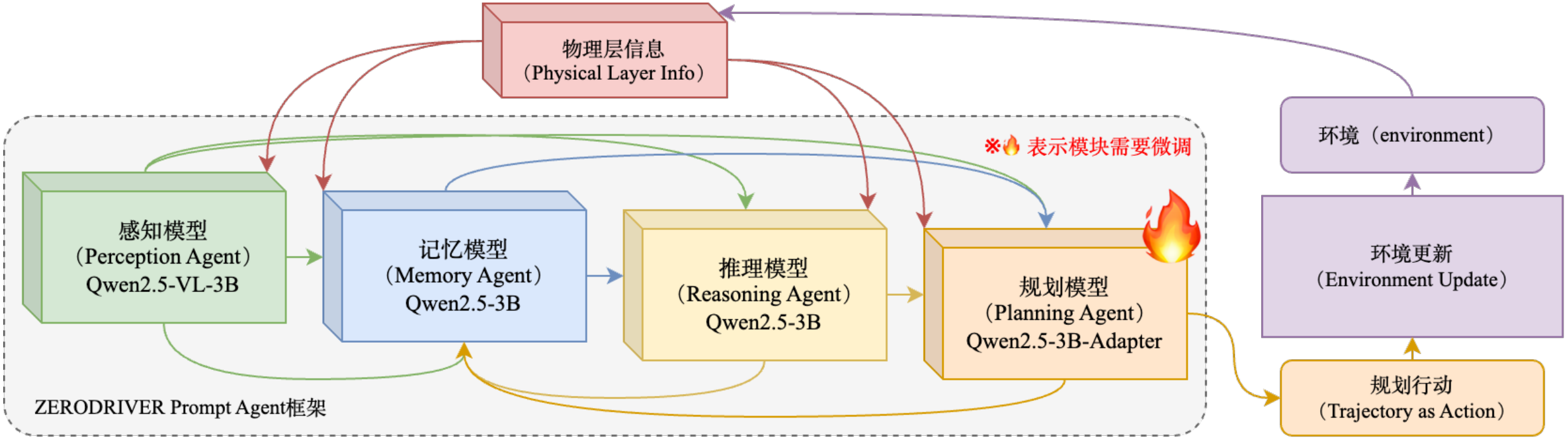
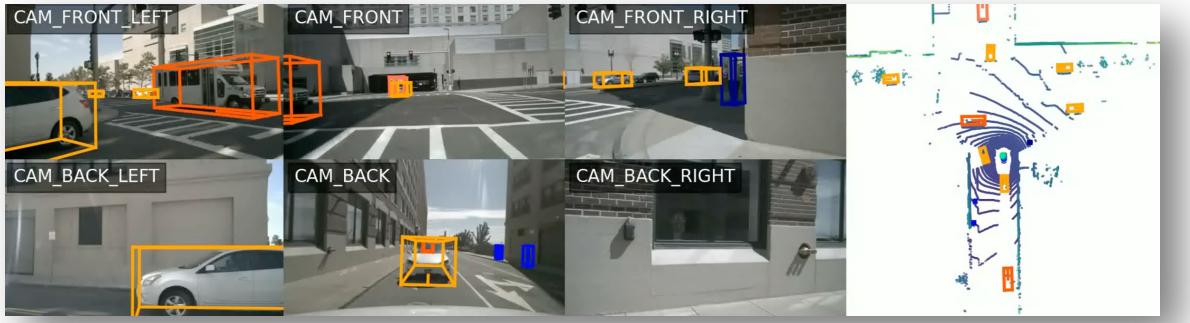
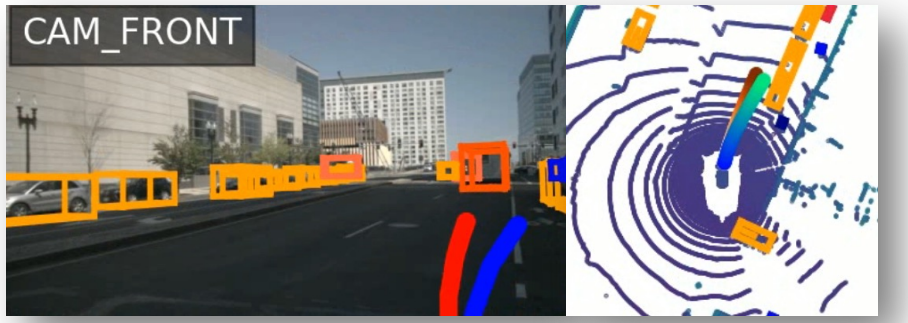
低频路径规划器 ZERODRIVER – 整体框架



