Virtual reality, Graphics and Animation
Project - Task 1

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1 Introduction

This report is the first of two in a two-part assignment. The purpose of the first report is to describe the assignment itself, the intended implementation, and lastly any additional features that may be implemented.

1.1 Assignment description

Sphero BOLT is a programmable robot-ball. The robot can move around, in addition to other various functionality by using different onboard sensors. It is primarily used as a learning resource. The assignment asks us to implement a visual simulation of the robot, while meeting the following criteria:

- The implementation must use the Godot game engine
- Custom Godot modules are to be programmed in GDScript and C++
- The Sphero Edu Windows application must be used to program the robot in JavaScript
- External libraries cannot be used without approval from the lecturers

1.2 Intended implementation

At this point, which is prior to any form of implementation and only a vague idea of which approach to use, the intended implementation involves a custom character model that moves on a 2D-plane in Godot. The character will move around and detect collisions based on input from a file, which will be passed to Godot by using a custom module. The collisions will be visibly represented by models in Godot.

1.3 Additional features

Lastly, in addition to the required features from the assignment description, it is encouraged to implement a set of custom, creative features. These will positively impact the finished product by giving it a personal touch. Currently, a few ideas of possible features are:

- Character models to represent each collision the custom module detects
- A random chance for the character to visually explode when colliding, ending the simulation
- A visual counter to track the current number of collisions in the simulation
- Texturizing the 2D-plane