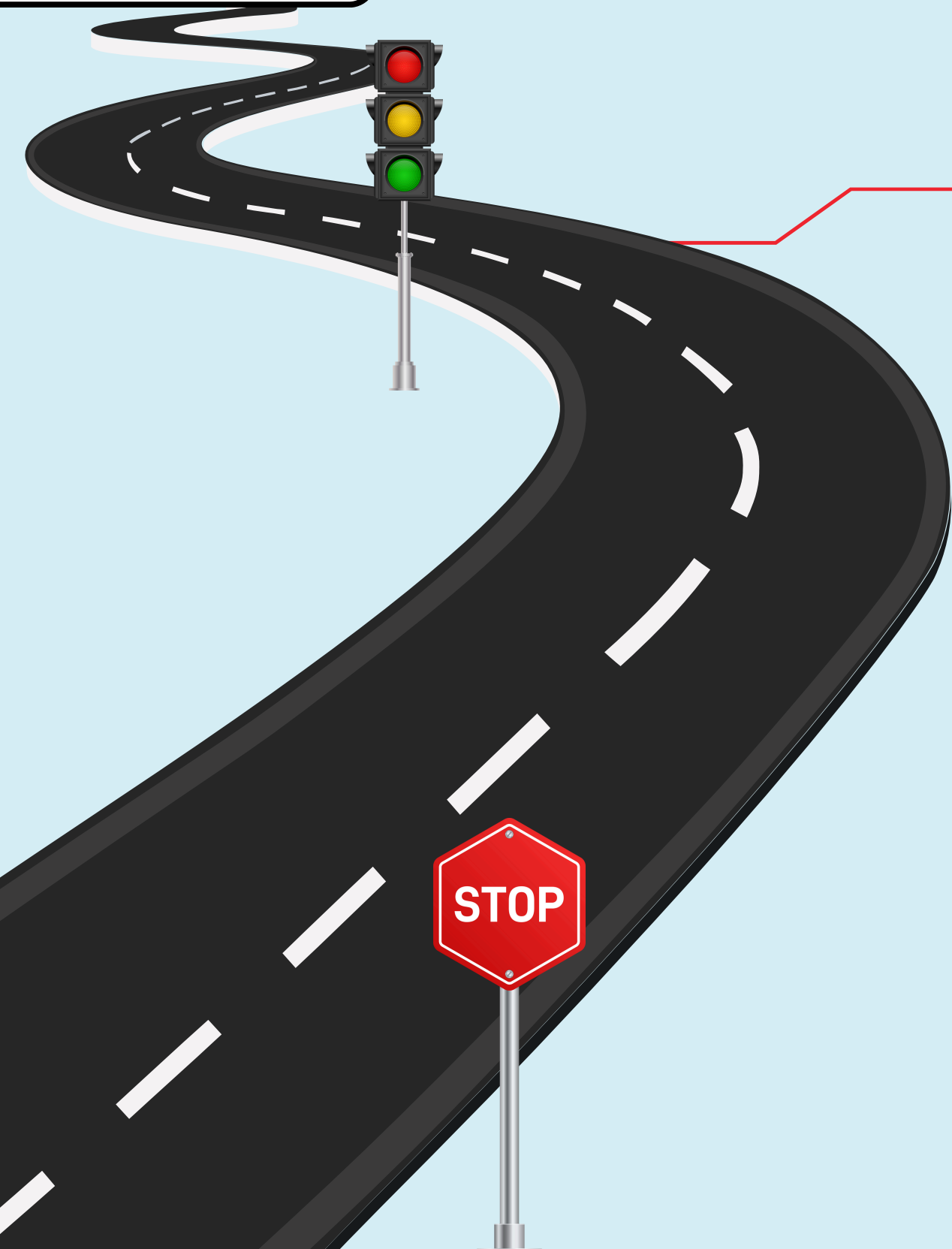
 2030 vision

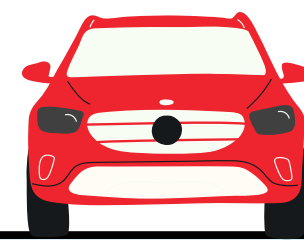




# WHY:

-  **Fairness**
-  **Accuracy**
-  **Save Time**
-  **Reduce Cost**





# HOW:



**Record**



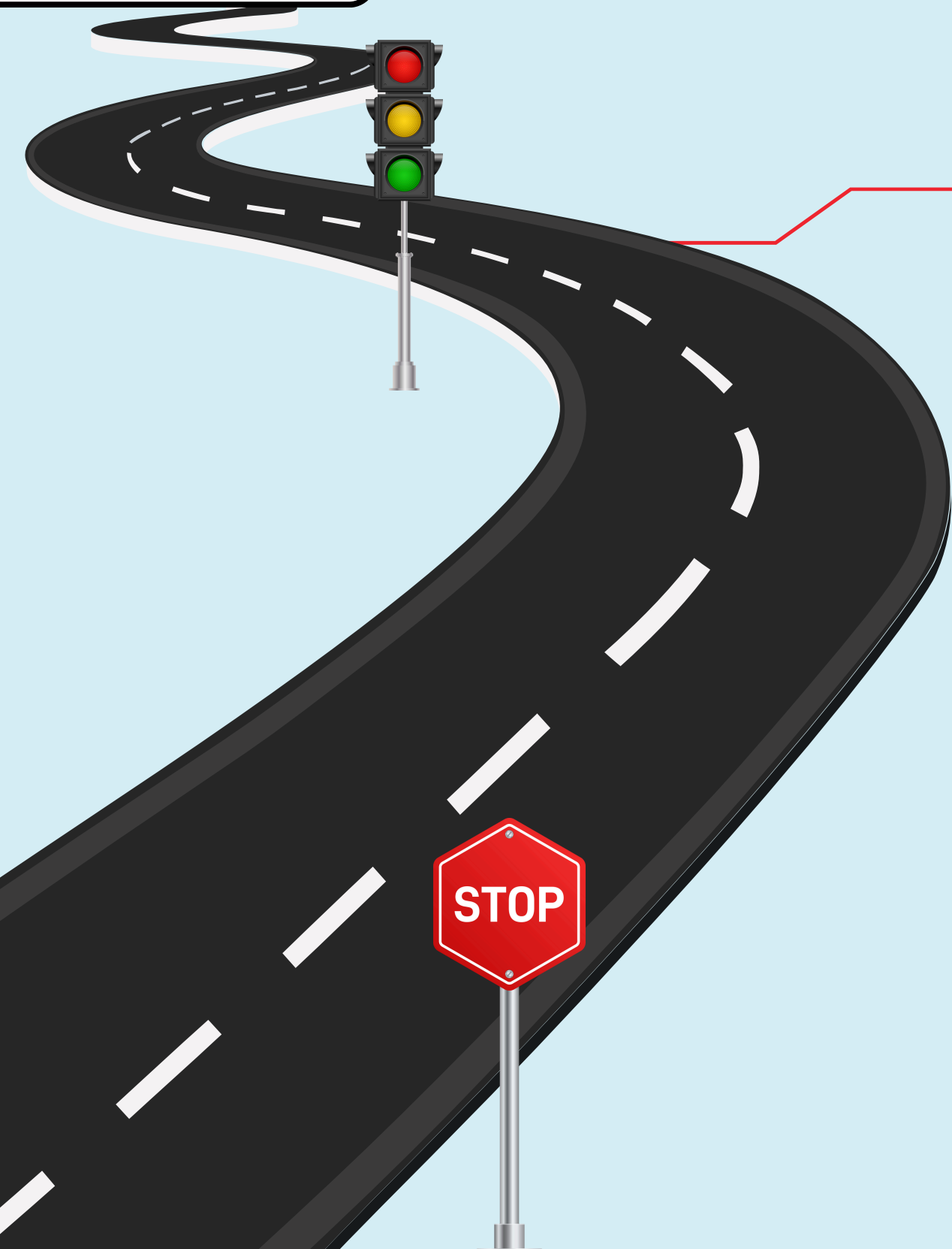
**Send**



**Evaluate**



**Get your Score**





# APPROACH:



**Models**

**ROAD R**

**YOLO**



**Data**

**Road**

**Roboflow**





# ROAD R:

**1** -41 Labels categorised as Agents, Actions, and Locations

**2** -243 Logical constraints to ensure real world conditions





# ROAD R:

**Table 1** ROAD labels

Agents:	