PHYSICS ENGINE AND THE ANGRY BIRDS GAME PART-1

A little about the inception of the Physics Engine Series

Hello and welcome everybody!

I started studying Physics Engine recently and I was finding it very esoteric and was looking for a way in which the working of physics engine could be explained in simple language.

Well, when we learn about something new, we experience a wave of questions in our mind. Same happened with me!

So, I did some research on it, read a few articles and watched a few videos and found that it is actually very interesting.

I thought maybe there are many like me who too have questions about it and hence decided to make notes of my findings, understanding and research on Physics Engine!

I am planning to make it in parts and for that I would definitely like to know your feedback on it so that I can create better notes! (Feeling like an author now…)

-Aastha Sharma

What is Physics Engine and why are we using it?

Physics engine is a software which allows us to create objects in our project which follows the rule of physics. When I say rule of physics I mean,

-Gravity

-Friction

-Restitution

-Fluid Dynamics, etc.

We use it so that we can make our game more realistic and enjoyable and will be using it to create The Angry Birds Game.

Alright!
So we know what a physics engine is , so now how can I download it from the internet and use it in my code?

What should I search for?

DIFFERENT TYPES OF PHYSICS ENGINE

There are so many physics engines to name a few:

-Box2D

-Bullet

-Chipmunk physics engine

-Newton Game Dynamics

-Toxiclibs

-Canon.js

-Matter.js

In our Angry Birds game we will be using Matter.js

If you are looking to download it ,then here is the link :

https://brm.io/matter-js/

There are many interesting demos on this page which will definitely make you wonder:
“Hey !How did you do that?”

Since we’ll be using matter.js let’s understand a few modules that will help us get started.

Modules in Matter.js

So since you have reached here I'll consider you are liking it ,aren't you?

Anyway, going ahead with matter.js ,there are so many modules in matter.js ,but, the most commonly used ones are:

-Engine(Vroom! Vroom!)

-World

-Body

-Bodies

-Composite

-Composites

-Constraint

-MouseConstraint

-Events

-Plugin

To begin with we will be focusing on:

-World

-Engine

-Bodies

World

This will help you create your own world where objects follow the rules of physics.

Bodies

This will help you create bodies of different shapes and they will be having properties similar to the real-world objects.

Engine

This will be the one responsible to update the properties of the bodies inside the world.

Let me explain this more clearly,

If we throw a ball from some height then it takes time for the ball to come to rest but in this whole process there are some properties of the ball that are changing, like the position and velocity of the ball.

So ,to make our objects behave in a similar manner we need to keep on altering these values and this is what an engine does.

In my next series of notes we'll discuss more about the coding part! Until then bub-bye and happy coding!

If you find something erroneous in it do reach out to me.