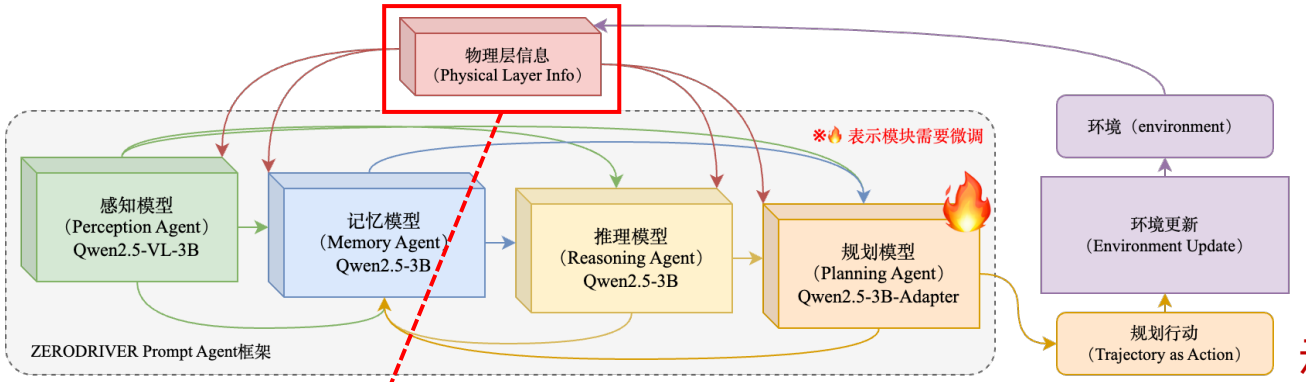
示例环境

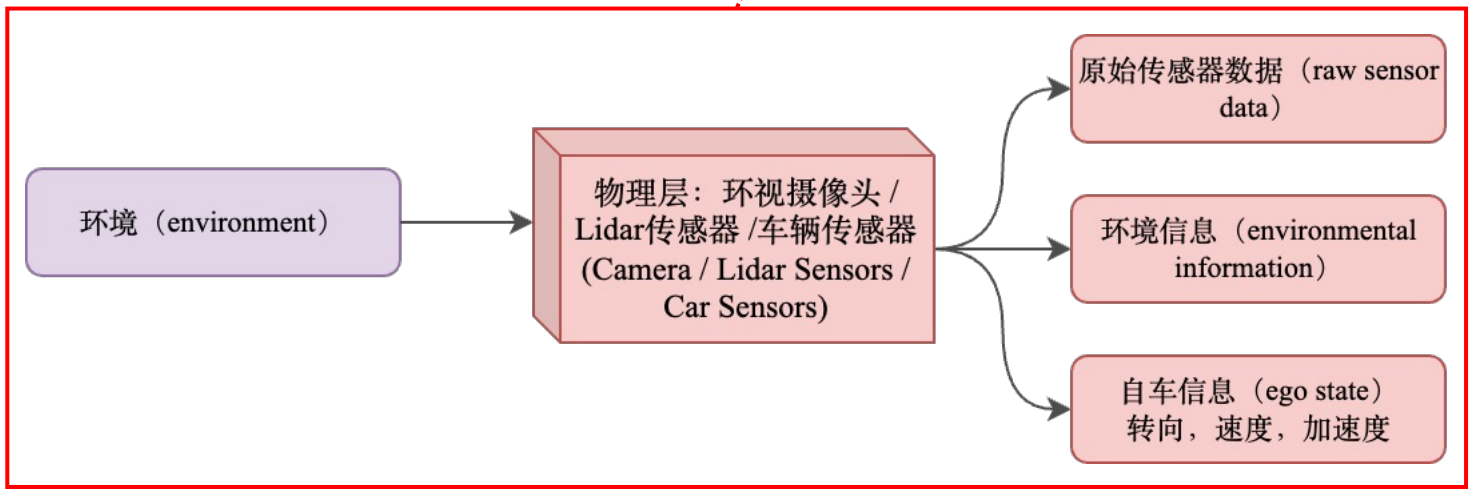


示例规划



低频路径规划器 ZERODRIVER – 物理层信息

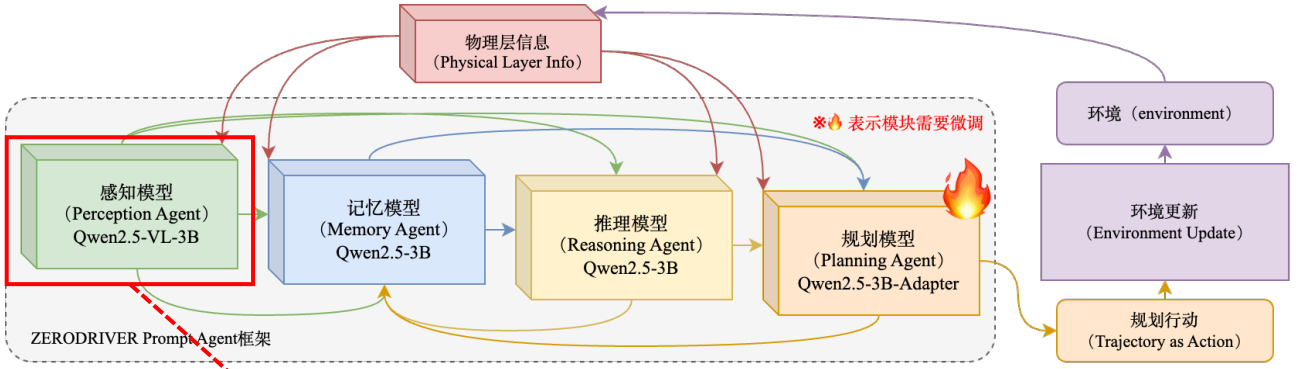


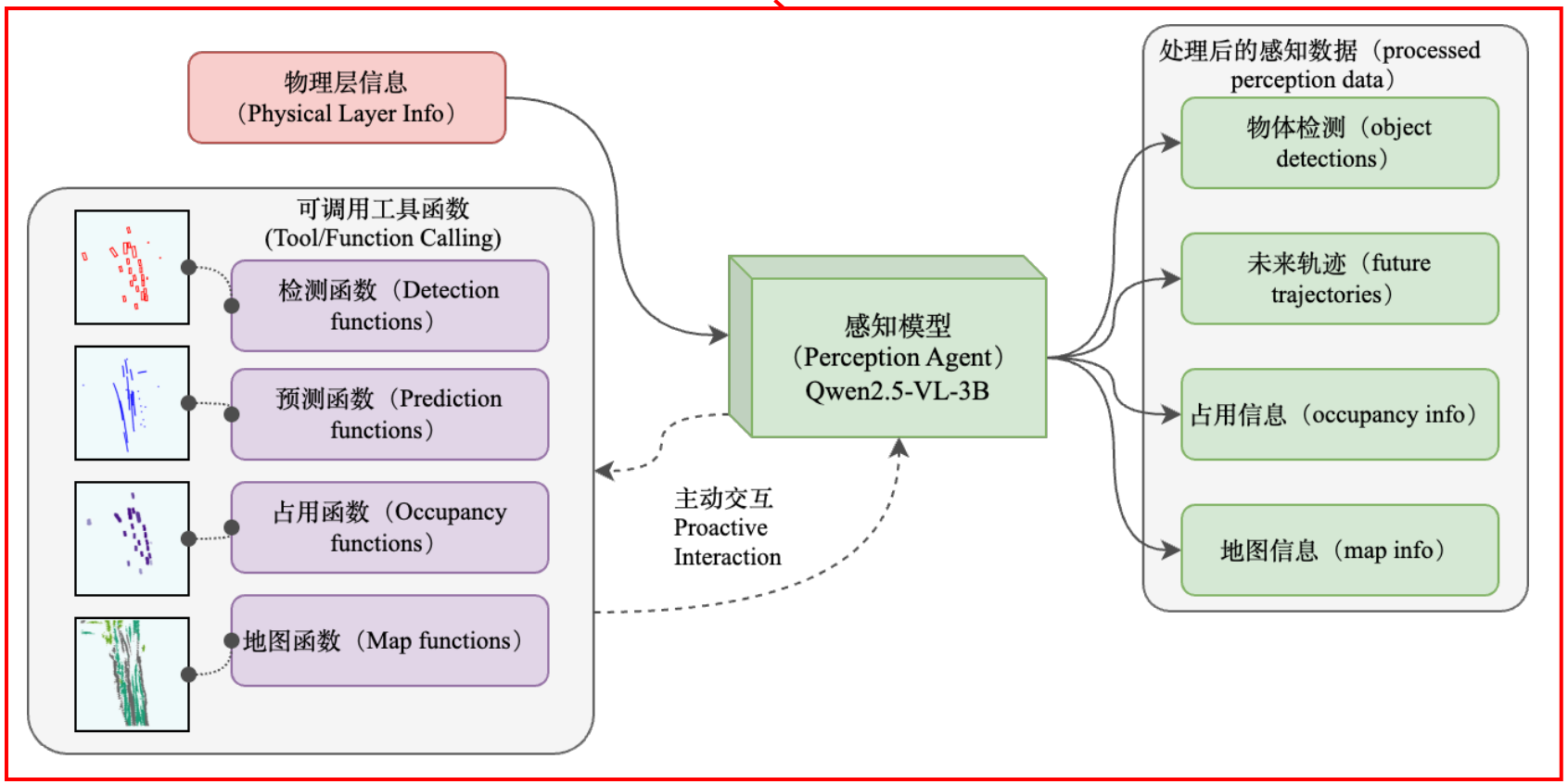


示例输出

```
Ego State
Model:
None
*****Ego States:*****
Current State:
- Velocity (vx,vy):
(-0.04,2.95)
- Heading Angular Velocity
(v_yaw): (0.01)
- Acceleration (ax,ay):
(0.18,0.74)
- Can Bus: (0.70,-0.36)
- Heading Speed: (2.46)
- Steering: (-0.56)
Historical Trajectory (last
2 seconds): [(1.19,-8.92),
(0.60,-7.16), (0.20,-5.18),
(0.01,-2.96)]
Mission Goal: FORWARD
```