Pedestrian, Car, Cyclist, Motorbike, Medium vehicle, Large vehicle, Bus, Emergency vehicle, Traffic light (TL), Other TL.
Actions:	Move away, Move towards, Move, Brake, Stop, Indicating left, Indicating right, Hazards lights on, Turn left, Turn right, Overtake, Wait to cross, Cross from left, Cross from right, Crossing, Push object, Red TL, Amber TL, Green TL.
Locations:	AV lane, Outgoing lane, Outgoing cycle lane, Incoming lane, Incoming cycle lane, Pavement, Left pavement, Right pavement, Junction, Crossing location, Bus stop, Parking.



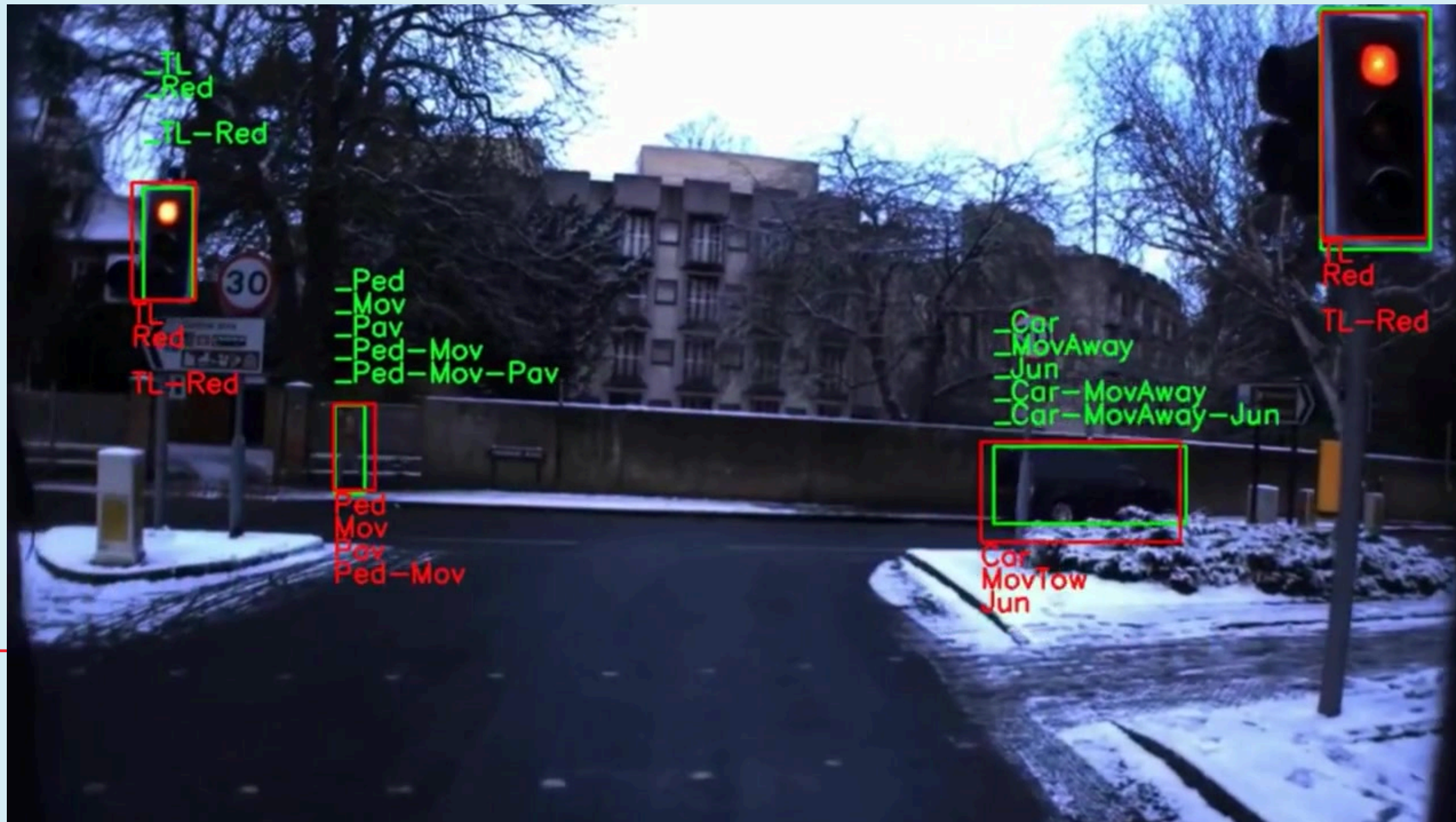
# ROAD R:

