

# Pinball Creator

## CREATE YOUR PINBALL

Asset documentation Part 1.

## Where to begin :

First of all, thank you for purchasing Pinball Creator.

### How to use Pinball Creator :

1 First, read section : [Configuring the project : Settings needed to use this asset.](#)

2 Test the demo table : Project-> Asset -> Demo ->

- [Demo\\_Table\\_01](#)

- [Demo\\_Table\\_02](#)

3 Read sections : Introduction, First pinball, Prefabs : overview and Tips : Well starting a pinball (about 20 minutes). Then you were ready to create your pinballs.

4 You could start a pinball with scene [Start\\_Pinball\\_Desktop](#) or [Start\\_Pinball\\_Mobile](#) (Project -> Asset -> Scenes->). You could take a look to the showroom scene (Project -> Asset -> Scenes-> [Showroom](#))

5 You could read section [Mission Creator Module](#) to know how to create easily custom missions.

6 If you have a question look at section FAQ.

If you have problem look at section Troubleshooting.

7 If you want complete information about all the features included in Pinball Creator open the PDF named [Pinball\\_Documentation\\_Part2](#)

You could join the forum here : <http://forum.unity3d.com/threads/wip-pinball-creator.426338/> . If you don't find your answer on documentation or on forum you can contact us at [tropicalstudio3d@gmail.com](mailto:tropicalstudio3d@gmail.com) .

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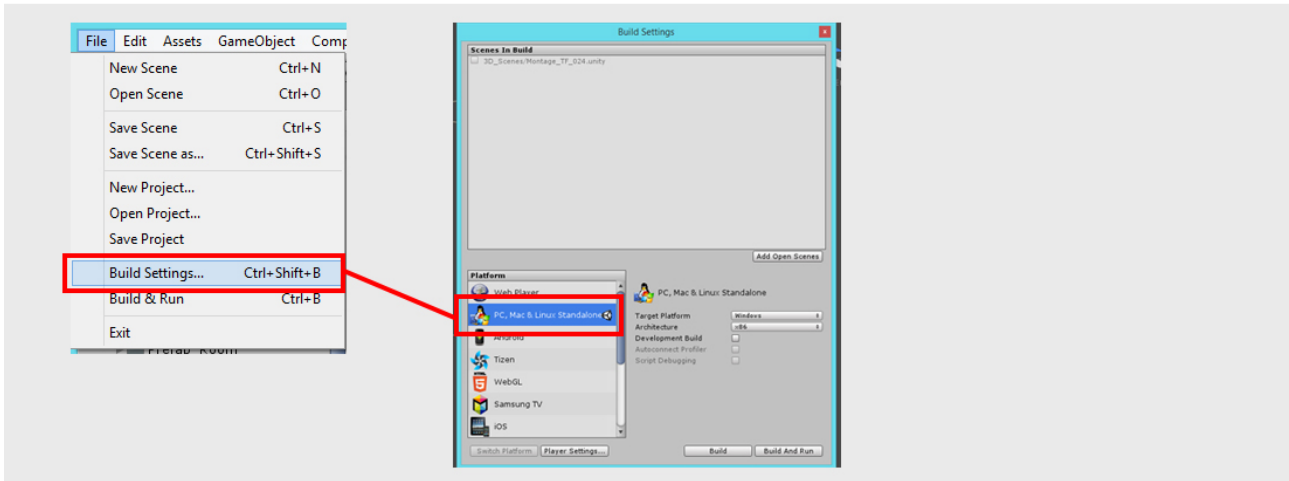
Mission Creator Module [link](#)

