

VIP Lab

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Outline:

- × What is VIP Lab ?
- × Methodology.
 - Framework .
 - Cross platform requirements.
 - LibGDX,Box2D.
- × VIP Lap properties and features.
 - Studio.
 - Loader.
- × Future work.
- × Demo

What is the VIP Lab ?

- × Virtual environment to simulate basic physics laws.
- × It is provide different set of objects with different characteristics.
- × Developed to be used in building physics driven applications.

Technologies:

- × Java.
- × Cross Platform Tools.
- × LibGDX.
- × Box2D .

Framework:

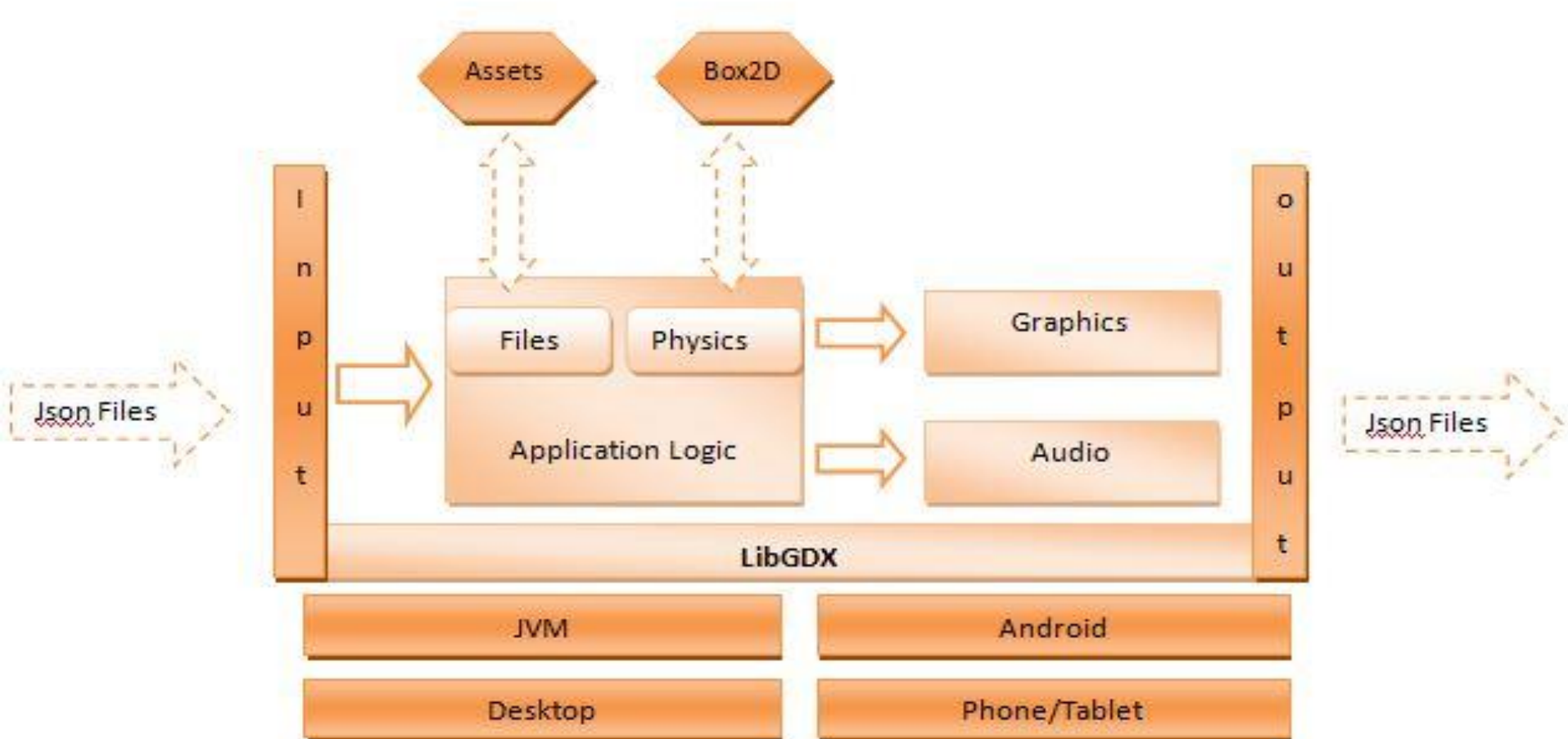
- ✘ Java programming language along with LibGDX and Box2D libraries.
- ✘ supported on desktop, android and IOS.