**Table 10** (continued)

Requirements	Natural language explanations
{not MedVeh, not Xing}	A medium vehicle cannot be crossing
{not Red, not Amber}	A red traffic light cannot be amber
{not MedVeh, not PushObj}	A medium vehicle cannot push objects
{not MovTow, not TL}	A traffic light cannot move towards
{not OthTL, not MovAway}	A other traffic light cannot move away
{not LarVeh, not Wait2X}	A large vehicle cannot wait to cross
{not TL, not Mov}	A traffic light cannot move
{not Red, not Green}	A red traffic light cannot be green
{not TL, not XingFmRht}	A traffic light cannot be crossing from right
{not Amber, not IncatRht}	An agent cannot indicate right and signal amber






# ROAD R DEMO:





# YOLOv11n :

-  -YOLO is a pretrained model for object detection
-  -Version11 improves accuracy and speed
-  -The nano version for lightweight efficiency



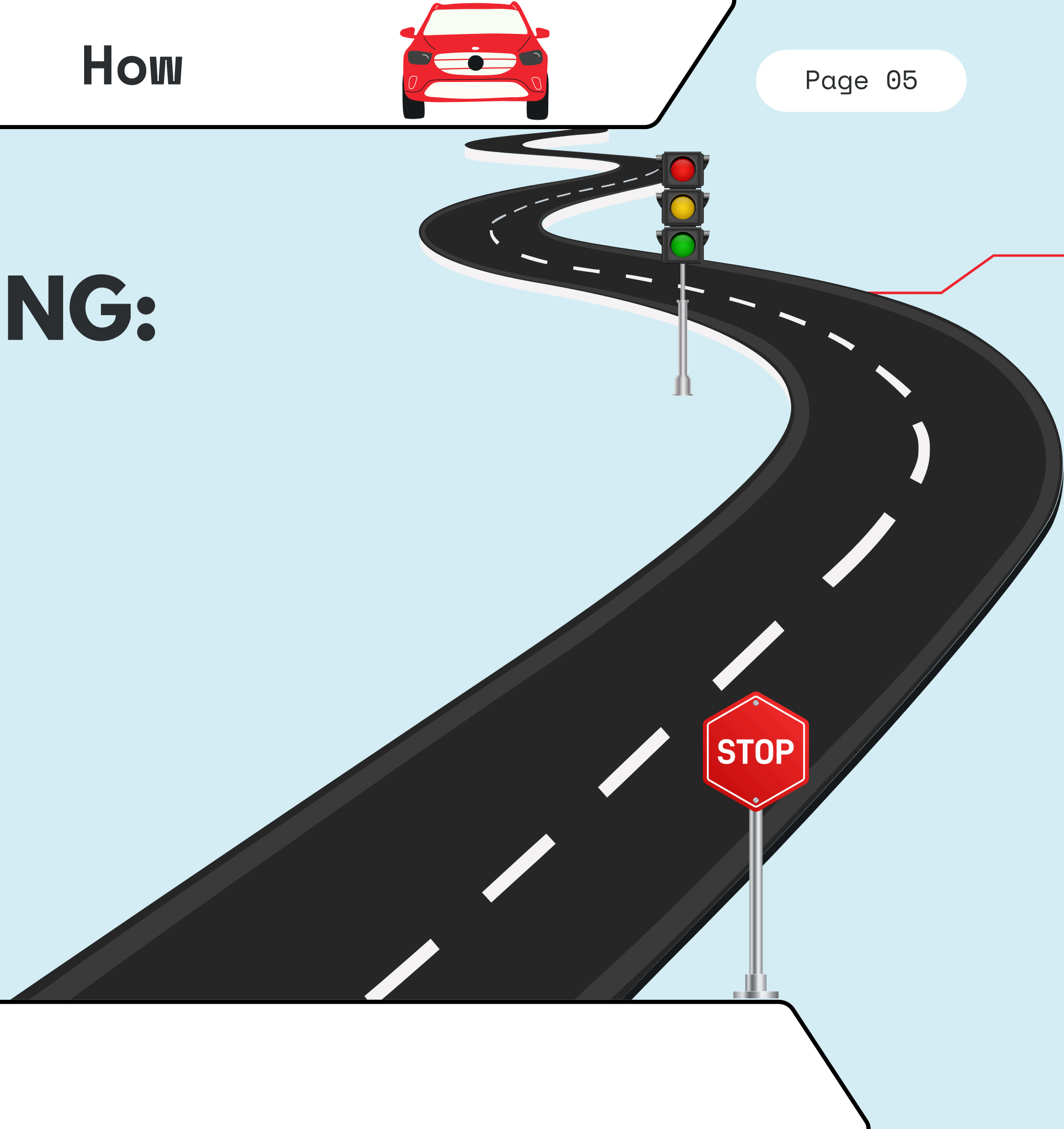
# YOLO FINE-TUNNING:

