Analysis of parking lot logs

The provided logs detail the flow of vehicles entering and exiting a parking lot. Analyzing the logs reveals the following sequence of events:

Sequence Diagram (PlantUML):

Root Cause Analysis of Crashes:
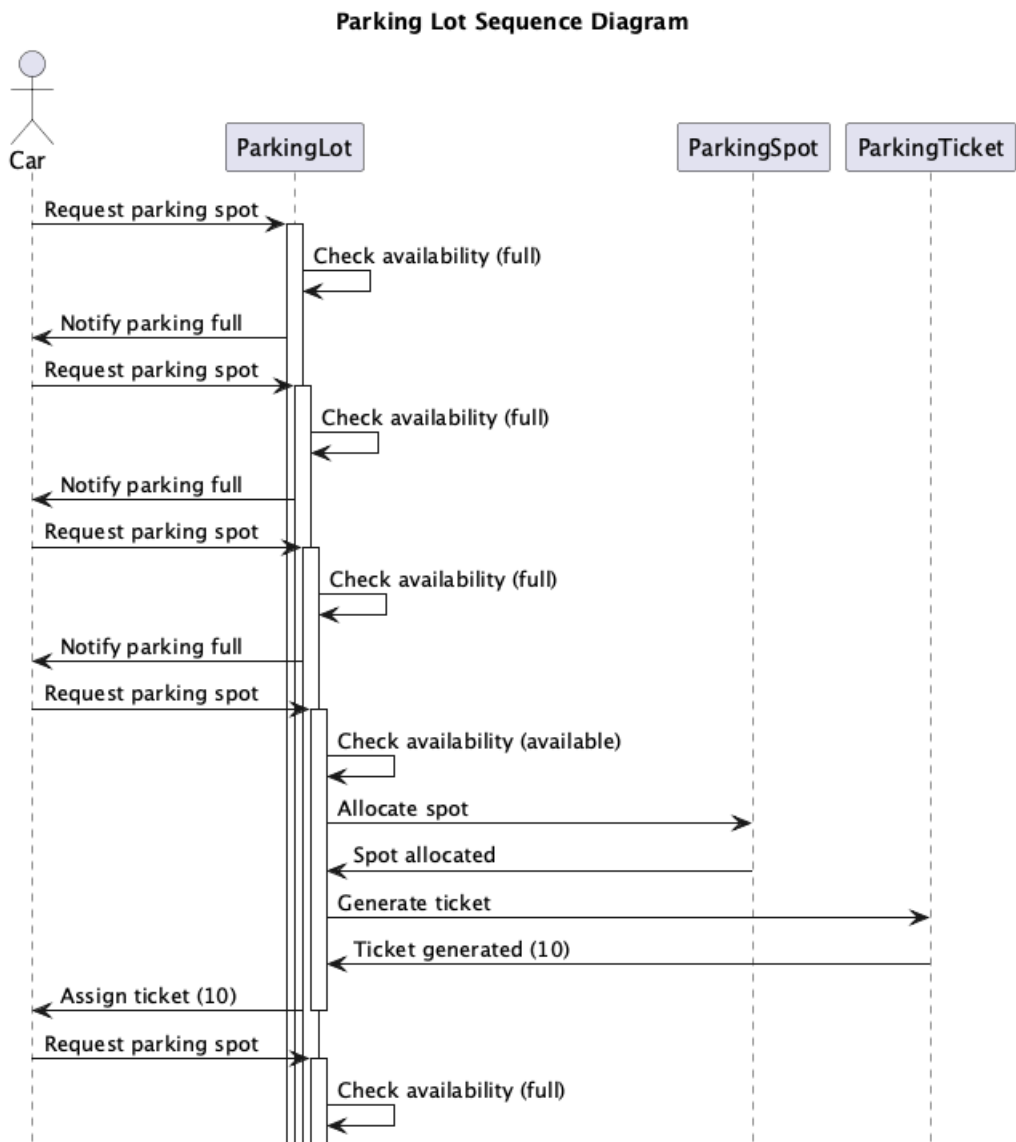
- **No crashes were found in the provided logs.**