低频路径规划器 ZERODRIVER – 感知模型



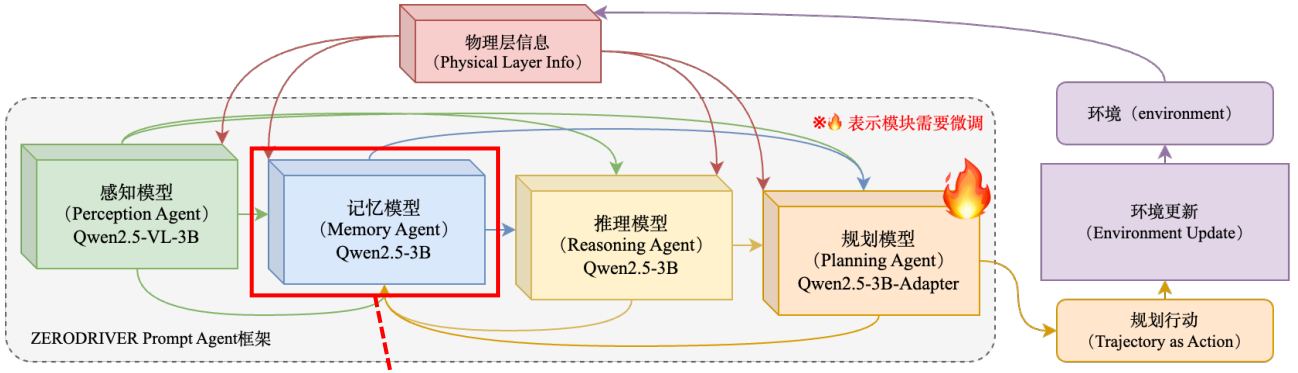


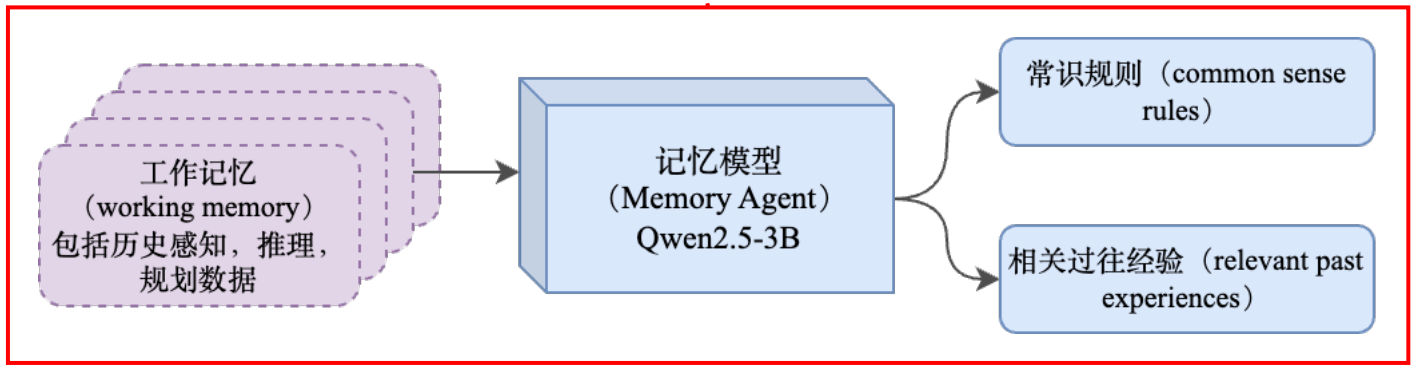
示例输出

Perception Agent

Model:
Qwen2.5(VL)+ToolCall
*****Perception Results:*****
Front object detections:
Front object detected, object type: car, object id: 0, position: (4.55, 5.93), size: (1.84, 4.37)
Front object detected, object type: car, object id: 3, position: (4.91, 10.65), size: (1.89, 4.52)
Front object detected, object type: car, object id: 10, position: (4.88, 10.56), size: (1.90, 4.52)
Front object detected, object type: car, object id: 11, position: (4.98, 15.59), size: (1.87, 4.46)
Front object detected, object type: car, object id: 22, position: (4.98, 15.59), size: (1.87, 4.46)
Future trajectories for specific objects:
Object type: car, object id: 0, future waypoint coordinates in 3s: [(4.55, 5.93), (4.55, 5.93), (4.54, 5.93), (4.55, 5.94), (4.55, 5.93), (4.55, 5.94)]
Object type: car, object id: 3, future waypoint coordinates in 3s: [(4.91, 10.64), (4.91, 10.64), (4.91, 10.64), (4.91, 10.64), (4.91, 10.64), (4.91, 10.65)]
Object type: car, object id: 10, future waypoint coordinates in 3s: [(4.87, 10.55), (4.88, 10.55), (4.87, 10.55), (4.87, 10.54), (4.88, 10.55), (4.87, 10.56)]
Object type: car, object id: 11, future waypoint coordinates in 3s: [(4.98, 15.58), (4.98, 15.58), (4.98, 15.57), (4.98, 15.57), (4.98, 15.57), (4.98, 15.58)]
Object type: car, object id: 22, future waypoint coordinates in 3s: [(4.98, 15.59), (4.98, 15.58), (4.98, 15.58), (4.98, 15.57), (4.98, 15.57), (4.98, 15.59)]