## -Stop sign dataset

- Dataset number: 6656
- mAP50-95: 0.935

## -Traffic light dataset

- Dataset number: 4474
- mAP50-95: 0.858





# YOLO :

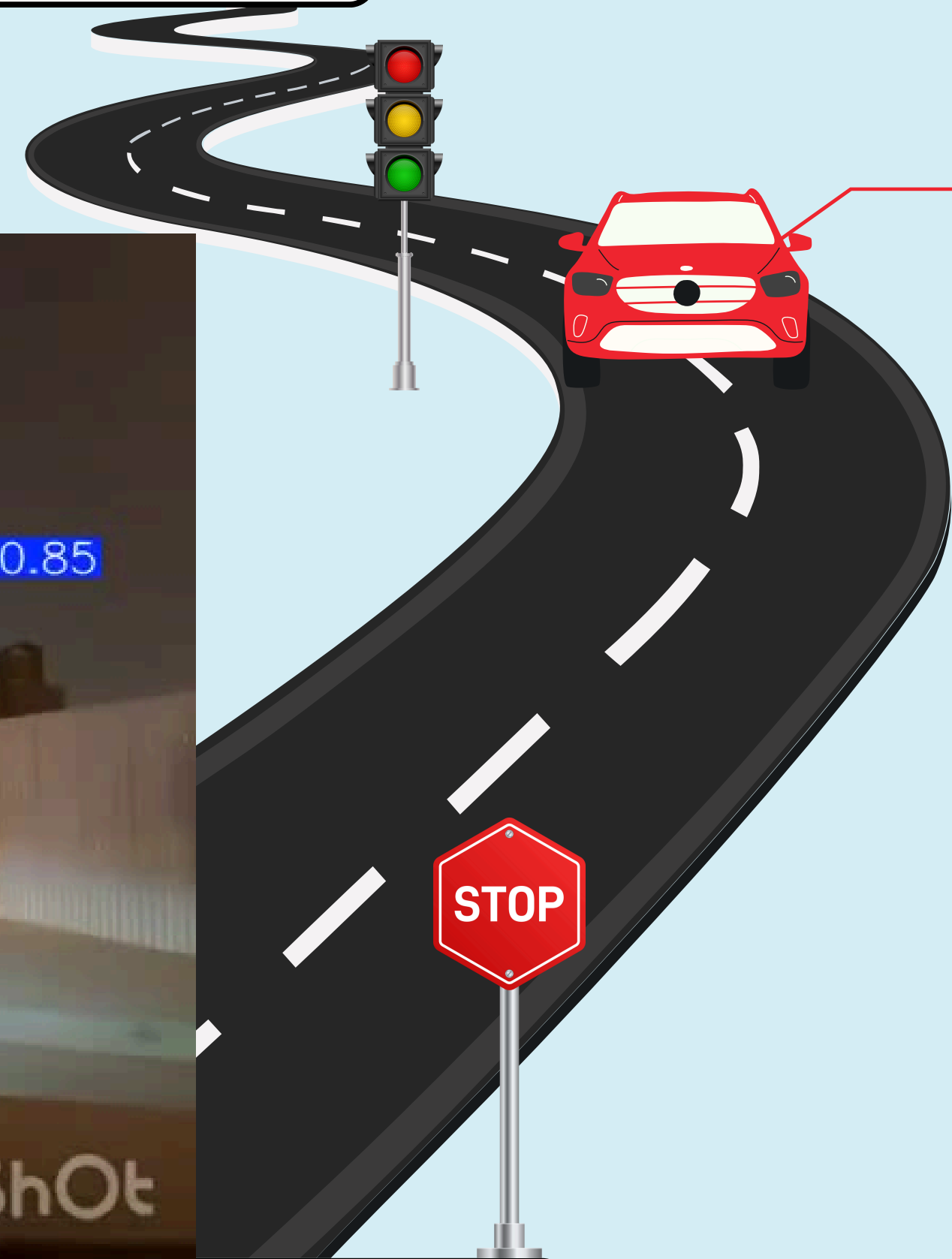


## Stop Sign detection

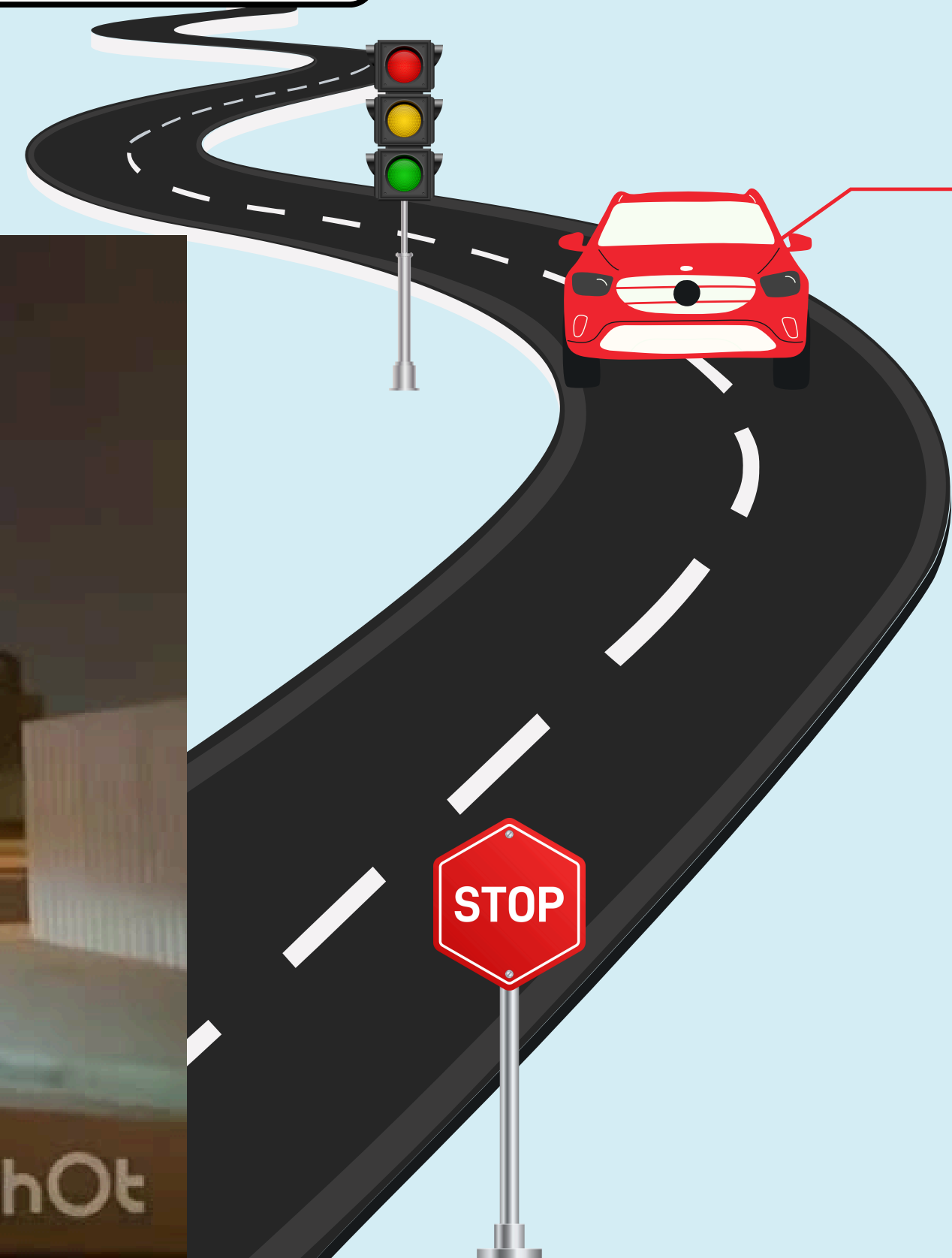