# Configuring the project :

**Settings** (Settings needed to use this asset).

**Step 1 :** Check if you are in the **PC, Mac & Linux Standalone** mode.

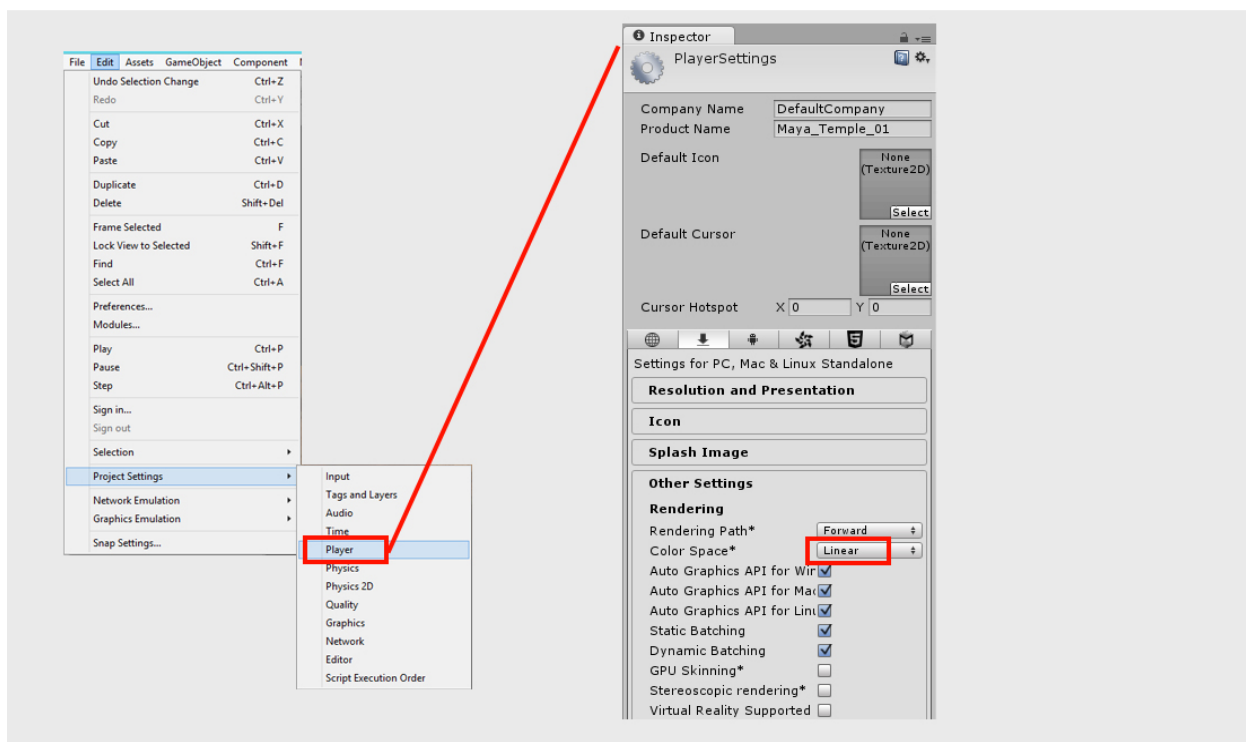
Go to **File -> Build\_Settings**.



**Step 2 :** Color Space

Open **Edit -> Project Settings -> Player**.

In **Inspector** window change **Color Space** to **Linear**



Settings needed for this asset are ready!

**INFO :** You find info on how to setup your project for mobile on Documentation\_Part2.pdf section Optimization

**Important** : Pinball Creator is a **Complete project** so **Player Settings** must be import with the unity.package. If you have issues when you start the demo pinball try to check these next steps.

### Step 1 : Tags and Layers

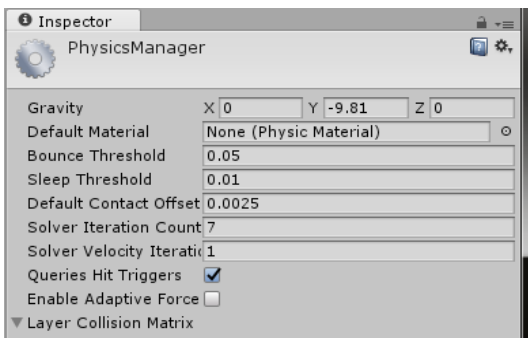
Edit -> Project Settings -> **Tags and Layers**

You need to have these tags :

Tag 0 : Ball	User Layer 8 : Board
Tag 1 : Paddle	User Layer 9 : Paddle
Tag 2 : Leds_Groups	User Layer 10 : L_Spinner
Tag 3 : Missions	User Layer 11 : L_Spinner_P
Tag 4 : Led_animation	User Layer 12 : Switch
Tag 5 : Hole_Lost	User Layer 13 : Other side
Tag 6 : Spinner	User Layer 14 : ball_Layer
Tag 7 : spinner	
Tag 8 : BALL	
Tag 9 : No_Ball	
Tag 10 : Blink	
Tag 11 : Leds	
Tag 12 : Flipper	
Tag 13 : Plunger	
Tag 14 : Ball_Follow	
Tag 15 : PivotCam	
Tag 16 : AnimatedObject	
Tag 17 : Hole	
Tag 18 : Hole_Multi	
Tag 19 : Ramp_Sound	
Tag 20 : NoCombineMesh	

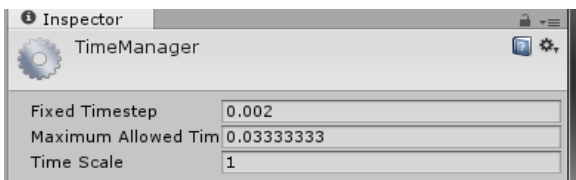
### Step 2 : PhysicsManager

Edit -> Project Settings -> **Physics**



### Step 2 : Time

Edit -> Project Settings -> **Time**



### Step 3 : Quality

If you issues with shadow distance, shadow quality, aliasing ... check section **10° Quality Settings**.