低频路径规划器 ZERODRIVER – 记忆模型

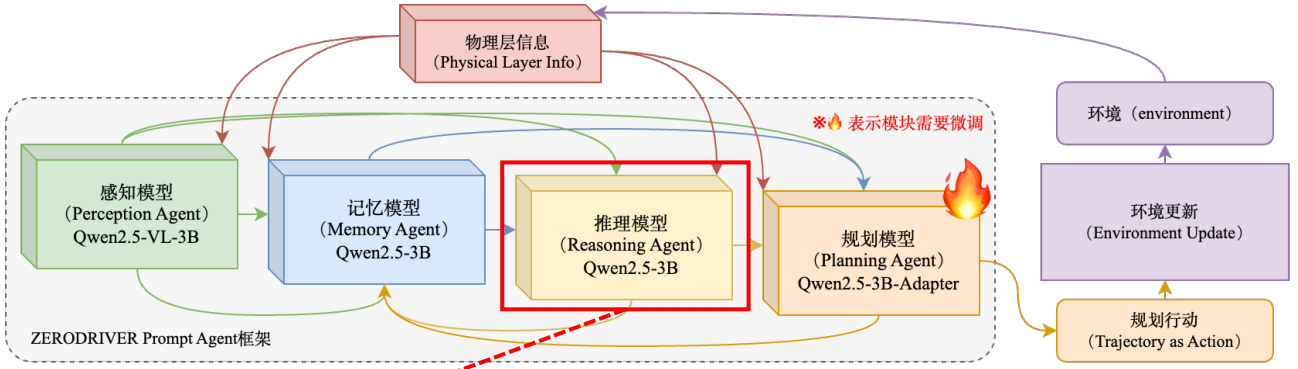


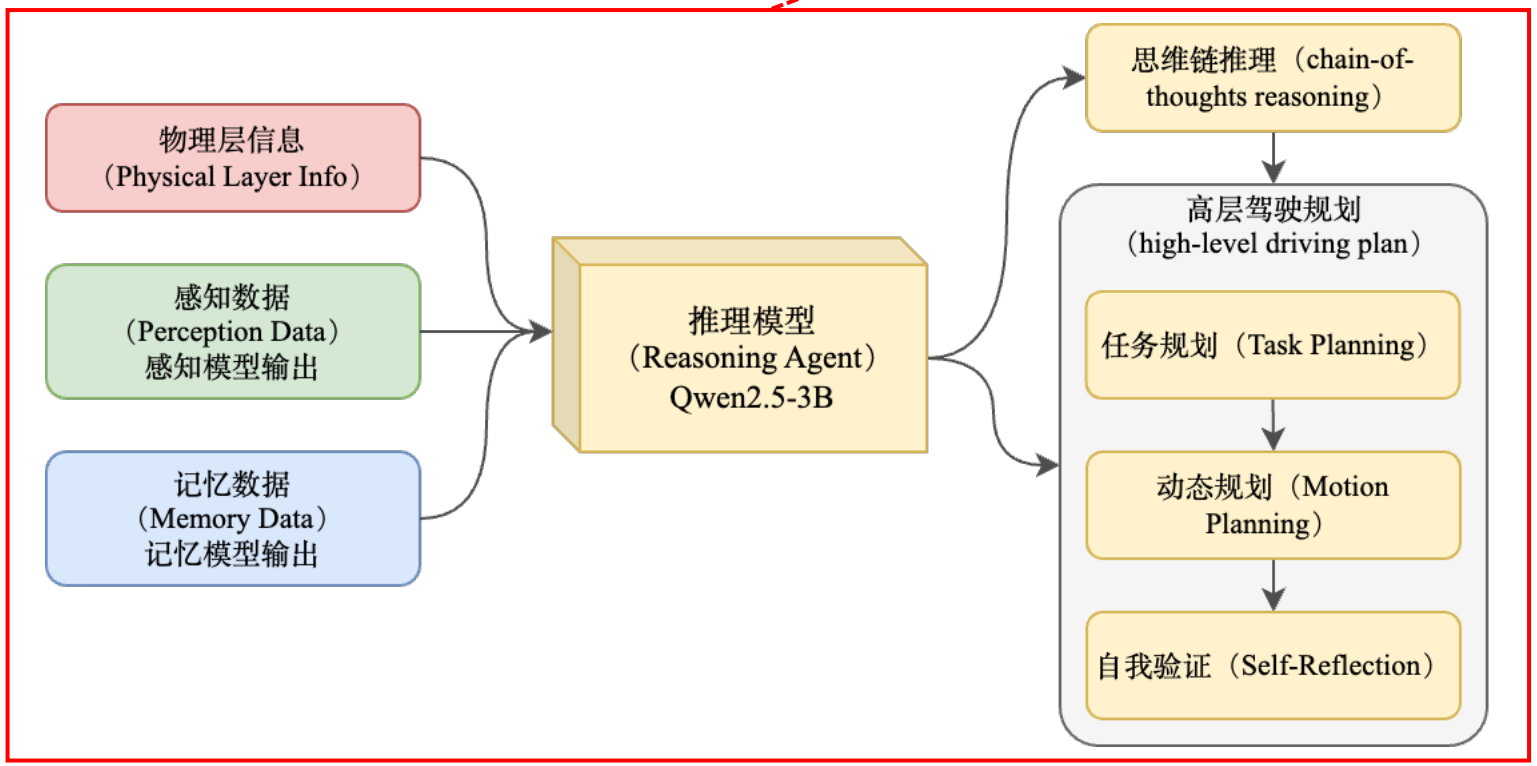


示例输出

```
Memory Agent
Model:
Qwen2.5
*****Past Driving Experience
for Reference:*****
Most similar driving
experience from memory with
confidence score: 0.35:
The planned trajectory in
this experience for your
reference:
[(0.13,2.65), (0.33,5.38),
(0.62,8.25), (0.96,11.22),
(1.34,14.17), (1.72,17.16)]
```

