Roost

Vertical Slice | Proof of Concept

Web v.1.0

a Motocross Game
based on the replication
of 250cc dirt bike physics

Made with Unity3D &
Lightweight Render Pipeline

CREATED BY

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Content Navigation

Installation

The *browser version* is the only currently available build.
You can find it **here**.

Build Type	Unity Web Player (WebGL 2.0)
Version	1.0
Requirements	Google Chrome or Firefox Web Browser *(Mobile not supported)

Features

Physics-Based System | Built with *D.P.S*

Fully responsive, dynamic suspension system defined by over 20 parameters

Custom rigged bike. A single 3D model split into an 18-piece hierarchy of game objects. Pivoting mocks realistic movement by worldly standards.

Collision is handled using wheel colliders fit tightly to the tire model, as well as
inner-sphere colliders for hard impact collisions

Movement is solely defined by the Dirt Bike game objects interactions with physics of the virtual world. There is not a single animation present within any vehicle in *Roost* or *Dave's Precision Systems.* These interactions are aided by each vehicle's response to user-input. After having received user input for acceleration, force & torque application is handled at base of wheel colliders

Roost Demo: Automatic / manual transmission toggle available

Dave's Precision Systems Asset: Complete transmission customization with regards to individual gear traits. Gear ratios and RPM ranges can easily be adjusted while in play mode

Auto / manual roll over at speed = x.y.z

Physics & audio correlation with regards to traction & drag

LWRP Integration (Lightweight Render Pipeline)

Provides superior mobile/web performance over default pipeline

PC: 100+ FPS

Web: 45-65 FPS

Mobile: 45+ FPS

Fully Rigged MX-Rider Model, Animations using I.K (Inverse Kinematics)

64-Bone character rigging allows animations to seamlessly flow from the main menu to the game scene

Post-Processing V2

Combines complete set of rendered effects into a single pipeline

Gorgeous UI

Responsive elements fit for any landscape resolution

Low Poly Design

Bike/Character models contain a reduced poly count

Environment models contain a very low poly count

Cross-Platform Capability

Runs on PC, macOS, iOS and Android

Design

When I was first designing this game, I began loading a chrome bookmark folder with an outrageous number of considerable assets over the course of a couple weeks. Little did I know, every assets materials would need to be redesigned from the ground up after it was acquired. Due primarily to the implementation of the lightweight render pipeline, which demanded all materials fit into its strict guidelines. On the bright side, this increased performance in numerous ways.

Assets

Bike & Rider

Low Poly Bikes with Rider	Macrobian
Mobile Dirtbike	Dollar Assets
125cc Engine Sound Pack	Slaczky - Skril Studio
MX Rider	CoSwiz

Environment

Nature Pack	POLYGON
PH	PH
PH	PH
PH	PH

UI

Complete Main Menu UI (Lite)	Michsky
PH	PH

PH   PH

PH   PH

Development

Assets

Randomation Vehicle Physics
Developer: *Justin Couch*, *@JustInvoke*
My rate of progress has been ***largely due to the use of this expired asset***

These kind words changed the course of my project:

"**VehicleBalance**:
This script is meant for balancing vehicles such as **motorcycles**. This script is *not completely stable*, but I decided to include it anyways in case some people want to experiment with it."

Thank you.

Looking Forward

As of writing this document, Roost - Vertical Slice (Web v.1.0) has been made available worldwide. Naturally, there are all kinds of features I haven't had the chance to implement yet due to other projects/commitments.

I am however, very excited to pursue this project further when more time is made available.

If you made it this far, I can't thank you enough for your support. It truly means the world to me. Questions & comments are not only encouraged but much appreciated!

You can reach me at **DavidGuido@LitLabProductions.com**

Thanks again,

David Guido 👨‍🏭🚀
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