Congratulations! You passed!

TO PASS 80% or higher

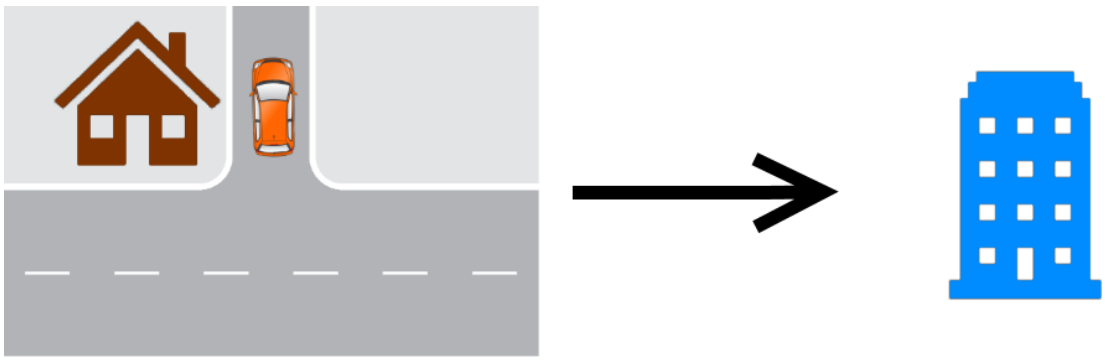
Keep Learning

GRADE
100%

Module 1: Graded Quiz

LATEST SUBMISSION GRADE
100%

1. **Scenario 1: You're at home and need to drive to work** **1 / 1 point**



During the trip, you will be performing OEDR tasks. Of the tasks below, which of the following is **not** an example of OEDR?

- (●) Maintaining a distance to a vehicle ahead
- ( ) Slowing down when seeing a construction zone ahead
- ( ) Pulling over upon hearing sirens
- ( ) Stopping at a red light

✓ **Correct**

Correct! Maintaining distance is not a detection and reaction procedure, it is a normal driving behavior.

2. Which of the following tasks are associated with **perception**? **1 / 1 point**

- [ ] Responding to traffic lights
- [ ] Planning routes on a map
- [x] Identifying road signs

Correct

Correct! Identifying road signs are associated with perception

- [x] Estimating the motion of other vehicles

Correct

Correct! Estimating the motion of other vehicles is associated with perception

3. Before leaving, you decide to check the weather. The forecast states that over the next few days there will be both sun and rain along with some fog. Assuming your vehicle exhibits Level 5 autonomy, which of the following **weather conditions** can your vehicle operate? **1 / 1 point**

- ( ) Clear and sunny
- ( ) Windy heavy rainfall
- ( ) Heavy Fog
- ( ) Light rainfall
- (•) All of the above

Correct

Correct! Level 5 autonomy can operate in any weather condition.

4. You enter your autonomous vehicle and it drives your usual route to work. While the vehicle is driving, you decide to take a nap. For **which levels of autonomy** is this safe? (Select all that apply) **1 / 1 point**

- [ ] 1
- [ ] 2
- [ ] 3
- [x] 4

Correct

Correct! Only level 4 and 5 autonomy can handle emergencies autonomously.