[More info here](#)

# Introduction

This section will give you some basics infos :

## Convention of writing in this manual :

**Note 1** In the documentation the path of a gameObject is indicate at the end of the sentence.

Example :

Drag'n'drop prefab **Flipper** inside gameObject **Table** on Hierarchy  
(Project -> Assets -> Prefabs -> Grp\_Flippers\_Slingshots -> **Flipper** )

You find the path of gameObject **Flipper** **at the end of the sentence** (Project -> Assets -> Prefabs -> Grp\_Flippers\_Slingshots -> **Flipper** )

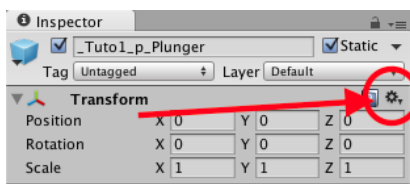
**Note 2** gameObject starting there name with **sc\_**

It mean that this object have one or more scripts attached to it.

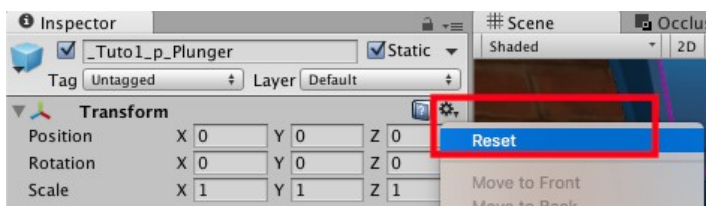
**Note 3** It is useful to know how to reset the position and the rotation of a gameObject

1 Select a gameObject.

2 Clic on the wheel button on the hierarchy.



3 Select **Reset**



If you need to move an object with a lot of precision you have 2 solutions :

**Solution 1:** In inspector set manually value in transform tab

**Solution 2:** Put the objects you need in Table Grp

Select in hierarchy tab **Table** Grp then scale by 10

Move your objects

Select in hierarchy tab **Table** Grp then scale by 1

To zoom smoothly in the scene we do that:

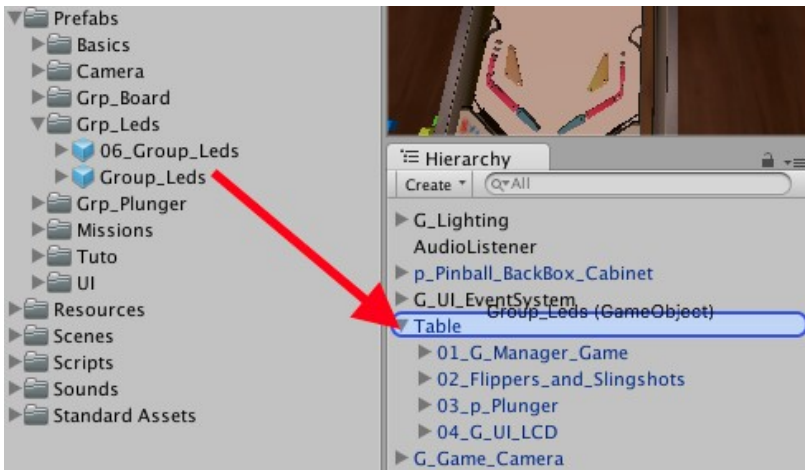
- F key for Focus
- Hold Alt+right-click and drag to zoom the Scene View.  
(On Mac you can also hold Control+ click and drag instead.)
- Hold Alt+left-click and move mouse to rotate the Scene View.

### How to import correctly a Prefab on Hierarchy ?

To manipulate easily a prefab on playfield the best way is to put the prefab inside the gameObject **Table** on the Hierarchy. By doing this you could easily move this prefab on playfield.

Drag'n'drop the prefab inside gameObject **Table** on the Hierarchy.

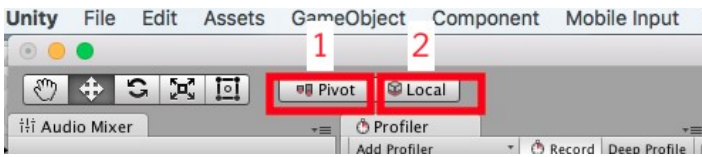
**Important :** Be careful to release the mouse button when your mouse is on gameObject **Table**. See picture.



Now your prefab must be inside **Table** and his **localPosition** must be (0,0,0).

