

CS 251: Software Systems Lab

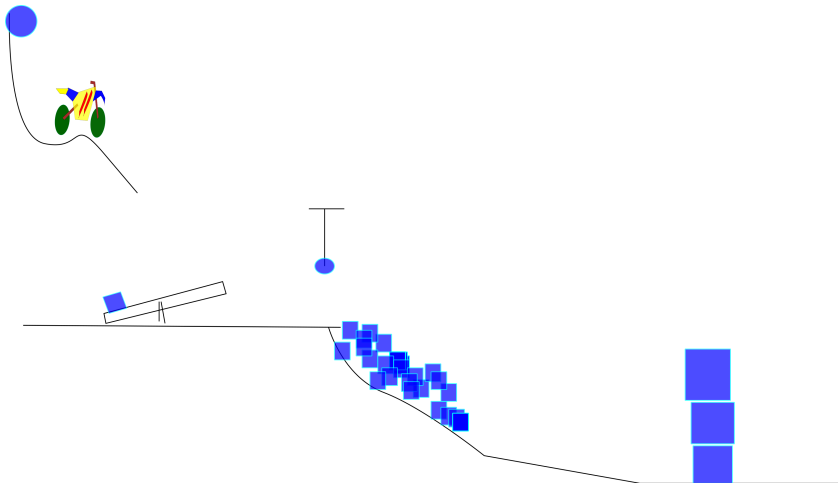
Project Report

September 16, 2015

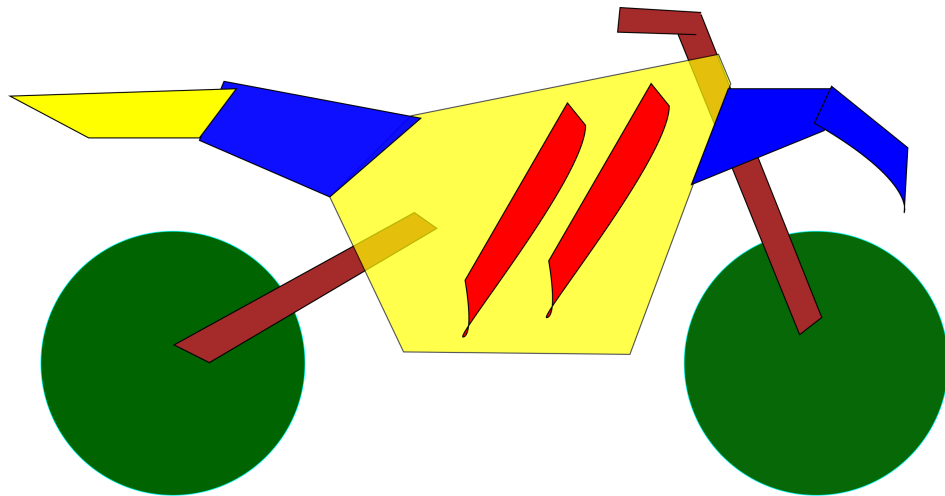
Group

Group Name	Roll Number	Name
Crodeaters	140050008	Tejesh
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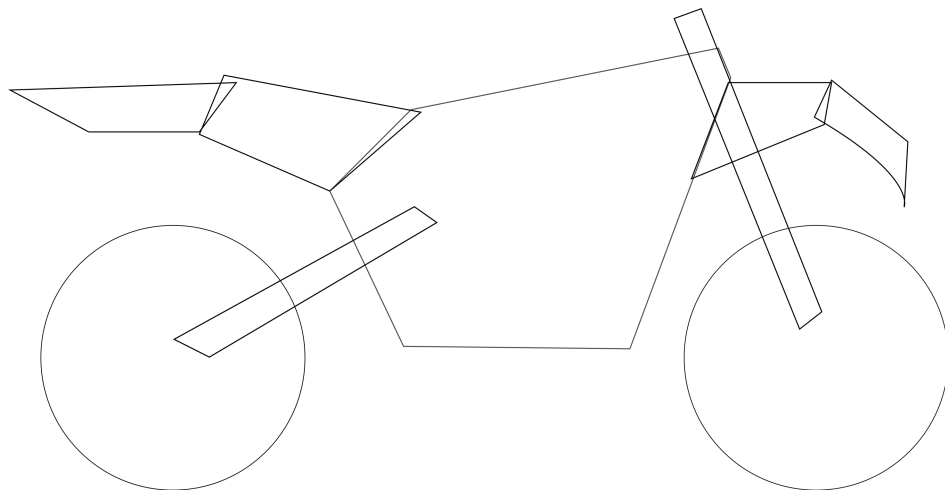
Our Project Design



