Active Park Assist 2 Requirements

*Human Machine Interface (HMI)*
1. The customer must be able to select between parallel and perpendicular parking
2. The customer must activate the Active Park Assist Feature through the HMI
3. The HMI must display the available parking spots
   a. Customer must be able to verify which spot they would like to choose to park at
4. The HMI must indicate to the customer the state of the parking process
   a. The HMI must indicate if the process was completed successfully
   b. The HMI must indicate if the process was aborted

*Active Park Assist System*
1. The system must be able to shift gears when parking
2. The system must be able to take full control of the vehicle’s driving capabilities
   a. The system must be able to accelerate the vehicle
   b. The system must not accelerate the vehicle to a speed greater than or equal to 5mph
   c. The system must be able to brake the vehicle
   d. The system must be able to steer the vehicle
   e. The vehicle must be able to shift the vehicle into reverse, forward, and park
3. The system must be able to find a parking spot large enough for the vehicle
   a. While parallel parking, the system must be able to identify a parking spot if it is 1.2 times the length of the vehicle

*General*
1. Must have ultrasonic sensors on both sides of the vehicle
   a. The system must be able to use the ultrasonic sensors to calculate the distance between two objects
2. The parking process must be carried out within a reasonable amount of time
3. The system must shift the vehicle into park when the process successfully completes
4. The system must deactivate, returning control to the customer, when the process successfully completes
5. The vehicle must have cameras at both the front and rear

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Safety

1. The customer must be able to activate/deactivate the system at will
   a. The customer must be able to abort the parking process by applying the brake pedal

2. The system must detect and avoid obstacles in the path of the vehicle
   a. The system must be able to stop the vehicle if an obstacle moves into the vehicle's path
   b. The system must be able to

3. The system must verify that the customer initiated the request

4. The system must detect faults in the system
   a. The system must be able to detect a single point failure of any sensor