- [x] 5

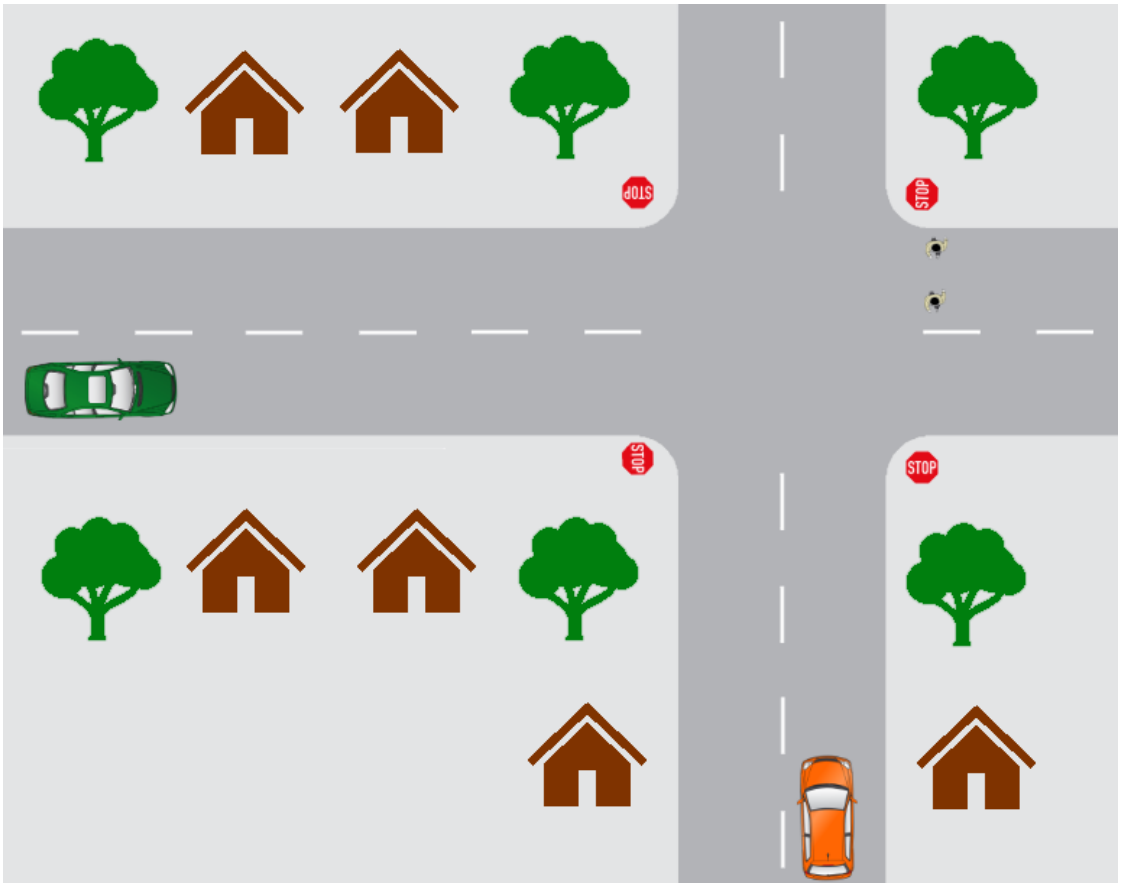
Correct

Correct! Only level 4 and 5 autonomy can handle emergencies autonomously.

5. **1 / 1 point**

Scenario 2: (Assume the car is driving on the right-hand side of the road) .

You're approaching an all ways stop sign and you want to make a right turn. Your vehicle is denoted in orange. There are 2 pedestrians currently crossing and another vehicle (denoted in green) approaching the stop sign from the left.



This task involves multiple considerations, which of them are **predictive planning**? Select all that apply.

- [x] Wait for the pedestrians to finish crossing before turning

  Correct

  Correct! Predictive planning deals with planning based on predictions of the actions of others.

- [ ] Gradually decelerate while reaching the stop sign

- [x] The green car arrives at the stop sign after you and plans to travel straight through the intersection. You choose to move first.

  Correct

Correct! Predictive planning deals with planning based on predictions of the actions of others.

- [ ] At a stop sign, stop and look both ways before proceeding

6. Here are some rules for driving at a stop sign. Which of the following is an appropriate **priority ranking**? **1 / 1 point**

1) For non all-way stop signs, stop at a point where you can see oncoming traffic without blocking the intersection

2) If there are pedestrians crossing, stop until they have crossed

3) If you reach a stop sign before another vehicle, you should move first if safe

- ( ) 1, 2, 3
- ( ) 3, 2, 1
- (•) 2, 1, 3
- ( ) 3, 1, 2
- ( ) 1, 3, 2

Correct

Correct! Prioritize safety.

7. Which of the following are **off-road objects**? (Select all that apply) **1 / 1 point**

- [x] Curbs

Correct

Correct! These are examples of off road objects.

- [x] Stop signs

Correct

Correct! These are examples of off road objects.