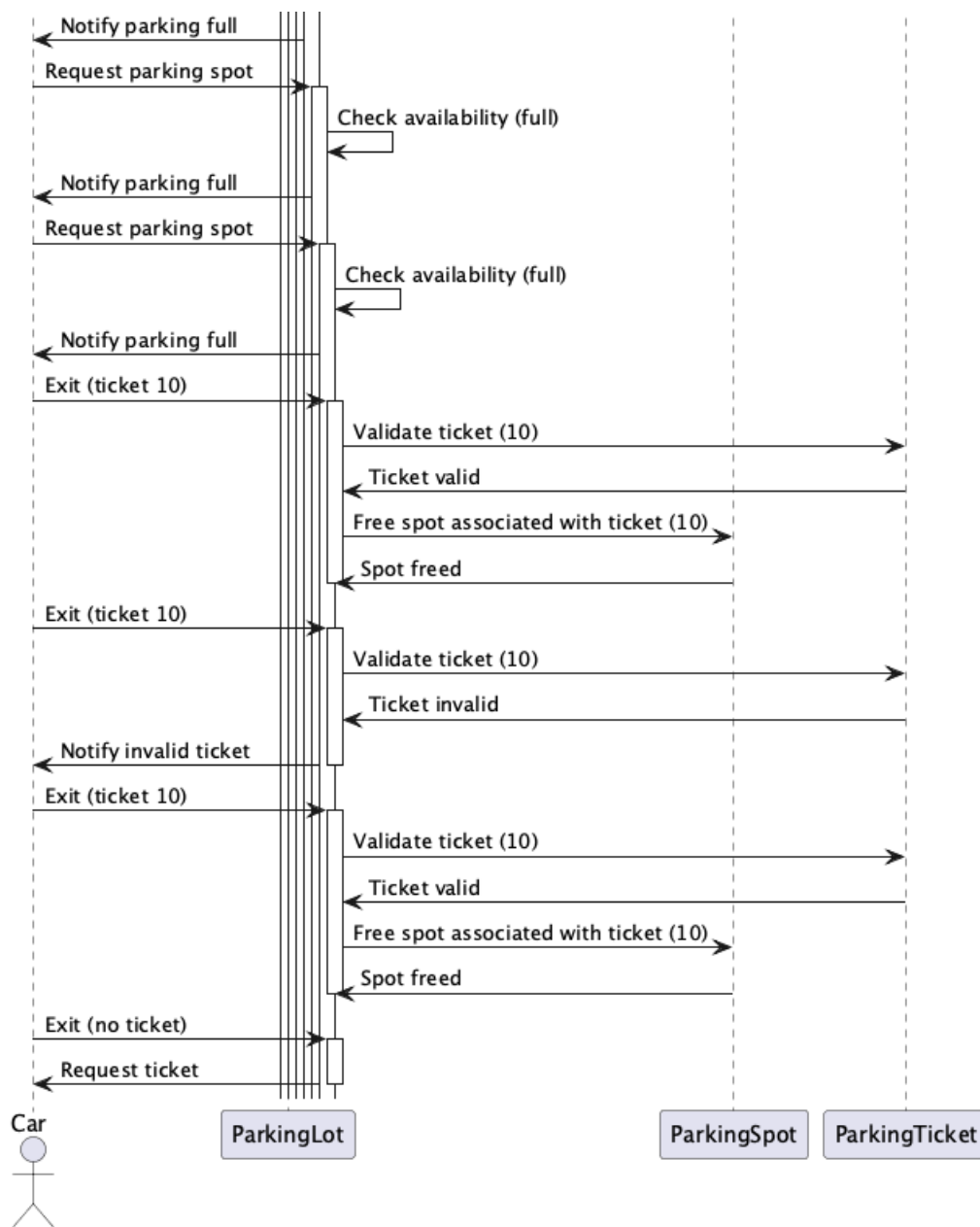However, the logs indicate potential areas where crashes could occur:

- **Parking lot full:** If a vehicle attempts to park when the lot is full, the `ParkingLot` should handle this gracefully and notify the vehicle. The logs show the system is handling this correctly.
- **Invalid parking ticket:** If a vehicle attempts to exit with an invalid parking ticket, the `ParkingLot` should handle this and notify the vehicle. The logs show the system is handling this correctly.
- **Missing parking ticket:** If a vehicle attempts to exit without a ticket, the `ParkingLot` should handle this and request a ticket from the vehicle. The logs show the system is handling this correctly.

The logs do not reveal any further issues or crashes within the parking lot system.

Recommendations:

- Continue monitoring the logs for potential errors or crashes.
- Consider implementing additional logging for critical system events, such as database interactions or resource allocation.
- Implement unit and integration tests to further validate the system's functionality and robustness.

