

# Semester Project: Requirements

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## 1 Requirements

- Collision Avoidance
  - Must be able to avoid causing a collision if possible.
  - Every command must eventually resolve.
  - If collision is determined to be inevitable, must take action to minimize damage.
- Auto Parking
  - Must be able to determine if parallel parking or normal parking.
  - Must avoid collisions.
  - Commands must eventually resolve.
- Adaptive Speed Control
  - Will adjust speed to move with flow of traffic up to a threshold.
  - Will maintain safe following distance at all times.
  - If no traffic ahead or behind, will maintain speed limit.
  - If merging traffic coming into lane, will either speed up or slow down depending on traffic and position, to allow merge space.
  - Will not exceed a threshold acceleration.
- Higher Level System Command Manager
  - Only one command can be issued at any given time.
  - Must warn user when control is taken.
  - Allow command based on safety.
  - Every command request will eventually be resolved in some manner.
  - User will always be able to eventually make a command.