- [ ] Road markings
- [x] Trees

Correct

Correct! These are examples of off road objects.

- [ ] Pedestrians

8. Suppose your vehicle has **lane keeping assistance**, which of these objects are relevant for its performance? (Select all that apply) **1 / 1 point**

- [x] Curbs

Correct

Correct! Detecting road marks and curbs are needed for lane keeping.

- [ ] Pedestrians
- [x] Road markings

Correct

Correct! Detecting road markings and curbs are needed for lane keeping.

- [ ] Trees
- [ ] Stop signs

9. Which of the following sensors are used for the **lane keeping assistance**? (Select all that apply) **1 / 1 point**

- [x] Cameras

  Correct

  Correct! Detection and localization is needed for lane keeping.

- [ ] Barometers

- [x] IMU

  Correct

  Correct! Detection and localization is needed for lane keeping.

- [x] GPS

  Correct

  Correct! Detection and localization is needed for lane keeping.

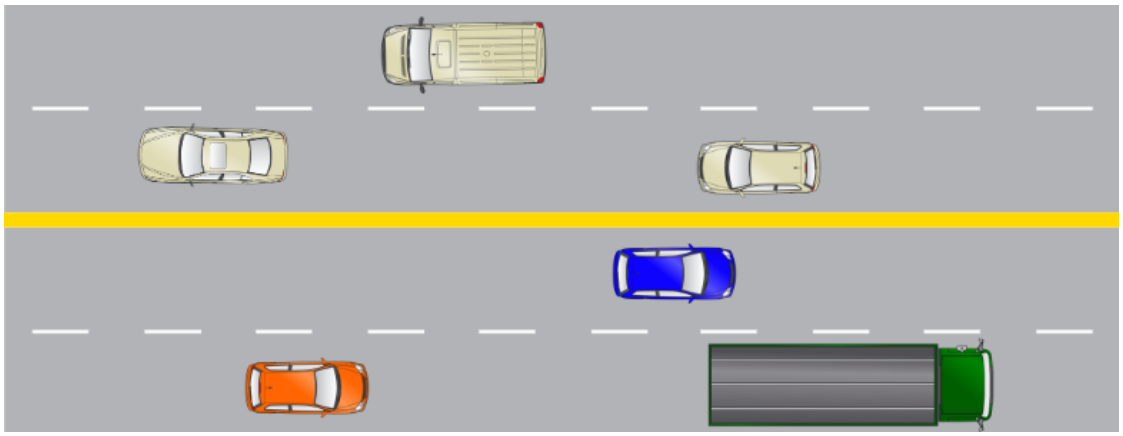
- [x] LIDAR

  Correct

  Correct! Detection and localization is needed for lane keeping.

10. **1 / 1 point**

Scenario 3: You are on the highway and you see a truck in front of you. Assume the car is driving on the right-hand side of the road. There is also a blue car beside the truck in the other lane.



Your vehicle follows the truck and maintains a constant distance away. What kind of **control** is this?

- ○ Lateral
- ◉ Longitudinal
- ○ Fallback
- ○ OEDR

✓ **Correct**

Correct! Distance keeping is a longitudinal control problem.

11. You decide to **change lanes** to pass a truck. What kind of decision is this? **1 / 1 point**

- ◉ Short term planning
- ○ Immediate
- ○ Long term planning
- ○ Rule-based planning
- ○ Reactive

✓ **Correct**

Correct! Lane changing is a short term task

Correct! Lane changing is a short term task.

12. Which of the following tasks are **rule-based planning**? (Select all that apply) **1 / 1 point**

- [ ] If the vehicle in front is going to slow down sharply, then avoid performing a lane change.
- [x] If there are vehicles directly beside us on the lane, it is unsafe to lane change.

✓ **Correct**

Correct! Rule based planning only considers the present state, not what vehicles will do next.

- [x] During a lane change, maintain our current speed or accelerate slightly

✓ **Correct**

Correct! Rule based planning only considers the present state, not what vehicles will do next.