## How to move gameObject on table ?

To move easily a prefab on playfield the best way is to choose **Pivot** Mode and **Local** Mode.  
Select pivot (pic 1) and local (pic 2)



**VERY IMPORTANT :** If you want to create multi table and/or convert table from mobile to desktop (and vice versa) you need to setup properly your table. Read Section (on Documentation part 2 PDF):  
2 Setup or convert table (mobile or/and desktop) with version 1.5.  
3 Optimize a table (mobile and desktop)

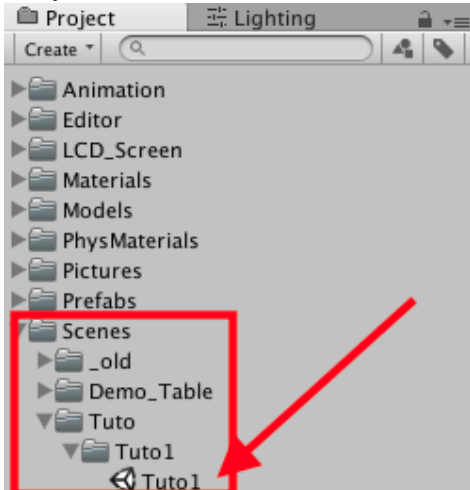
This section is complete.

The next section will show you how to start creating a pinball with prefabs.

# Tuto 1 : First Pinball (Part 1)

## 1 Open Tuto : Tuto1.

(Project -> Assets -> Scenes -> Tuto -> Tuto1 -> Tuto1)



You find on the hierarchy :

**RProbe and HDR** : Use it if you create pinball for Desktop. Remove it if you create Mobile Pinball  
**G\_Ligthing** : Manage Global Lighting,  
**AudioListener** : Global sound volume,  
**p\_Pinball\_BackBox\_Cabinet** : cabinet prefab,  
**Table** : Put inside all the mechanics prefabs,  
**G\_Game\_Camera** : Camera system,  
**p\_Room** : floor and wall mesh

## 2 Add Pinball game Manager

Drag'n'drop prefab **\_Tuto1\_G\_Manager\_Game** in the root of **Hierarchy**

(Project -> Assets -> Prefabs -> Grp\_Game\_Manager -> **\_Tuto1\_G\_Manager\_Game** )

This prefab manage all the rules of the game.

Press **play**.



Then press input touch **C**. Camera view change (4 views).

Press **Stop** before moving to the next part.



## 3 Add flippers and slingshots

Drag'n'drop prefab **Flippers\_and\_Slingshots** inside gameObject **Table** on Hierarchy

(Project -> Assets -> Prefabs -> Grp\_Flippers\_Slingshots -> **Flippers\_and\_Slingshots** ) localPosition (0,0,0)

Press **play**. Control flippers with **S** and **L** keys.

Press **Stop** before moving to the next part.





#### 4 Add plunger

Drag'n'drop prefab Tuto1\_p\_Plunger inside GameObject **Table** on Hierarchy  
(Project -> Assets -> Prefabs -> Grp\_Plunger -> Tuto1\_p\_Plunger) localPosition (0,0,0)

Press **play**. Press **Enter** to spawn a ball on plunger. Then Hold **Enter** to eject ball.  
Press **Stop** before moving to the next part.



#### 5 Add LCD screen

Drag'n'drop prefab Tuto1\_UI\_LCD in the root of **Hierarchy**  
(Project -> Assets -> Prefabs -> UI -> Tuto1\_UI\_LCD) localPosition (0,0,0)  
LCD Screen appears

#### 6 Add a mission

Drag'n'drop prefab Tuto1\_p\_Demo\_Mission inside GameObject **Table** on **Hierarchy**  
(Project -> Assets -> Prefabs -> Missions -> Tuto1\_p\_Demo\_Mission) localPosition (0,0,0)

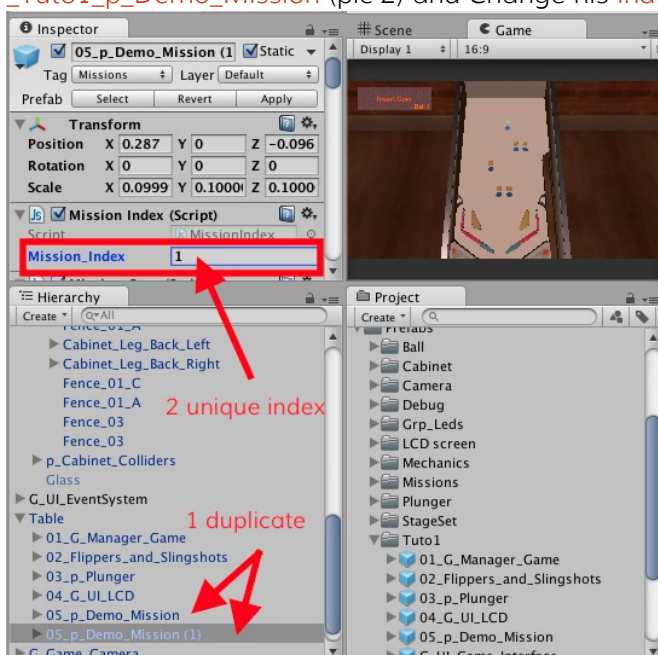
Press **play**. Mission is ready. (Mission Part 1 : Drop 2 targets, Mission Part 2 : Drop 1 target)  
Press **Stop** before moving to the next part.