- Detect stop sign
- Count stop sign violation



# YOLO STOP SIGN DEMO:



# YOLO STOP SIGN DEMO:





# YOLO :



## Traffic light detection

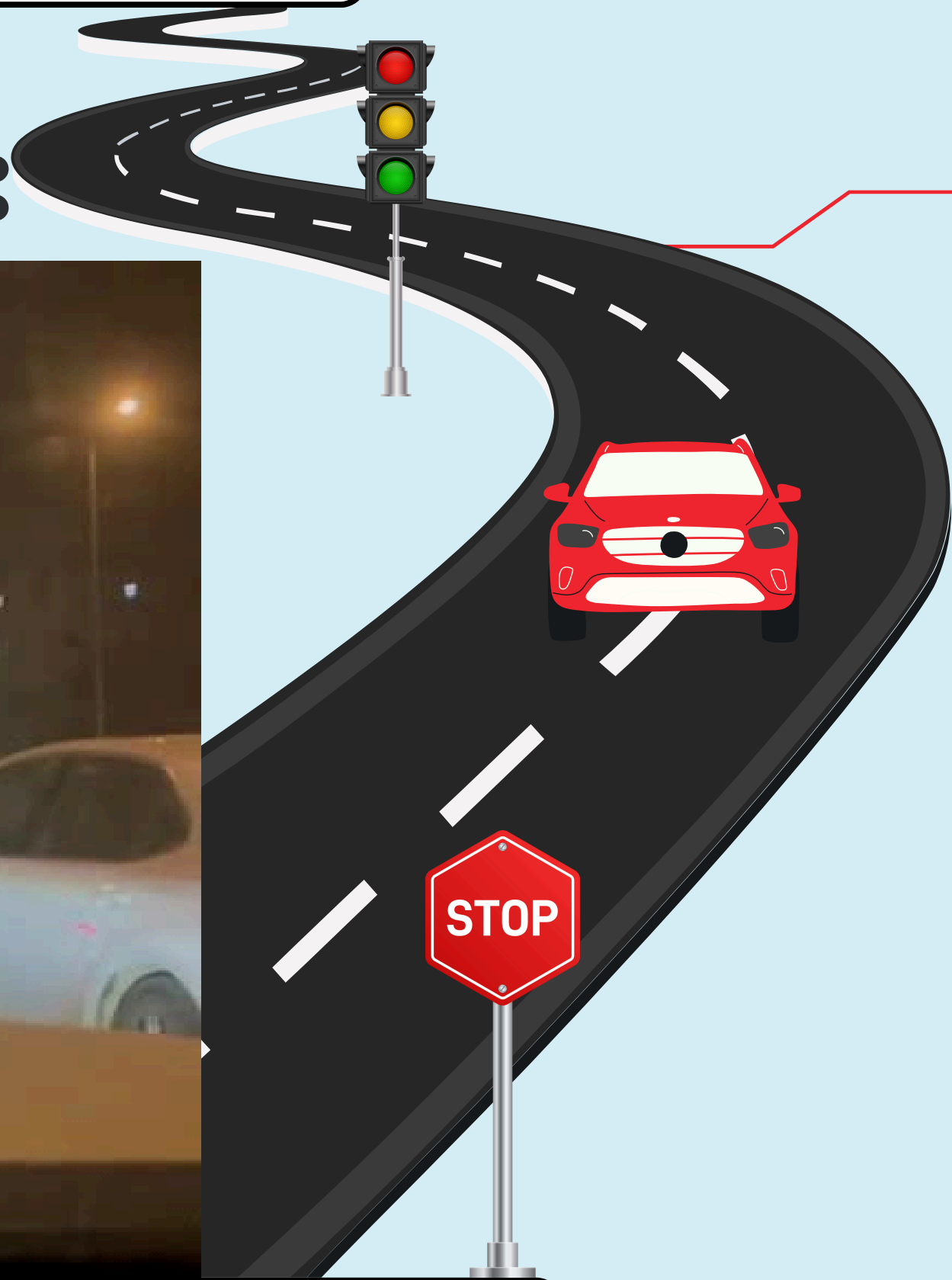
- Detect traffic red light
- Count red light violation







