

Project Presentation: A ID 408 Report by Group 07.

Utkarsh Kumar, 130050022

utkarshk@cse.iitb.ac.in

Ankit Rathod, 130050029

rathod.ankit@cse.iitb.ac.in

Ashish Anand, 130050035

ashishanand@cse.iitb.ac.in

Dibyendu Mondal, 130050046

dibyendu@cse.iitb.ac.in

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- Introduction
- What Happens
- Description of components
- Conclusion
- Bibliography



Introduction

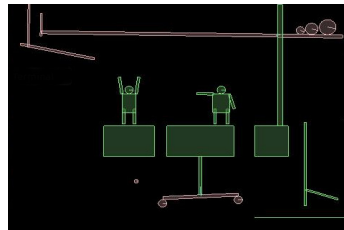
This report has been made to present the working of the Rube-Goldberg machine simulation made by our group (group no 07) using Box2D. We have included screenshots to explain different parts of the entire picture. Also explanations for what happens in which particular part have been given.

What Happens

The man on the right holds the man on the left at gun point. The man being held at gun point kicks a small ball which sets off a chain of events. The simulation starts at the point when the man just kicks the ball. In this picture, the ball kicked moves down, to hit the balanced bar which stops 2 balloons. This disturbs the balance and one of the balloons goes up to hit the platform above, which slightly tilts it to make the three balls placed on it to roll over to the right side.

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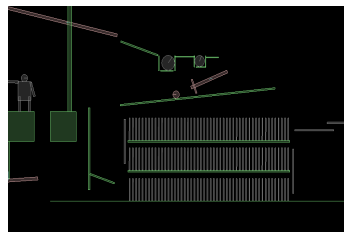


What Happens

Then, these balls go and fall into holes of appropriate sizes making a way for the next balls to pass over them. The smallest of these balls continues down the path and finally hits the series of dominoes which fall over and nudge a vertical rotating bar which further makes the series of dominoes on the upper level fall over each other.

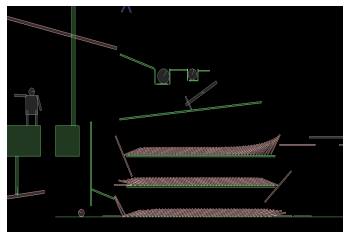
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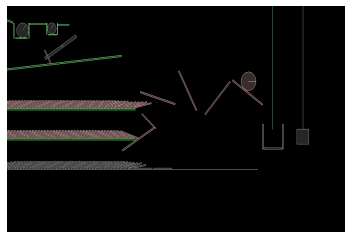


What Happens

The last domino on the top level topples over the horizontal rotating bar next to it and the motion gets transferred through a series of bars finally ending up tilting the bar on which the large ball is kept. This ball falls into the platform below which is connected to a block on the other side of the pulley, making it rise up.

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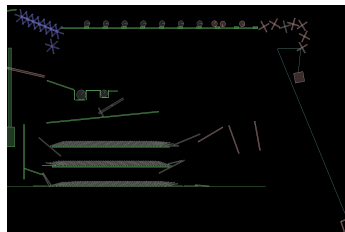


What Happens

The block hits the series of rotating four handled objects and the motion gets transmitted to the right most ball on the top platform. This ball then moves left, hitting the next ball and this continues till the last ball.

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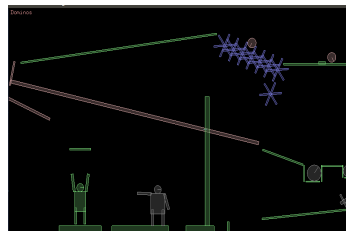


What Happens

The last ball, when it reaches the end of the platform, lands on an array of rotators which push it up to the next platform. It then, rolls down the incline into the tunnel that follows.

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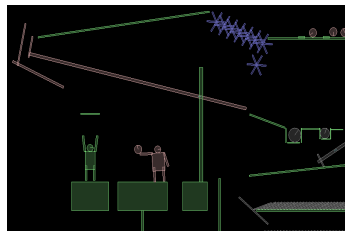


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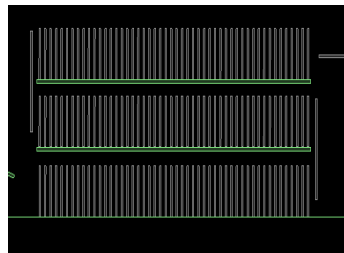
The dominoes are dynamic bodies, whose initial position has been defined to be on top of the stationary shelves(which are static objects. For more information about different types of objects in box2d, see [www14b] or [www14c].

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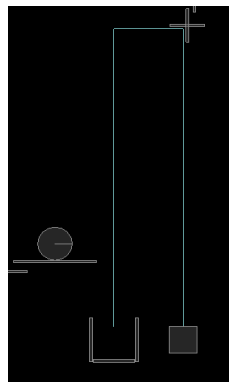
The open box and the block are dynamic bodies and they have been connected via a pulley joint. More about different types of joints can be found at [\[www14b\]](#) or [\[www14c\]](#).

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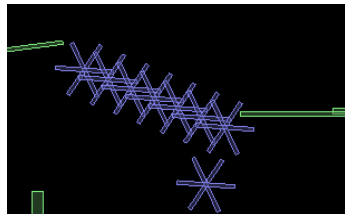
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Conclusion

In this presentation, we saw how Box2D can be used to model physical systems on a computer, of which an example is our Rube-Goldberg machine simulation version 1.0. Different aspects of the Box2D physics engine were demonstrated and a realistic simulation was carried out.

References



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