#### 7 Create a second mission

Duplicate prefab Tuto1\_p\_Demo\_Mission (pic 1)(right clic -> duplicate ).  
Then **move** the prefab somewhere on playfield.

**VERY IMPORTANT** each mission must have a unique index. Select gameObject Tuto1\_p\_Demo\_Mission (pic 2) and Change his **index mission to 1**.

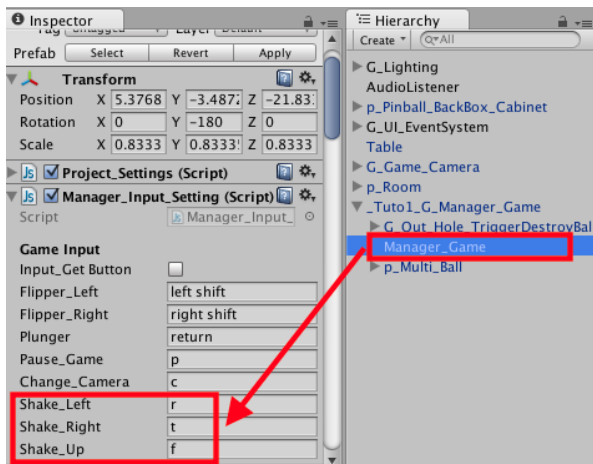


You have a new mission ready to play.

If you have a problem open **Tuto1\_End** (Project -> Assets -> Scenes -> Tuto -> Tuto1 -> **Tuto1\_End**).

## 8 Info + : Nudge

During a game, it is possible to use nudge technique by pressing button **D**, **K** or **Space**. If you want to modify these inputs, select the gameObject **\_Tuto1\_G\_Manager\_Game** on the Hierarchy and change the variables Shake Left, Shake Right and Shake Up.

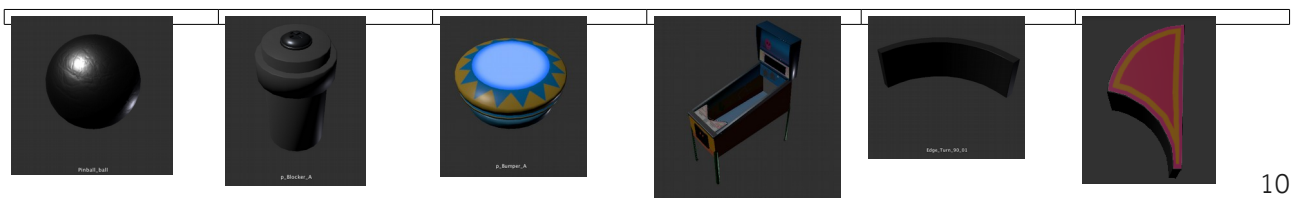
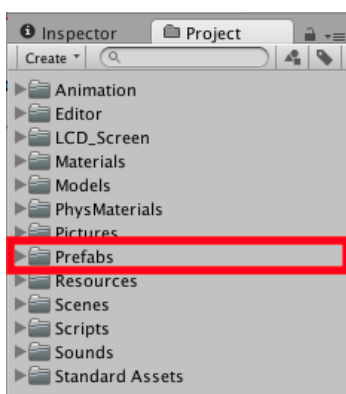



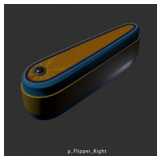
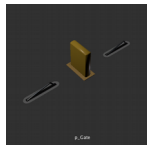

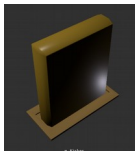

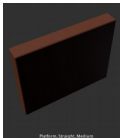
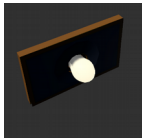

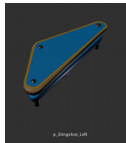
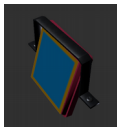


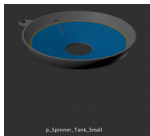
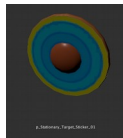
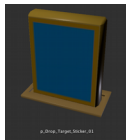

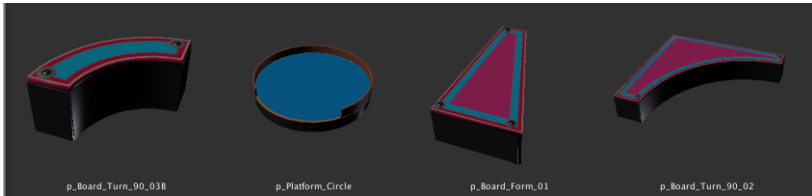
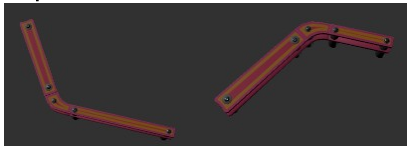


This section is complete.