Cross platform requirements:

- × VIP Lap generates 3 main builds targeting multiple desktop and mobile platforms:
 - × VIPlap-android
 - × VIPlap-desktop
 - × VIPlap-ios

LibGDX:

LibGDX is a Java development framework that provides a unified cross-platform API for 2D Game Development



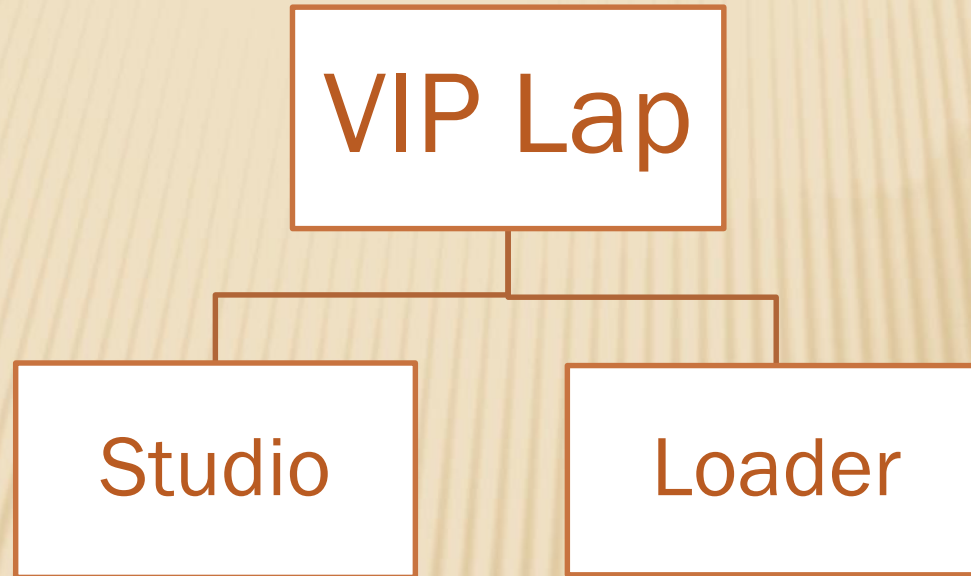
BOX2D (NO GRAPHICAL REPRESENTATION)

- × Open source 2-dimensional physics simulator engine.
- × provides two type of shape circle and polygon.
- × Give physical properties related to Newton laws.

MAIN CHALLENGE

- × How to combine the two previous libraries together
- × Extend existing functionalities to add more flexibility
 - + 2DBox supports 2 main shapes
 - + VIP Lab supports 100+ objects

CONTENT-DRIVEN APPROACH:



