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|  |  | **Development Plan** | **Test/Demonstration Plan** |
| **Feb** | 10 | * Lane Departure Detection * Detect driver departing lane * Parking Collision Detection * Detect objects in proximity * Project Description * Create rough draft of project description for brochure * Hardware Purchases | * System will detect when driver is in the lane. * System detects when driver is out of the lane. * System will detect objects. * Rough draft of the project description will be posted on GitHub. * Purchase hardware components as needed to complete tasks. |
|  | 17 | * Lane Departure Detection * Signal driver with audible tone * Parking Collision Detection * Signal driver object in proximity * Music Player * User can play music * OBD * Configure to receive live engine data * Project Description * Final copy of project description for brochure * Hardware Purchases | * User will hear audible tone when departing lane. * User will hear audible tone when in close proximity to an object. * User will be able to hear music being played. * System will receive live engine data. * Final copy of project description will be sent to Dr. Na. * Final copy of project description will be posted on GitHub. * Purchase hardware components as needed to complete tasks. |
|  | 24 | * Lane Departure Detection * No lane lines detected * Parking Collision Detection * Handle system malfunction * Music Player * User can play previous and next songs * User can change volume of song * User can change play point of song * GPS * GPS receive destination, in correct format * GPS gives turn by turn directions * OBD * Configure to receive Diagnostic Trouble Codes and explanations * Build GUI * Build basic interface per GUI prototype images * Hardware Purchases | * System will detect when no lane lines are available. * User will hear distinct audible tone when system has malfunctioned. * System will attempt to fix the malfunction by power cycling. * User will be able to play next and previous songs. * User will be able to change the volume of currently playing song. * User will be able to change the play point of the currently planning song. * System will receive destination information. * System will give turn by turn directions. * System will receive Diagnostic Trouble Code and explanations. * User will be able to see the GUI and change screens. * Purchase hardware components as needed to complete tasks. |
| **Mar** | 2 | * Lane Departure Detection * Driver changing lanes * Parking Collision Detection * Handle system failure * Music Player * Functionality when user does not select song * Functionality when only 1 song is loaded * GPS * Address validation (found on maps and valid) * OBD * User able to clear Diagnostic Trouble Codes * Build GUI * Configure GUI to interact with Music Player * Hardware Purchases | * System will detect when driver is changing lanes. * User will not hear audible tone when changing lanes. * User will not hear audible tone when in proximity to an object. * When no song is selected, User will only be able to select the Select Album button. * When only 1 song is loaded, user will not be able to play next or previous songs. * System will check destination is found on maps. * System will check destination is valid. * User will be able to clear Diagnostic Trouble Codes. * User will be able to play music with Music Player using the GUI. * User will be able to change songs with the Music Player GUI screen. * User will see only the Select Album button, in the Music Player GUI screen, when no album is currently selected. * User will not be able to play next or previous song, in the Music Player GUI screen when only 1 song is loaded. * Purchase hardware components as needed to complete tasks. |
|  | 9 | * Music Player * Player displays frequency bars * Player displays Album Cover image * Player displays stock image when no cover available. * Player displays tag data. * Player displays Unknown when no tag data available. * GPS * Configure GPS Avoidance options. * OBD * Display error when connection to car’s OBD is unavailable * Display error when no engine codes found * Display error when system is unable to clear engine codes * Build GUI * Configure GUI to interact with Music Player * Configure GUI to interact with GPS * Hardware Purchases | * User will see frequency bars in Music Player GUI screen. * User will see Album Cover Images in Music Player GUI screen. * User will see Stock Album Cover Image if none is provided in Music Player GUI screen. * User will see tag information in Music Player GUI screen. * User will not be able to see tag information if none is provided in Music Player GUI screen. * System will reroute user around GPS Avoidance options selected. * System will display an error when connection to car’s OBD is not available. * System will display an error when no engine codes are found. * System will display an error when it is unable to clear engine codes. * User will be able to interact with GPS via GPS GUI screen. * User will be able to input destination address into GPS GUI screen. * User will be able to see GPS Turn by Turn directions. * Purchase hardware components as needed to complete tasks. |
|  | 16 | * Build GUI * Configure GUI to interact with OBD * Installation * Lane Departure Detection Camera * ~~Parking Sensor~~ (Arduino Board issue) * Pi * Upload/Download Code * Lane Detection * ~~Parking Sensor~~ * Music Player * ~~GPS~~ * OBD * Develop Test cases * Lane Departure Detection * Parking Collision Detection | * User will be able to interact with OBD GUI screen. * User will receive error messages from the OBD. * User will be able to clear engine codes via OBD GUI screen. * User will be able to view live engine data on OBD GUI screen. * Lane Detection Camera will be mounted/installed in motor vehicle. * ~~Parking Collision Detection hardware will be mounted/installed in motor vehicle~~. * Raspberry Pi will be mounted/installed in motor vehicle. * Lane Departure Detection software will be installed on Raspberry Pi. * ~~Parking Collision Detection Software will be installed on Raspberry Pi.~~ * Music Player Software will be installed on Raspberry Pi. * ~~GPS Software will be installed on Raspberry Pi.~~ * OBD Software will be installed on Raspberry Pi. * Lane Departure Detection Test Cases will be created. * Parking Collision Detection Test Cases will be created. |
|  | 23 | * Develop Test cases * Music Player * GPS * OBD | * Music Player Test Cases will be created. * GPS Test Cases will be created. * OBD Test Cases will be created. |
|  | 30 | * Installation * Parking Sensor * Upload/Download code * Parking Collision Detection * GPS * GPS * Create Mock Coord Driver prog. | * Parking Collision Detection hardware will be mounted/installed in motor vehicle. * Parking Collision Detection Software will be installed on Raspberry Pi. * GPS Software will be installed on Raspberry Pi. * MCD will mimic driver driving around Los Angeles. |
| **Apr** | 6 | * Testing * Run Lane Detection Test Cases * Run Parking Sensor Test Cases | * Lane Departure Test Cases will be run. * Lane Departure Test Case results will be documented. * Parking Collision Detection Test Cases will be run. * Parking Collision Detection Test Case results will be documented. |
|  | 13 | * Testing * Run Music Player Test Cases * Run GPS Test Cases | * Music Player Test Cases will be run. * Music Player Test Case results will be documented. * GPS Test Cases will be run. * GPS Test Case results will be documented. |
|  | 20 | * Testing * Run OBD Test Cases * Website Creation * Basic website functionality * Tri-Fold Design * Acquire Tri-Fold display from Department * Create prototype design idea * Digital headshots | * OBD Test Cases will be run. * OBD Test Case results will be documented. * Basic website design will be viewable. * Basic website design will be functioning. * Tri-Fold will be received from Department. * Prototype design idea will be created. * Prototype design idea will be uploaded to GitHub. * All team members will have digital headshot taken no later than end of this week. |
|  | 27 | * Website Creation * Website completion * Tri-Fold Design * Acquire documents and pictures for Tri-Fold design * Assemble Tri-Fold components * Fixes (as needed) | * Final website design will be completed. * Website will conform to requirements provided by Dr. Na in CMPSC 480 Spring 2020 class syllabus. * All documents and pictures for Tri-Fold will be acquired. * Tri-Fold will be at least ¾ assembled. * Fixes are TBD. |
| **May** | 4 | * Tri-Fold Design * Finalize Tri-Fold design * Presentation/Demo Practice * Fixes (as needed) | * Tri-Fold will be completed and ready for presentation/demo. * Presentation/Demo Practice date will be determined closer to this week. * Fixes are TBD. |