Linus Nordbakken Nagy, Report for compulsory 3, 10/11/2023, Game engine architecture

Github link to the project files:

<https://github.com/Lolinonusos/Skoleunity/tree/main/Assets/GameEngineArchitechture/Car>

Github link to the scene testing the car on a sloped surface:

<https://github.com/Lolinonusos/Skoleunity/tree/main/Assets/Vissim/Eksamen>

I am making a simulation of a car using the built-in physics objects in the Unity game engine. Currently I am using some example code found from Unity’s documentation for the car.

As for now I would just like to get the car physics working more correctly and how I would like them to be. The car can be driven around with user input. Currently the car struggling with sloped surfaces, and is often tipping over when driving too fast, especially when trying to steer the vehicle. For a flat surface I am using the default Unity built in plane, but when testing the car on a sloped surface I am generating my own mesh using height data received from <https://hoydedata.no/LaserInnsyn2/>.

Eventually in the simulation I am going to add UI elements that show the current speed of the car and other related variables like acceleration. I would also like to implement some functionality that allows the car to check how much force the car collided with when it collides with an object or surface.

Later I would like to add some a raycast check to the car that lets the car scan in front of itself for objects it can collide with. The raycast distance should be dependent on how fast the car currently is driving. If the raycast finds an object it can collide with it will tell the user to slow down in order to avoid a collision.