1. **What is your project about?**

In this project, the goal is to build a 3-dimensional demonstration that contains a controllable 3D vehicle over an uneven terrain with obstacles. Collisions will be detected and proper physics applied.

2. **What are the main functions you will implement? If you are on a two-person team, who will be the lead developer of which function?**

The functions of this demonstration could be divided in four main subjects: car controls, physics (both led by Artur), camera controls, and scene setup (both led by Lucas). Additional functions and features may be added during the development.

The car controls are steering (left/right) and speeding (acceleration/braking) triggered using keyboard keys. The physics part should mainly include gravity and collision detection, so the vehicle does not fall through the terrain.

The camera is supposed to automatically follow the vehicle driven and rotate around the vehicle as the player moves the mouse. The scene setup will contain at least an irregular and textured terrain and sky, a light source and a few 3D objects that may serve as obstacles.

3. **How will a user run your program (animation, mouse, keyboard, and widget control for interaction, etc.)?**

The user will control the vehicle using keyboard keys and the mouse to move the camera around the car and see the surroundings.

4. **Any technical challenges you expect to encounter?**

To attach the camera position and orientation to the vehicle and build a physics-ruled environment may be challenging features.

5. **What is the most difficult part of the project, based on what you know so far?**

The collision part of the physics is probably going to be the most difficult part of the project, once it is necessary to avoid two 3D objects to overlap each other and apply a proper reaction when they "attempt" to, like a bounce effect or deformation.