13. Suppose the blue vehicle suddenly brakes and you decide to abort the lane change. If your vehicle can **respond automatically and remain in its own lane**, what is the minimum level of autonomy of your vehicle? **1 / 1 point**

- (•) 3
- ( ) 1
- ( ) 4
- ( ) 5
- ( ) 2

✓ **Correct**

Correct! Level 3 autonomy can perform OEDR.

14. The blue vehicle returns to normal speed and you can now safely change lanes. Your car is **performing the lane change**, what kind of control is this? **1 / 1 point**

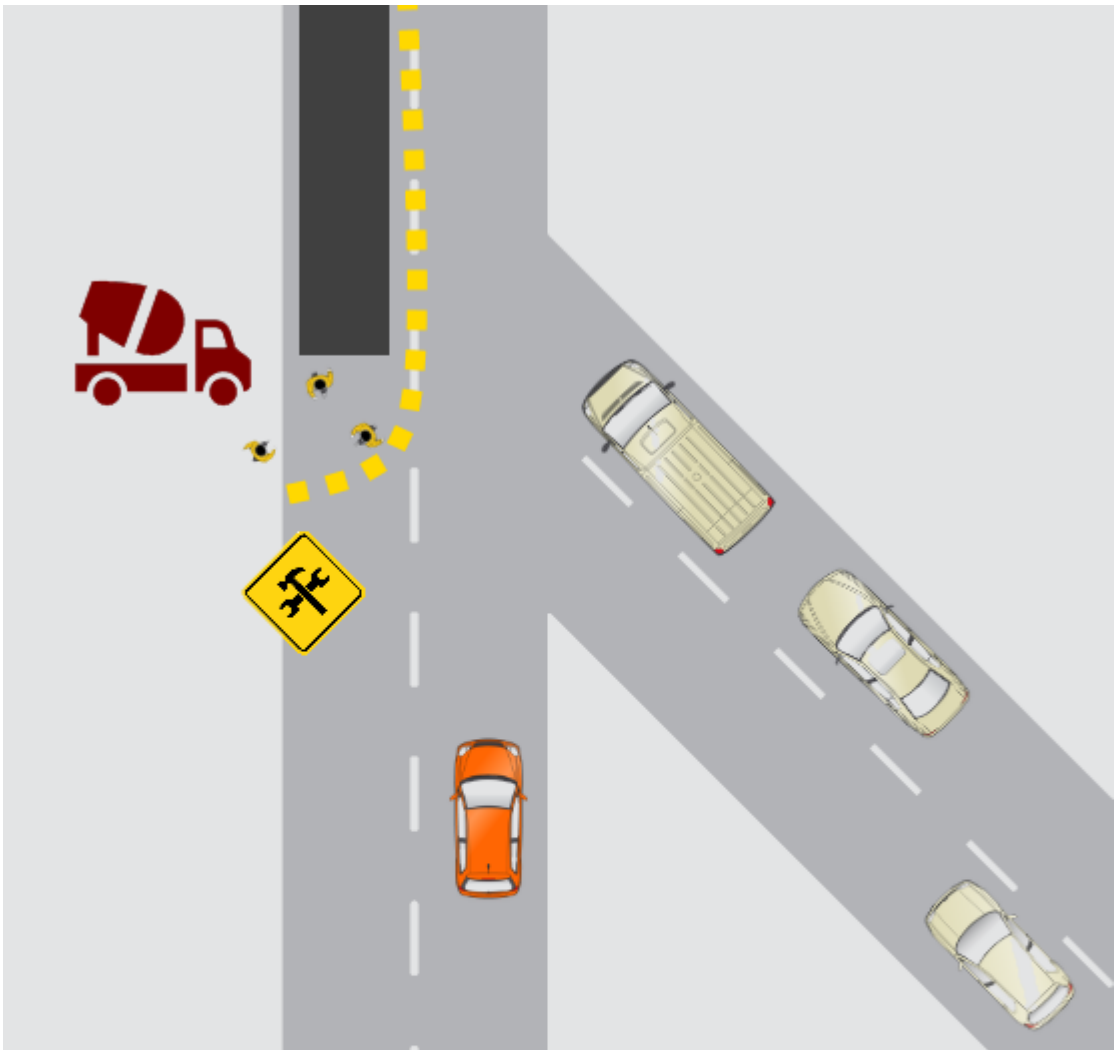
- ○ OEDR
- ○ Fallback
- ○ Longitudinal
- ◉ Lateral

