* Assumptions
  + The car is in Park, door closed and unlocked.
  + All devices in the car are off.
  + The keys are in your hand.
  + Only the driver will be taking actions to the vehicle.

Simulation Lab Requirements

1. Create Visual Studio, C#, WPF app, named **Car\_Simulation**.
2. Part 1 (designing the controls to handle all actions taken by the driver)
   1. Friday’s class talked about the driver’s actions that the simulation software will handle.
   2. Design these actions, using windows controls
   3. To trigger the action, the user interface should design a simple click or keystroke
   4. Make sure when the action is taken, the user knows what state the object is in.
3. Part 2 designing the instrumentation that will be affected).
   1. Show all of the instrumentation that can be affected by the actions taken by the driver.
   2. Display this instrumentation in a way that is easy to understand by the user.
4. Parts 3 (most of the C# coding)
   1. Handle the events when the user simulates a driver’s action.
   2. When an action is taken, write the code that will update any of the instrumentation.
   3. The instrumentation changes must be clear what has been affected.
   4. Concentrate more on the logic, not so much the window.

|  |  |  |  |
| --- | --- | --- | --- |
| **Object Taken Action On** | **Action Taken** |  | **Instrumentation Affected** |
| Drive Door | Open, closed |  | Dash: Door Icon  Dome Light: Off or On  Door Chime |
| Windshield Wiper | Turn On, Turn Off |  | Motor is working or not |
| Gear Shift | Shift into Park, Reverse, Neutral, Drive |  | Show the 4 posns the gear shift can be in. |
| Turn Signal | Left, Right |  | Left/Right Arrow, or no arrows |
| Driver Window | Up, Down |  | Show windows is opened or closed. |
| Dome Light | Switch to Off, On, Auto |  | Dome Light: Off or On |
| Ignition | No Key, Off, Accessory, On |  | Gear Shift Posn  Radio is available or not  Windshield Wiper  Turn Signals  Door Chime  Driver Window |
| Head Lights Switch | Turn On, turn Off |  | Front and Back Lights are On or Off |
| Brake Pedal | Press, Release |  | Read Brake Lights On or Off |
| Driver Seat | Sit Down, Get Up |  | Dash – Seat Belt Icon |
| Seat Belt | Fasten, Release |  | Dash – Seat Belt Icon |