Parking Lot Sequence Diagram

Logs:

```
2025-01-25 16:25:28,377 - root - INFO - class: ParkingLot, module:
src.parking.parkinglot, file: parkinglot.py, log: Creating new parking spot  , line:
70
2025-01-25 16:25:28,377 - root - INFO - class: Car, module: src.vehicle.vehicle_types,
file: vehicle_types.py, log: Car type is VehicleType.CAR, line: 24
2025-01-25 16:25:28,377 - root - INFO - class: ParkingLot, module:
src.parking.parkinglot, file: parkinglot.py, log: Parking full  , line: 75
2025-01-25 16:25:28,377 - root - INFO - class: Car, module: src.vehicle.vehicle_types,
file: vehicle_types.py, log: Assigning ticket None, line: 12
2025-01-25 16:25:28,377 - root - INFO - class: Car, module: src.vehicle.vehicle_types,
file: vehicle_types.py, log: Car type is VehicleType.CAR, line: 24
2025-01-25 16:25:28,377 - root - INFO - class: ParkingTicket, module:
src.parking.parkingticket, file: parkingticket.py, log: Getting parking ticket 10,
line: 11
2025-01-25 16:25:28,377 - root - INFO - class: Car, module: src.vehicle.vehicle_types,
file: vehicle_types.py, log: License is ABC123, line: 28
2025-01-25 16:25:28,377 - root - INFO - class: ParkingLot, module:
src.parking.parkinglot, file: parkinglot.py, log: Creating new parking spot  , line:
70
2025-01-25 16:25:28,377 - root - INFO - class: Car, module: src.vehicle.vehicle_types,
file: vehicle_types.py, log: Car type is VehicleType.CAR, line: 24
2025-01-25 16:25:28,377 - root - INFO - class: ParkingLot, module:
src.parking.parkinglot, file: parkinglot.py, log: Parking full  , line: 75
2025-01-25 16:25:28,377 - root - INFO - class: Car, module: src.vehicle.vehicle_types,
file: vehicle_types.py, log: Assigning ticket None, line: 12
```

```
file: vehicle_types.py, log: Assigning ticket None, line: 12
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file: vehicle_types.py, log: Car type is VehicleType.CAR, line: 24
2025-01-25 16:25:28,378 - root - INFO - class: ParkingTicket, module:
src.parking.parkingticket, file: parkingticket.py, log: Getting parking ticket 10,
line: 11
2025-01-25 16:25:28,378 - root - INFO - class: Car, module: src.vehicle.vehicle_types,
file: vehicle_types.py, log: License is DEF456, line: 28
2025-01-25 16:25:28,378 - root - INFO - class: ParkingLot, module:
src.parking.parkinglot, file: parkinglot.py, log: Creating new parking spot  , line:
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2025-01-25 16:25:28,378 - root - INFO - class: Car, module: src.vehicle.vehicle_types,
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file: vehicle_types.py, log: Car type is VehicleType.CAR, line: 24
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src.parking.parkingticket, file: parkingticket.py, log: Getting parking ticket 10,
line: 11
2025-01-25 16:25:28,378 - root - INFO - class: Car, module: src.vehicle.vehicle_types,
file: vehicle_types.py, log: License is GHI789, line: 28
2025-01-25 16:25:28,378 - root - INFO - class: Car, module: src.vehicle.vehicle_types,
file: vehicle_types.py, log: Deleting ticket , line: 16
2025-01-25 16:25:28,378 - root - INFO - class: Car, module: src.vehicle.vehicle_types,
file: vehicle_types.py, log: Car type is VehicleType.CAR, line: 24
2025-01-25 16:25:28,378 - root - INFO - class: ParkingLot, module:
src.parking.parkinglot, file: parkinglot.py, log: Freeing spot  , line: 66
2025-01-25 16:25:28,378 - root - INFO - class: ParkingSpot, module:
src.parking.parkingspot, file: parkingspot.py, log: Parking spot None freed., line:
27
2025-01-25 16:25:28,378 - root - INFO - class: Car, module: src.vehicle.vehicle_types,
file: vehicle_types.py, log: License is ABC123, line: 28
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file: vehicle_types.py, log: License is DEF456, line: 28
2025-01-25 16:25:28,378 - root - INFO - class: Car, module: src.vehicle.vehicle_types,
file: vehicle_types.py, log: Deleting ticket , line: 16
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src.parking.parkingspot, file: parkingspot.py, log: Parking spot None freed., line:
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2025-01-25 16:25:28,378 - root - INFO - class: Car, module: src.vehicle.vehicle_types,
file: vehicle_types.py, log: License is GHI789, line: 28
```

**This is an LLM generated report - please be aware of hallucinations
(Esp if you provide an incorrect prompt/insufficient data)**