Gear Shifter Helper
For People with Reduced Hand Strength

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Overview
Many models of vehicles have been made with a floor gear shifter with a release button on the side. These can be difficult to operate for people who have lost a significant portion of their hand function to disease or injury. Our team designed an aftermarket gear shifter to replace the original one which can be easily operated using only the wrist which makes shifting much easier for people with loss of hand function.

Objectives
The objective of this project was to design a device which would allow someone to shift gears easily without needing to use their fingers. At the same time it needed to maintain all the functional and safety features of the original gear shifter as well as an aesthetically pleasing appearance and maintaining the clearance between the shift knob and the radio.

Approach
The design was based on the specific needs of the sponsor Marty Kester. We met with him and reviewed a product design built for him last year. The importance of aesthetics to Marty was a major factor in our decision to replace the existing gear shifter rather than designing an attachment to the original shifter like what was done before. The design was developed after we dissected another gear shifter to see exactly how it worked. The whole new gear shifter head slides up and down the shaft and in attached directly to the release mechanism on the inside of the shaft. A stationary piece near the bottom holds the overdrive button. The gear shifter was covered in black vinyl so that it looks very similar to the original gear shifter design. Screws with spacers in the back allow the gear shifter to slide up and down freely but keep it from coming completely off.

Outcomes
Marty was very satisfied with his new gear shifter. It greatly increases the ease with which he can shift gears. The design is small and looks very similar to the original gear shifter. It also increases the clearance between the shifter and the radio making it easier for Marty to change stations.