The next section will show you more informations about different types of prefabs you could find on Pinball Creator

## Prefabs folder : overview

You can create a complete pinball by dragging prefabs. This section show the different type of prefabs. You find all prefabs inside folder **Prefabs** on Project folder (Project -> Assets -> Prefabs).



<div>Ball</div> <div></div> <div>Fence</div>	<div>Blockers</div> <div></div> <div>Flipper</div>	<div>Bumpers</div> <div></div> <div>Gate</div>	<div>Cabinet</div> <div></div> <div>Hole</div>	<div>Edges</div> <div></div> <div>Kicker</div>	<div>Exit</div> <div></div> <div>Leds</div>
<div></div> <div>Platform</div>	<div></div> <div>Poster</div>	<div></div> <div>rollover</div>	<div></div> <div>Slingshot</div>	<div></div> <div>Spinner</div>	<div></div> <div>StageSet</div>
<div></div> <div>Switch</div>	<div></div> <div>Tank</div>	<div></div> <div>Targets</div>	<div></div> <div>Targets</div>	<div></div> <div>Grp_Flippers_Slingshots</div>	
<div></div> <div>Grp_Board and Platform</div>				<div></div> <div>Grp_Inlane :</div>	
<div></div> <div>Grp_Plunger</div>			<div></div> <div>Grp_Ramps_And_Pipes</div>		
LCD_Animations		Missions	Test	Toy	UI

You find complete informations about these object on Documentation Part 2

**Ball :**

**Blockers :** Ball will bounced on these objects

**Bumpers :** Ball will bounced on these objects (a force is added)

**Cabinet :** The Pinball box

**Edges :** Create edges on pinball with these objects

**Exit\_Turn :** Special edge

**Fence :** use to decorate the pinball

**Flipper :** There is a left flipper an a right flipper. Add flipper everywhere on playfield.

**Gate :** Use these combination of objects to create a gate on your pinball

**Hole :** 1. Ball is catch 2. Ball is ejected where you want on playfield

**Kicker :** Ball will bounced on these objects (a force is added)

**Leds :** 3 type of leds. Bulb, small bulb and sprite

**Platform :** use to decorate the pinball

**Poster :** use to decorate the pinball

**rollover :** ball must pass through on the rollover

**Slingshot :** Ball will bounced on these objects (a force is added)

**Spinner :** ball must turn the spinner

**StageSet :** use to decorate

**Switch :** Ball could pass through on in a single direction

**Tank :** use in association with pipe

**Targets** : there is two type of targets : Stationary and drop targets  
**Camera** : Find Camera system, Basic Camera  
**Grp\_Board and Platform** : Create edges and decoration on pinball with these objects  
**Grp\_Flippers\_Slingshots** : flipper left, right and slingshot left right ready to use  
**Grp\_Game\_Manager** : Prefabs to manage game rules.  
**Grp\_Inlane** : Create edges and decoration on pinball with these objects  
**Grp\_Leds** : Prefabs with leds and led animation ready to use  
**Grp\_Plunger** : auto, manual short and long plungers  
**Grp\_Ramps\_And\_Pipes** : add a ramp  
**LCD\_Animations** : Find Two example of LCD animation  
**Missions** : Find all the missions ( ready to use)  
**Test** : Debug\_Test\_Ball is a prefab to help you test a mission  
**Toy** : an example of toy using particle and an example of toy using animation.  
**UI** : G\_UI\_Game\_Interface : An interface for the game.  
          G\_UI\_LCD : Use a LCD Screen.

You find complete informations about these object on [Documentation Part 2](#)

The next section will show you the following steps to easily create a pinball.

## Tips : well starting a pinball

Follow this steps to create easily your pinball.  
This section tells you the best method to create complete pinball.

Step 0 : Start  
Step 1 : ball circulation 1  
Step 2 : choose your missions  
Step 3 : ball circulation 2  
Step 4 : Add Ramp and Pipe

### Step 0 : Start

First of all. Try to have an idea of where you want to go. It will be easier to create your pinball. See other pinballs. See 70s 80s 90s pinballs.

## Step 1 : ball circulation 1

- Ball circulation is really important. The more smooth is the ball circulation the more fun is the pinball. Example [Tips\\_1a](#) (Project -> Asset -> Scenes -> Tips -> [Tips\\_1a](#))



- Choose if you want a first floor from the start.

You could find other examples for ball circulation with [Tips\\_1b](#), [Tips\\_1c](#), [Tips\\_1d](#), [Tips\\_1e](#), (Project -> Asset -> Scenes -> Tips -> )

## Step 2 : choose your missions

- Place one or two missions prefabs on playfield.  
(Project -> Asset -> Prefabs -> Missions)
- For example start with a bumper mission and a drop target mission.
- Move them anywhere you want on playfield.