# YOLO TRAFFIC LIGHT DEMO:

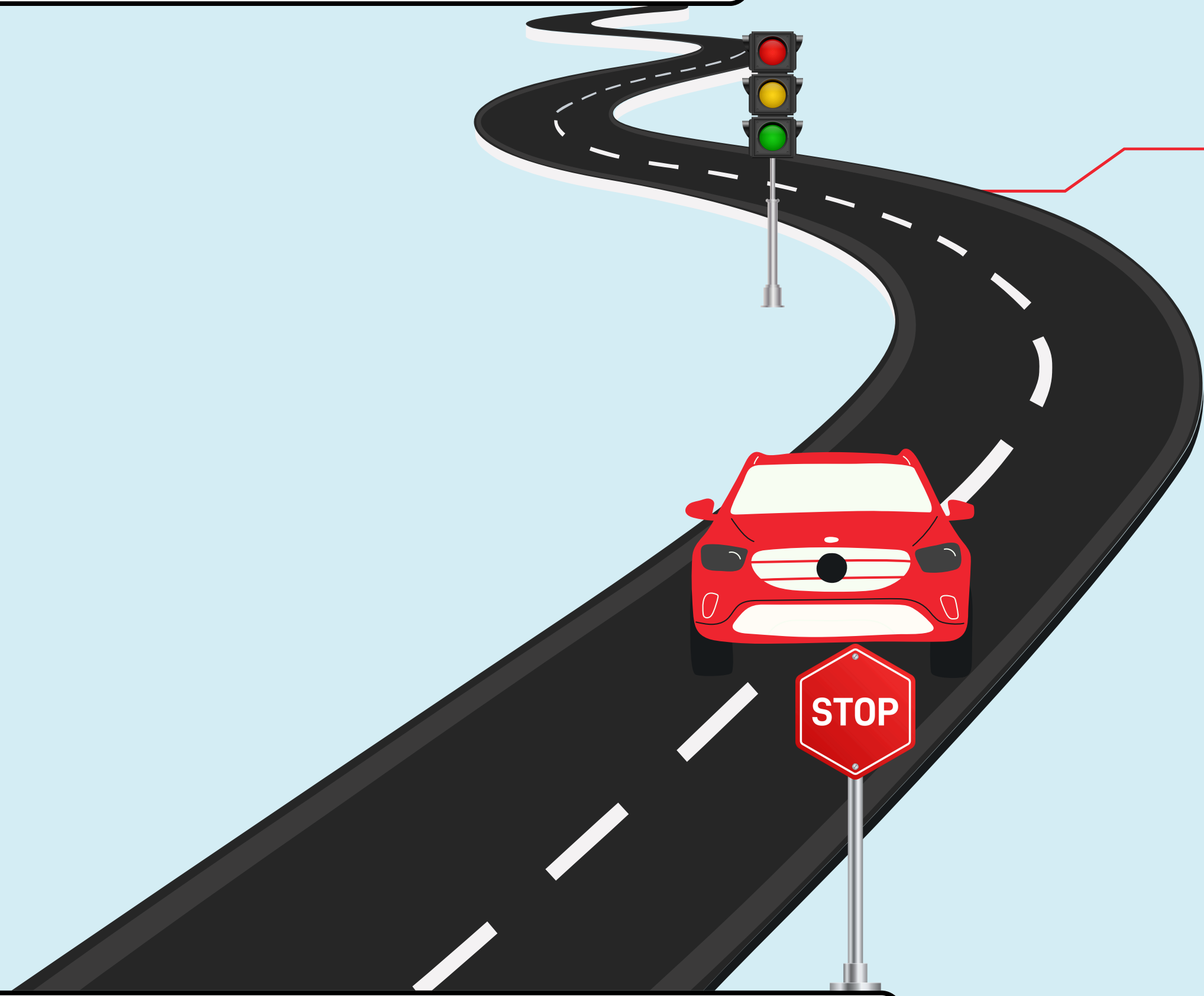


# YOLO TRAFFIC LIGHT DEMO:



# LIMITATIONS:

-  **Scope ROAD R**
-  **Time**
-  **Financial resources**
-  **Capturing actions**