低频路径规划器 ZERODRIVER – 推理模型

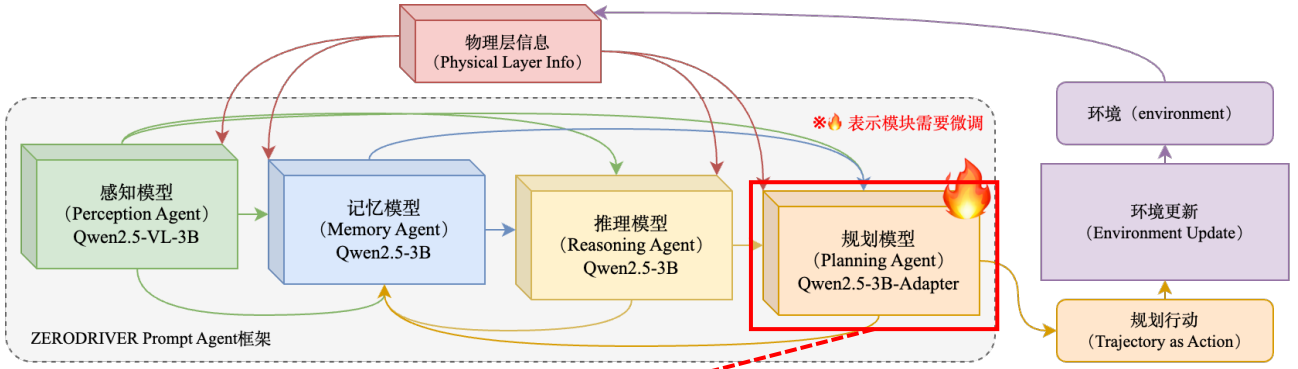


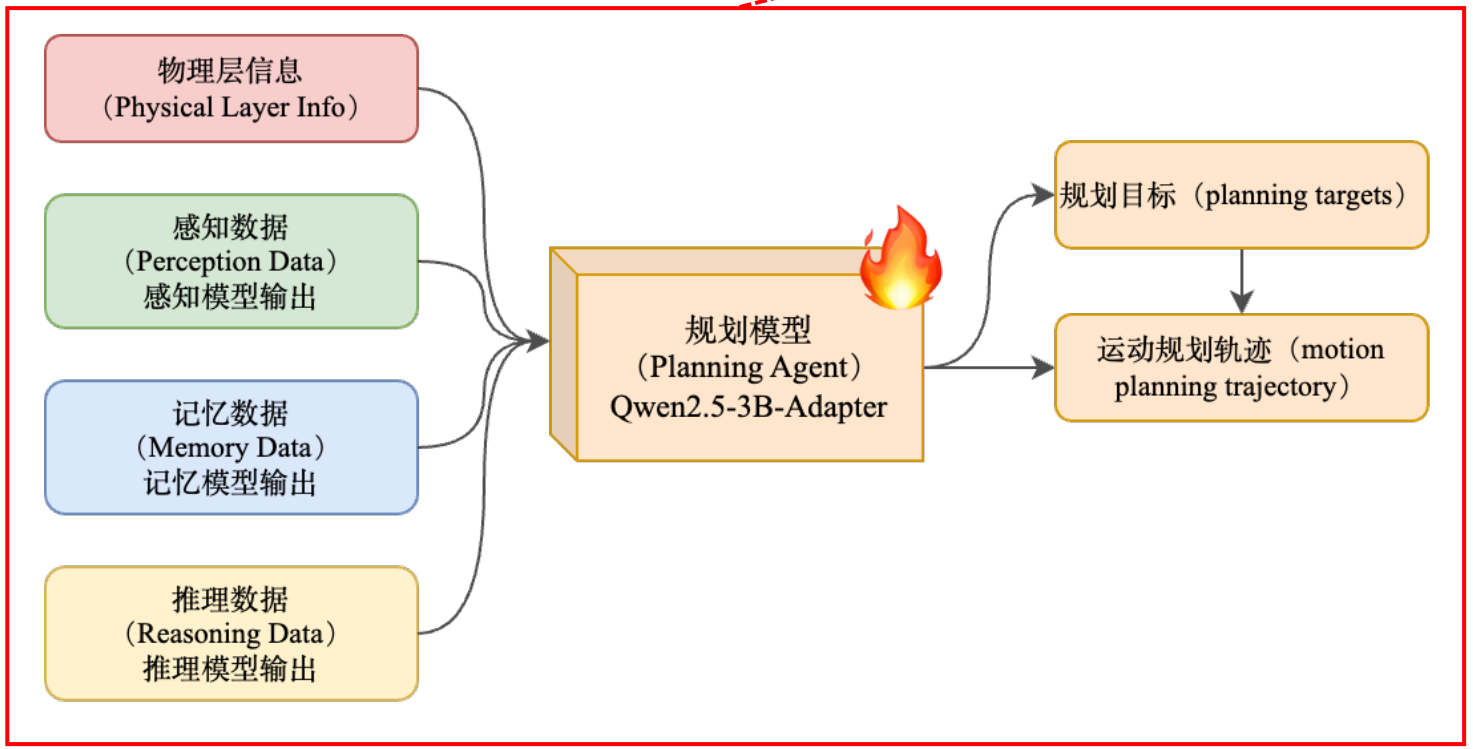


示例输出

```
Reasoning Agent
Model:
Qwen2.5
*****Chain of Thoughts Reasoning:*****
Thoughts:
- Notable Objects: car at (4.55,5.93)
Potential Effects: within the safe zone of the ego-vehicle at 0.5 second
- Notable Objects: car at (4.91,10.65)
Potential Effects: within the safe zone of the ego-vehicle at 0.5 second
- Notable Objects: car at (4.98,15.59)
Potential Effects: within the safe zone of the ego-vehicle at 0.5 second
Driving Plan: MOVE FORWARD WITH A CONSTANT SPEED
```

低频路径规划器 ZERODRIVER – 规划模型





示例输出

```
Planning Agent
Model:
Qwen2.5+Adapter
Planned
Trajectory:
[(0.11,2.55),
(0.31,5.28),
(0.58,8.07),
(0.86,10.83),
(1.18,13.65),
(1.50,16.49)]
```