Example [Tips\\_2](#) (Project -> Asset -> Scenes -> Tips -> [Tips\\_2](#))

## Step 3 : ball circulation 2

Add edge and board to improve the circulation.



Example [Tips\\_3](#) (Project -> Asset -> Scenes -> Tips -> [Tips\\_3](#))

### Step 4 : Add Ramp and Pipe

Ramp and pipe are difficult to place on playfield. It is easier to add them on playfield when the table is already begin.

Ramp and pipe help you create extra ball circulation on table. It is like a hole. The ball is catch somewhere on the table and eject somewhere else on the table.



Example [Tips\\_4](#) (Project -> Asset -> Scenes -> Tips -> [Tips\\_4](#))

You find [ready to use](#) ramp and pipe inside folder Project -> Assets -> Prefabs -> Grp\_Ramps\_And\_Pipes -> [\\_READY TO USE Pipe and Ramp](#)

**Example :** drag'n'drop prefab [01\\_Ramp\\_01](#) inside gameObject **Table** on the Hierarchy.  
(Project -> Assets -> Prefabs -> Grp\_Ramps\_And\_Pipes -> [\\_READY TO USE Pipe and Ramp](#) -> [01\\_Ramp\\_01](#))

[Ramp + Pipe](#) were created two by two.

So you could use prefab [01\\_Ramp\\_01](#) + prefab [01\\_Ramp\\_02](#)  
or prefab [02\\_Ramp\\_03](#) + prefab [02\\_Ramp\\_04](#)

If you want to create your own ramp and pipe see [Documentation\\_Part\\_2](#) section [Ramp and pipe](#).

[This section is complete.](#)

We have seen all the aspects to create a pinball with prefabs.

## Go further

1- You could read section [Mission Creator Module](#) to know how to create easily custom missions ([More info](#) ).

2- Read FAQ : 00° How to choose a mission (Mission name signification).

3- If you want to customize more your pinball, read the PDF [Documentation\\_Part2](#) . You could look at :

Create your ramp and pipe, UI Interface, LCD Screen, LED animation system

**The next section is FAQ section**

**VERY IMPORTANT :** If you want to create multi table and/or convert table from mobile to desktop (and vice versa) you need to setup properly your table. Read Sections (on Documentation part 2 PDF):

2 π Setup or convert table (mobile or/and desktop) with version 1.5.

3 π Optimize a table (mobile and desktop)

## FAQ

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(Mission name signification)

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## 00° How to choose a mission (Mission name signification)

You find the ready to use missions inside the folder (Project -> Assets -> Prefabs -> Missions)

### 1 Example :

**Example :** 05\_Bumper x3\_Rollover x3 No Order

**05 :** Not really important, it is the mission number.

**Bumper3 :** This mission use 3 bumpers for the first part of the mission.

**Rollover3No :** This mission use 3 rollovers for the second part of the mission. No Order mean that the player could go through the rollover on any order to finish the mission.

### 2 Name signification :

**Bumper :** Ball will bounced on these objects (a force is added)

**Rollover :** ball must pass through on the rollover

**Rollover (Lane Change) :** The player need to switch On all the leds connected to the mission. When the ball go through a rollover the led connected to this rollover switch ON.

When one or more leds are Switch On, the player could modify there position by moving the flippers

**Stationary target :** Hit this type of target

**Drop target :** Hit this type of target

**Hole :** 1. Ball is catch 2. Ball is ejected where you want on playfield

**Spinner :** ball must turn the spinner

**x :** the number of objects

**No Order :** No order to finish the mission

**Order :** order to finish the mission

## 01° How to customize led sprite ?

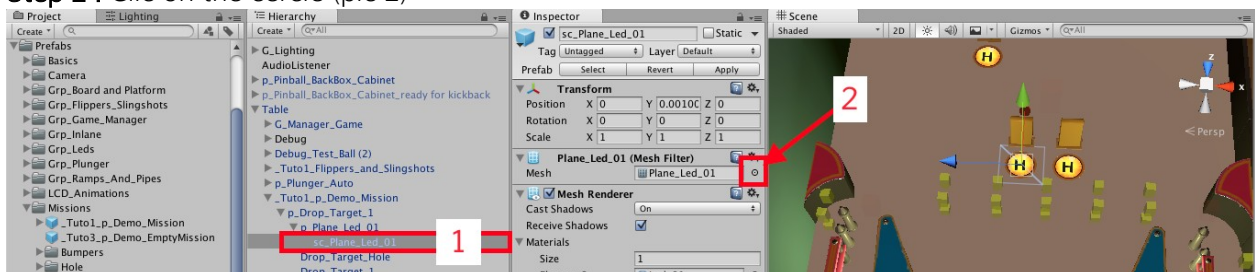
### 1 Open scene Tuto2\_0 :