Studio



Tools



Animation



Operation



Proparities

Density 0.0

Friction 0.0

Restitution 0.0

X Velocity 0.0

Y Velocity 0.0

Width 0.0

Height 0.0

Static

Rotation

Sound

Collesion 0



Studio

Tools



Animation



Operation

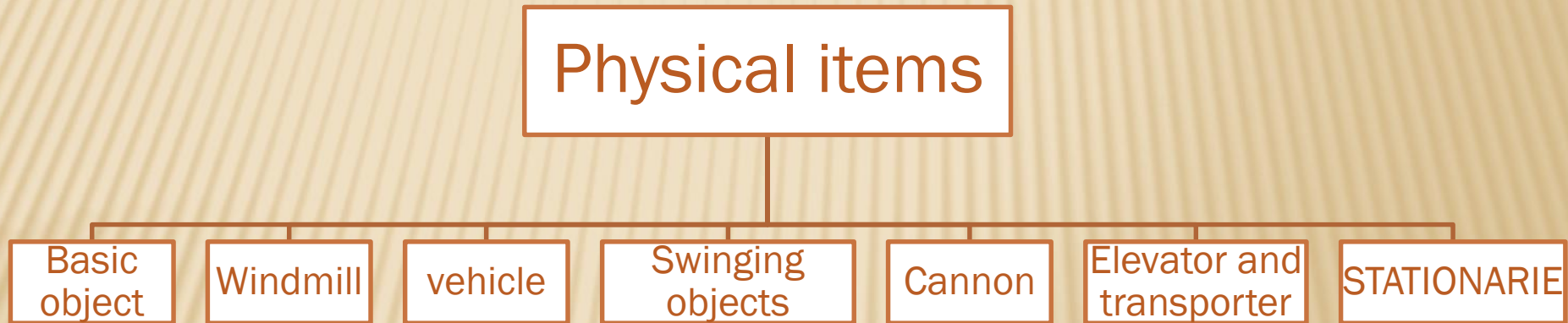


Properties

Density	0.01
Friction	0.0
Restitution	0.8
X Velocity	0.0
Y Velocity	0.0
Width	1.3
Height	1.3
Static	<input checked="" type="checkbox"/>
Rotation	<input checked="" type="checkbox"/>
Sound	<input checked="" type="checkbox"/>
Collision	1



PHYSICAL ITEMS



BASIC OBJECTS



WINDMILL

Studio

Tools

- □
- ✳ 🛒
- ↻ 🔗
- △ %
- ↓
- 🌀

Animation

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Operation

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Properties

Density	9.5
Friction	0.0
Restitution	0.8
Velocity	-4.0
Width	2.2
Height	2.2
Sound	<input checked="" type="checkbox"/>

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VEHICLE

Studio

Tools

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Animation

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Operation

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Proparities

Density	8.0
Friction	1.0
Restitution	0.4
Speed	90.0
Width	5.0
Height	0.8
Sound	<input checked="" type="checkbox"/>
Move	<input checked="" type="checkbox"/>

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SWINGING OBJECTS



CANNON



ELEVATOR AND TRANSPORTER

Studio

The interface features a central workspace with a wood-grain background. On the left is a vertical toolbar with three sections: 'Tools' (containing icons for circle, square, star, shopping cart, rotation, ribbon, triangle, percentage, square, arrow, square, and pattern), 'Animation' (containing icons for a person, flag, stars, and spider), and 'Operation' (containing icons for a book, play, save, rotation, clipboard, and hand). A small pig character is visible at the top left of the workspace. In the center, there are three square buttons with arrows: a left arrow, a central button with an up arrow (highlighted in yellow), and a right arrow. Below these are two more buttons: one with a down arrow and one with an up arrow. On the right side, there is a 'Proparites' (sic) panel with a list of properties and values, and two icons at the bottom: a refresh icon and a trash icon.

Proparites	
Density	4.2
Friction	0.5
Restitution	0.01
Width	1.7
Height	1.7
speed	400.0
force	13.0