External View of bike



Internal View of bike

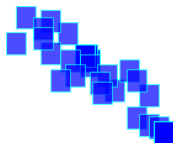


Stopping Boxes



The three large boxes are present at the extreme right end to stop the motion of the bike after completing the track.

Garbage Boxes



Garbage boxes are just present on the path to provide a rough path for the dirt bike to pass through.

Seesaw



See saw is made made up of a horizontal bar joined over by a samll vertical box at its center. It has a box on its left side which bounces off when the bike falls on the see-saw.

Pendulum



Pendulum: It oscillates when the bike passes across it. It is made up by two objects i.e. the hook and the ball connected by a joint which is the string.

Dirt Bike Simulation

Motivation

Our motivation was the inspiration of Box2D Mountain Bike as given in the outlab.pdf We googled through various small Box2D games. We decided to make a simulation deriving from the game of dirt bike.

Introduction

Why are we doing?

Basically, we want to design a basic simulation of the using some features of the popular dirt-bike game. It has a bike which is capable of going through any rough surfaces. It has a good grip and shock-up system which allows it to perform this task. This is the main part of the dirt-bike game and can be further used to make the actual dirt-bike game.

When are we doing it?

We have built the basic implementation model so far, but well improve upon it in the course of the next few weeks. We plan to have a basic setup ready in a few weeks after midsems. At present we are focussing on the basic joints of the bike and how the various parts are going to work together to provide a very rough and tough bike.

Introduction

What are we doing?

This is a Box2D simulation that has a dirt bike which passes through various obstacles moving various things while itself moving. The bike itself has movable parts which provides the shock-up features so that the bike can move through any rough track.

Who is doing what?

We haven't yet finalized but the tentative distribution of the work is as follows : Shrey will do do the coding of the path and all small objects. Tejesh will make the bike including all the minor parts inside it to provide rough and tough features. These are just tentative, we will actually coordinate among each other and almost everyone will do the coding. Gangesh will do the graphics part of the bike and some parts of the bike.

Body Part 1

The bike has four parts namely:

- 1. Front wheel
- 2. The body
- 3. The bar connecting the body with rear wheel
- 4. Rear wheel

The wheels and bars are connected to body with joints which together provide a shock-up feature.

Body Part 2

The simulation is initialized by dropping of the ball from a height at the top left corner. The ball strikes the bike from its backside giving a momentum to the bike. The bike then falls on the see-saw thus making the box present on the left side of the see-saw to bounce off. Then the bike goes through the garbage boxes after passing through the pendulum in the path. Finally the bike hits the three large boxes kept at the end over each other.

Conclusion

This part of the project can be further used to make the complete game of dirtbike by changing the path as per the game. We can provide the features to tilt the bike leftwards or rightwards to easily pass through the garbage.

References

[1] [3] [2]



Charles T. Batts. “A Beamer Tutorial in Beamer”. In: *Foundations of Computer Science. A Beamer Tutorial in Beamer*. 2007.



LaTeX/Floats, Figures and Captions. [LaTeX/Floats, Figures and Captions](#). 2015.



Andrew Roberts. *Getting to Grips with LaTeX*. [Getting to Grips with LaTeX](#). 2015.