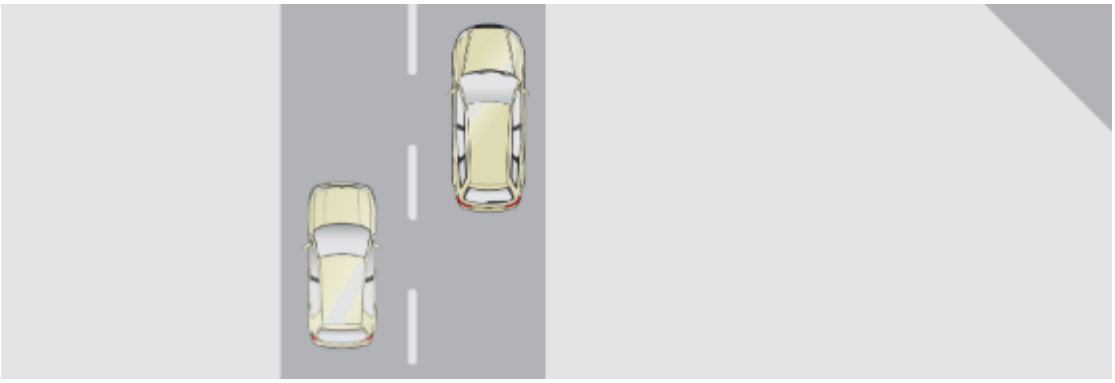
✓ **Correct**

Correct! Lane changing is a lateral control problem.

15. **Scenario 4:** You are almost at work but encounter a construction site. **1 / 1 point**

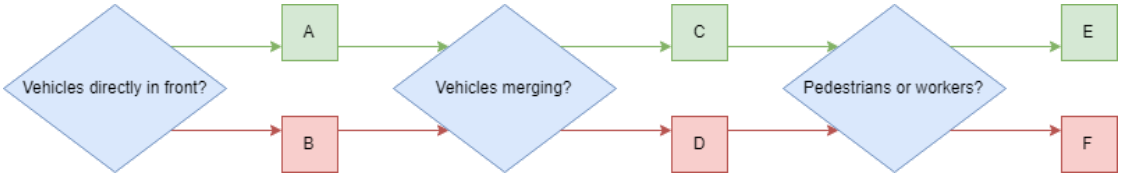
Assume the car is driving on the right-hand side of the road. Your vehicle is denoted in orange.





You see a construction site where the workers are repaving a road full of potholes. They are using jackhammers which can cause dust clouds.

You create the following decision tree for getting through the construction site. From the diagram, which of the following decisions should you make? **(green is true, red is false)**



- [ ] A (True)
- [x] B (False)

  ✓ **Correct**
  Correct!

- [x] C (True)

  ✓ **Correct**
  Correct!

- [ ] D (False)
- [x] E (True)

✓ **Correct**

Correct!

☐ F (False)

16. Here are a set of rules for making these decisions, **arrange them in an appropriate prioritization**. **1 / 1 point**