STATIONARIES

Studio

Tools

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Animation

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Operation

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Proparites

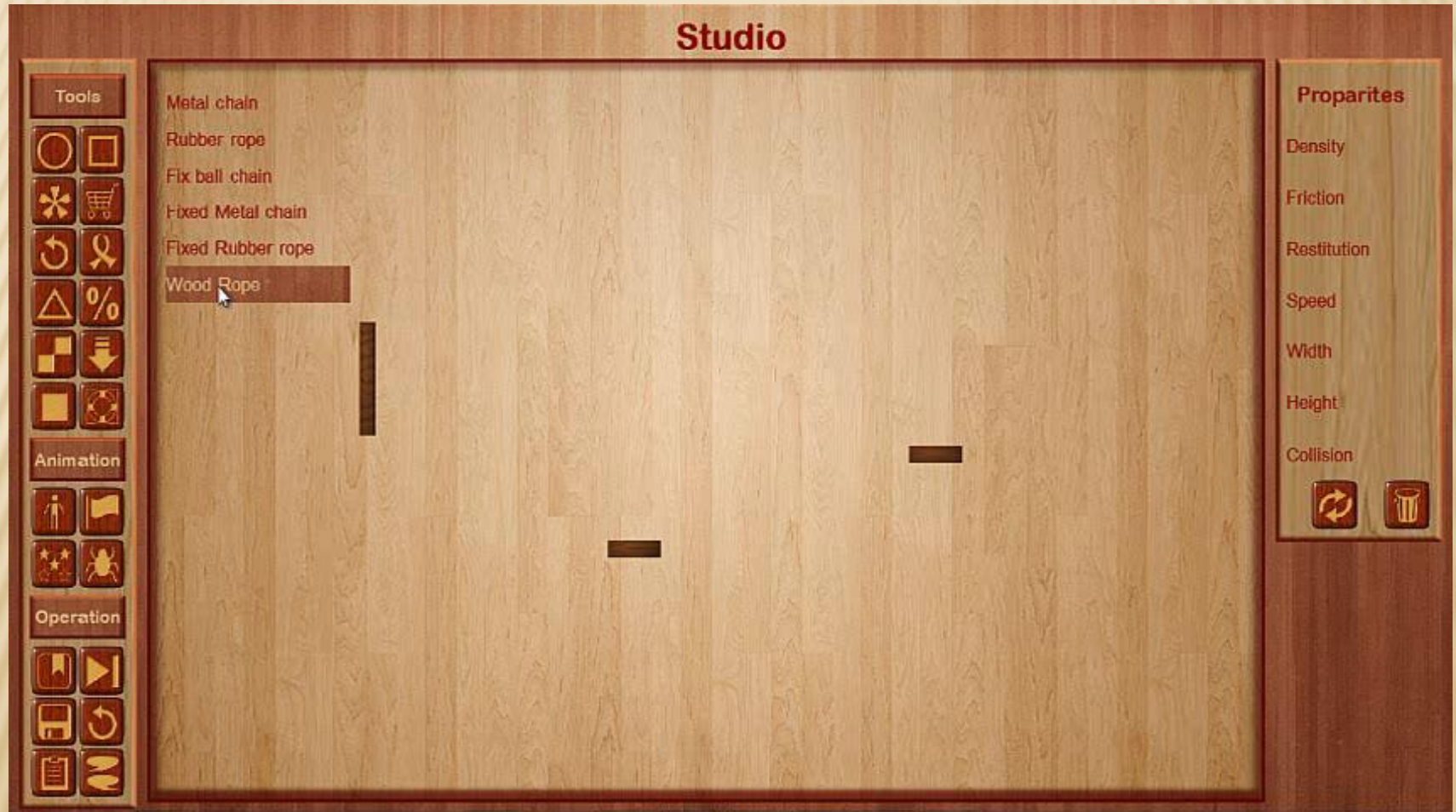
Density	1.5
Friction	0.58
Restitution	0.34
Width	1.0
Height	1.0
Static	<input checked="" type="checkbox"/>
Rotation	<input checked="" type="checkbox"/>
Collesion	1

DESIGN ITEMS



JOINT ITEM



OPERATIONS

× Copy



× Delete



× Save



× Open



× Save Level



× Undo



FUTURE WORK

- × we will give the user the ability to choose any picture and sound effect
- × we will work on giving him the capability to draw any polygon he wants.

DEMO
