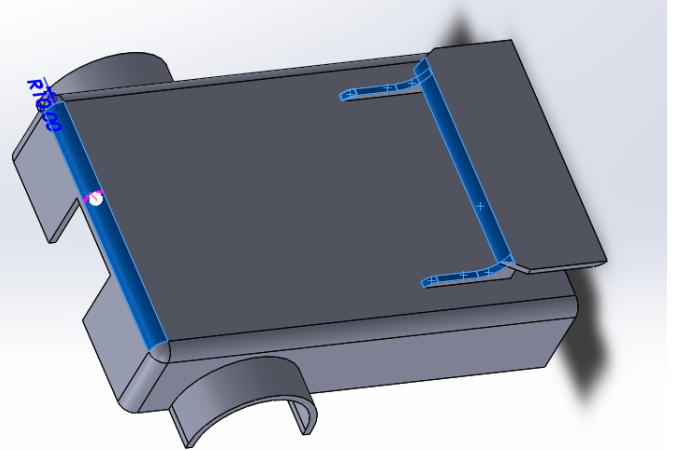


## Explanation of why we chose this design and key ideas behind it



From the beginning of the project, due to the juvenile nature of our group members, we were inclined to design our vehicle in a sports car style with a minimalistic approach. In terms of technical perspective, we wanted to have a shield for each wheel and spoilers to manage the aerodynamics of the vehicle. In terms of design perspective, we made the edges of the car smooth to implement a streamlined design by filleting those edges. On top of these, we wanted our car to be robust and not easily damaged. In conclusion, we decided to deliver these characteristics by making a cover frame that fits the car perfectly with the right dimension. By taking a minimalistic approach, we tried to discard unnecessary but possible change and keep it simple. An exemplary design in figure xxx was used in our style approach.

The first design criterion, to begin with, is a streamlined design. A streamlined design of a car indicates that the shape of the car makes it possible to move efficiently and quickly through the air by minimizing air friction. In modern days, most design procedure for cars considers streamlined design a necessity. It has a number of positive effects. It has better efficiency in fuel consumption, better control, better performance, and less vibration and noise. To have these characteristics, we have filleted the edges of the car to make the contour smooth.

The second criterion to discuss is the spoiler and aerodynamics of the vehicle. The spoiler and the wing are often interchangeably used but they are in fact different devices and have distinct behaviors in aerodynamics. A spoiler is a device used for reducing the lift and improving aerodynamics by disrupting an airflow flying over the vehicle. An example of a spoiler can be seen on the wings of an airplane. By adjusting a blunt angle of the spoilers to an acute angle to disrupt the pressure difference, the airplane can move down in altitude. It is true that our car will not experience any drastic change in aerodynamics or the sense of getting lifted because the maximum speed of the car is relatively low. However, we have implemented this feature to show that our style approach is based on that of a sports car.

Below, we have our final design implementation of all the parts and cover assembled together.