1) If there are no vehicles ahead, accelerate to the speed limit

2) Drive slowly in construction zones

3) If there are pedestrians or workers directly ahead in the current lane, stop

4) Yield to merging vehicles, if necessary

○ 1, 2, 3, 4

○ 2, 3, 4, 1

○ 3, 4, 1, 2

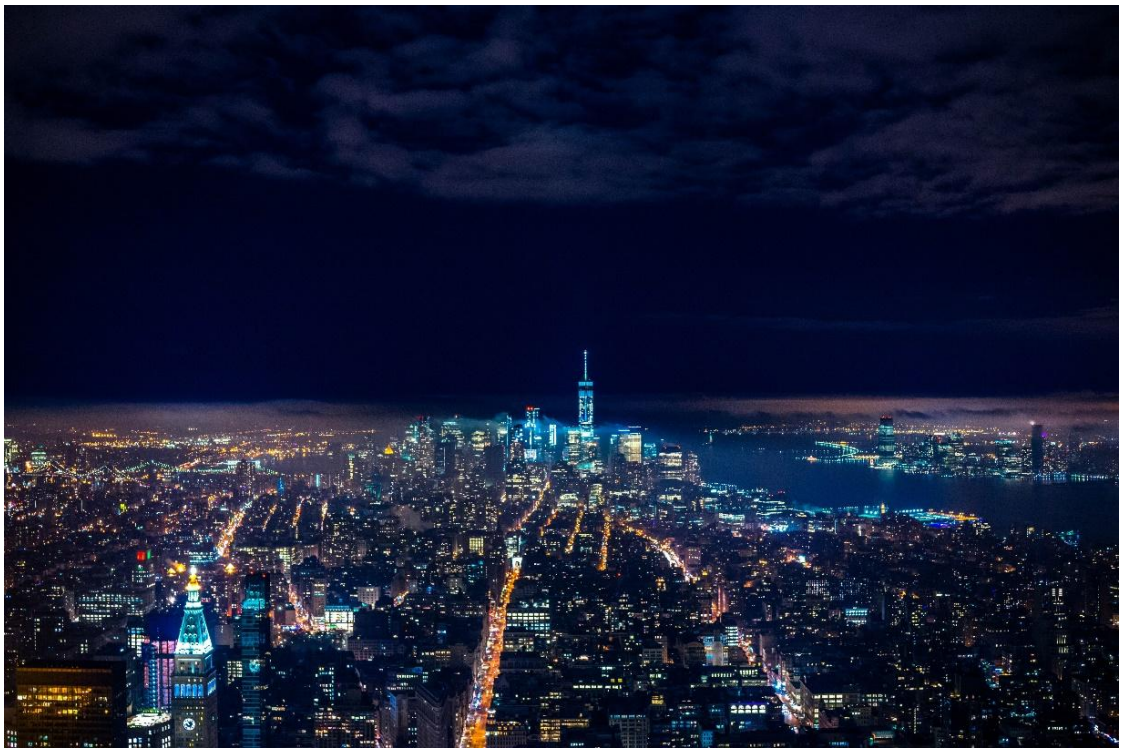
◉ 3, 4, 2, 1

✓ **Correct**

Correct! Prioritize safety in each case, yielding to pedestrians and then vehicles first, before defining acceptable travel speed.

17. **1 / 1 point**

Scenario 5: You're finished work and need to drive back home, but it's nighttime.



You plan a new path home on your GPS application to avoid the construction site, **what type of planning is this**?

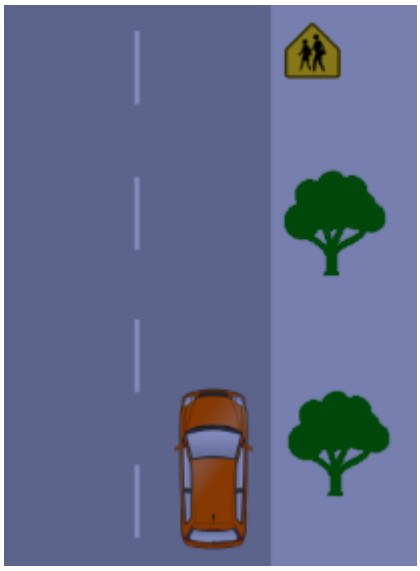
- ○ Rule based planning
- ◉ Long term planning
- ○ Short term planning
- ○ Immediate
- ○ Reactive

✓ **Correct**

Correct! Setting a path before driving is long term planning.

18. **1 / 1 point**

Your new path goes through a school zone and you see the school zone sign. You decide to slow down despite there being no pedestrians or children (it's nighttime). What sort of **planning** is this?



- ○ Immediate planning
- ◉ Rule based planning
- ○ Reactive planning
- ○ Short term planning
- ○ Long term planning

✓ **Correct**

Correct! The rule to slow down in school zones is being followed.