

## PlantUML Sequence Diagram

### Root Cause Analysis

The logs indicate that a motorbike was attempting to park in the parking lot. Initially, the parking lot identified that a spot was available for the motorbike. However, upon trying to assign the spot, it encountered an error indicating that the parking lot was full. This discrepancy suggests a possible race condition where another vehicle might have occupied the spot between the initial availability check and the actual assignment.

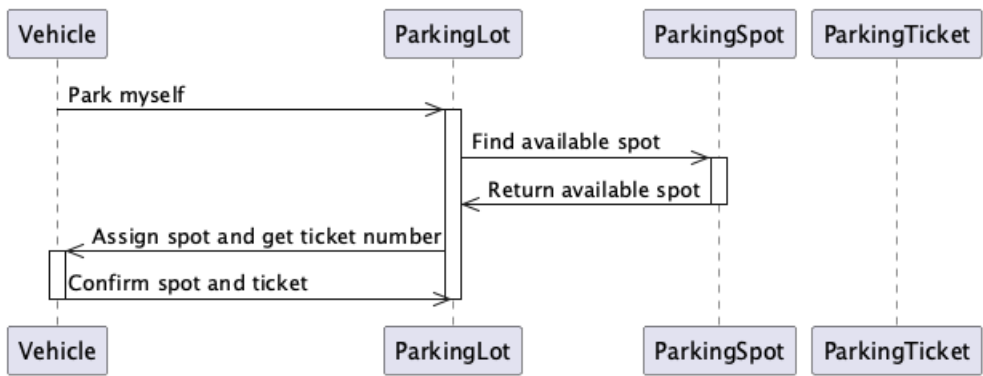
Here are some potential causes for this issue:

- **Concurrency Issues:** Multiple vehicles might be attempting to park simultaneously, leading to inconsistencies in available spots.
- **Data Consistency Issues:** There might be inconsistencies in the data store that manages parking spot availability.
- **Timing Issues:** There could be timing delays between the availability check and the actual assignment, allowing another vehicle to occupy the spot in the meantime.

### Recommendations

- Implement proper synchronization mechanisms to handle concurrent access to parking spot availability data.
- Regularly verify data consistency in the parking spot database.
- Minimize potential timing delays between availability checks and spot assignments.
- Consider using optimistic locking or similar techniques to prevent race conditions.
- Implement logging and monitoring to detect and diagnose such issues proactively.

By addressing these potential causes, you can improve the reliability and consistency of the parking lot system, ensuring accurate availability information and successful parking experiences for users.



### Logs:

```
2025-01-25 16:24:46,401 - root - INFO - class: ParkingLot, module:
src.parking.parkinglot, file: parkinglot.py, log: Creating new parking spot , line:
70
2025-01-25 16:24:46,401 - root - INFO - class: MotorBike, module:
src.vehicle.vehicle_types, file: vehicle_types.py, log: Car type is
VehicleType.MOTORBIKE, line: 24
2025-01-25 16:24:46,401 - root - INFO - class: ParkingLot, module:
src.parking.parkinglot, file: parkinglot.py, log: Parking full , line: 75
2025-01-25 16:24:46,401 - root - INFO - class: MotorBike, module:
src.vehicle.vehicle_types, file: vehicle_types.py, log: Assigning ticket None, line:
12
2025-01-25 16:24:46,401 - root - INFO - class: MotorBike, module:
src.vehicle.vehicle_types, file: vehicle_types.py, log: Car type is
VehicleType.MOTORBIKE, line: 24
2025-01-25 16:24:46,401 - root - INFO - class: ParkingTicket, module:
src.parking.parkingticket, file: parkingticket.py, log: Getting parking ticket 10,
line: 11
2025-01-25 16:24:46,401 - root - INFO - class: ParkingLot, module:
src.parking.parkinglot, file: parkinglot.py, log: Finding spot , line: 61
2025-01-25 16:24:46,401 - root - INFO - class: ParkingSpot, module:
src.parking.parkingspot, file: parkingspot.py, log: Parking spot assigned., line: 21
```

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