# FUTURE WORK



**Use ROAD R as a whole**

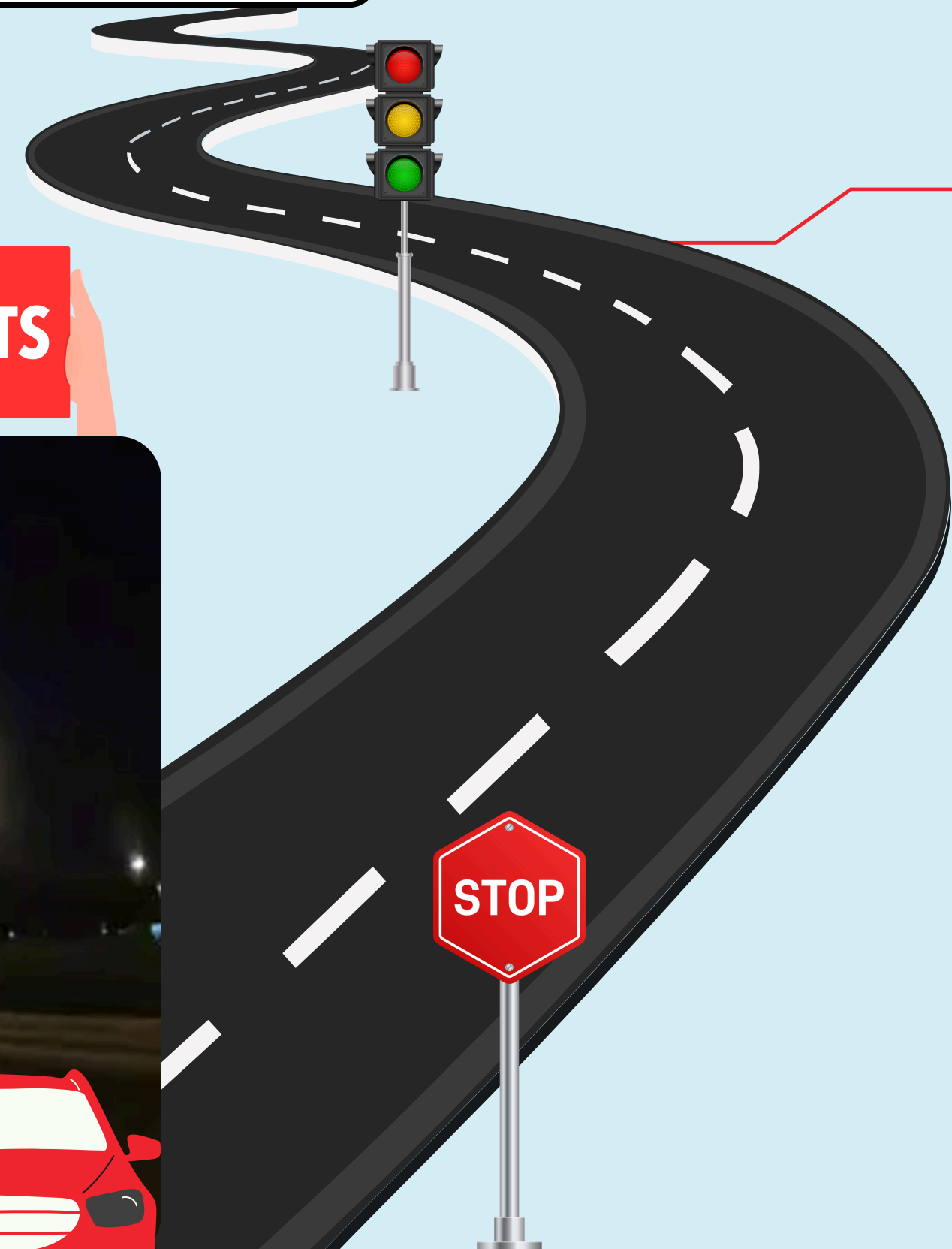
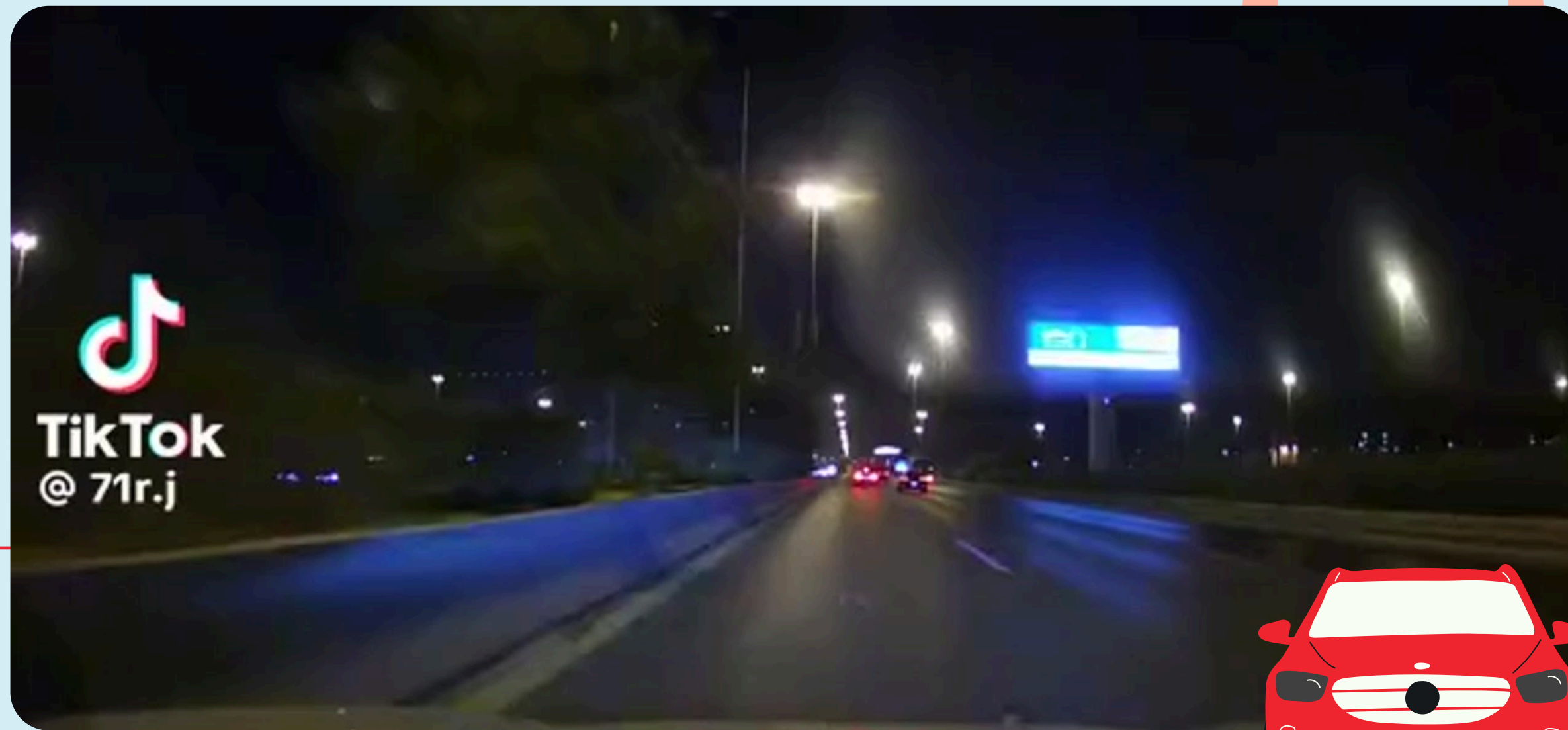


**Increase action comprehension for road rules**

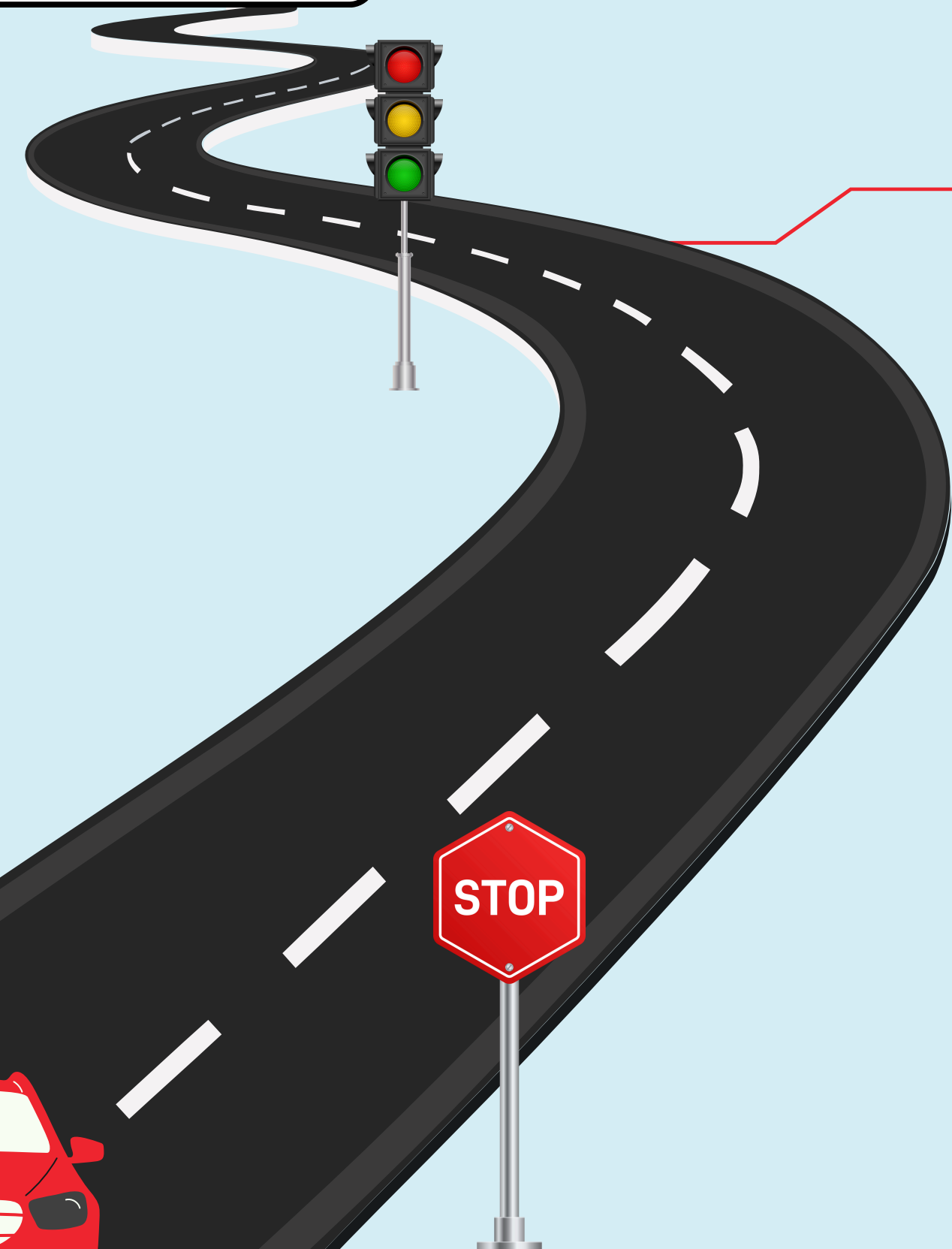


# CONGRAGULATIONS ON TAKING YOUR LICENSE!

DON'TS



# BE CAREFUL AROUND THESE CARS:



**THANK YOU! SPECIALLY**

**Abdellatif Hani, Lucas Hiroshi,  
Eduardo Scovino, Anyelle Queiroz**

**SDA**

**team members**

**Leen Aljamaan, Fatmah Merghelani ,Ghadi  
Alloqmani, Ghaida Aljumaie, Rawiah Alruwaili**



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