(Project -> Assets -> Scenes -> Tuto -> Tuto2 -> **Tuto2\_0**)

### 2 Choose the led you want to modify :

**Step 1 :** On **Hierarchy** select gameObject **sc\_Plane\_Led\_01** (Table -> \_Tuto1\_p\_Demo\_Mission -> p\_Drop\_Target\_1 -> p\_Plane\_Led\_01 -> **sc\_Plane\_Led\_01**) (pic 1)

**Step 2 :** Clic on the cercle (pic 2)



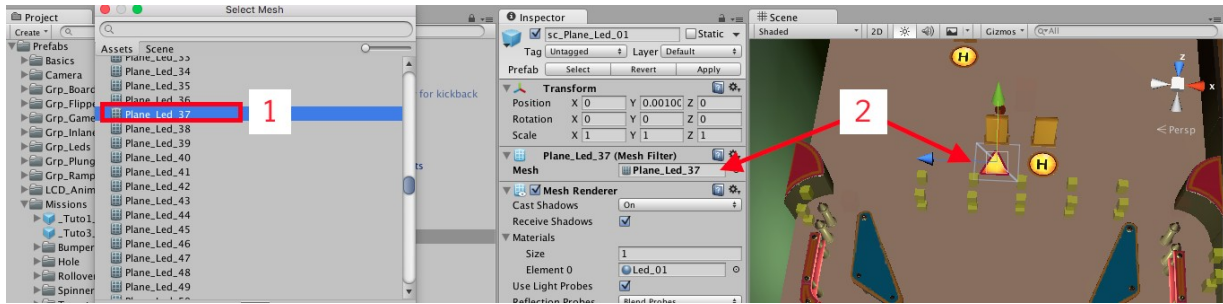
### 3 Select a new sprite

A new window name **Select Mesh** appears. Select a new Plane. For Example **Plane\_Led\_37**.



You see the new led sprite on the scene view.

You could choose between **Plane\_Led\_01** and **Plane\_Led\_64**



If you have a problem open **Tuto2\_1**(Project -> Assets -> Scenes -> Tuto -> Tuto2 -> **Tuto2\_1**)

## 02° How to make a led blinking ?

1 Open scene **Tuto2\_1** :

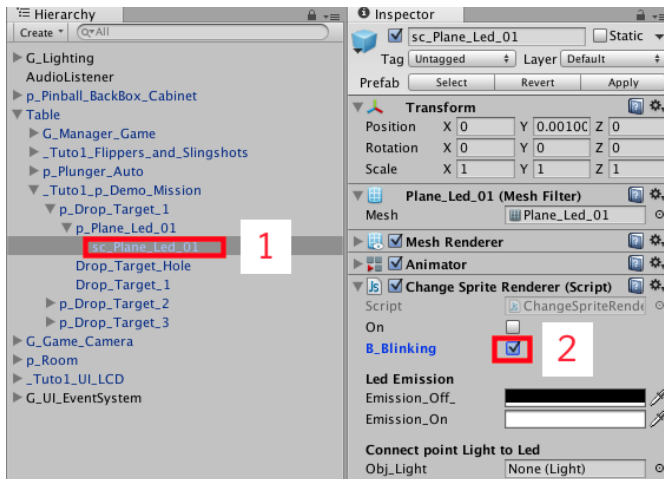
(Project -> Assets -> Scenes -> Tuto -> Tuto2 -> **Tuto2\_1**)

2 Make the led blink when the led is turned on :

**Step 1 :** On **Hierarchy** select gameObject **sc\_Plane\_Led\_01**

(Table -> \_Tuto1\_p\_Demo\_Mission -> p\_Drop\_Target\_1 -> p\_Plane\_Led\_01 -> **sc\_Plane\_Led\_01**)  
(pic 1)

**Step 2 :** On script **ChangeSpriteRenderer** check the box **B\_Blinking**. (pic 2)



**Step 3 :** Press **Play**



**Step 4 :** Press **Enter** (or **return**) to start a game.

Led **sc\_Plane\_Led\_01** blink.

If you have a problem open **Tuto2\_2**(Project -> Assets -> Scenes -> Tuto -> Tuto2 -> **Tuto2\_2**)

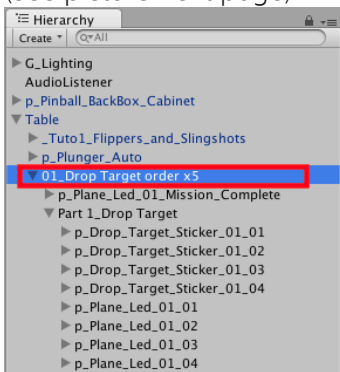
## 03° How to delete a table mechanics inside a mission(target, rollover...) ?

### 1 Open scene Tuto2\_3 :

(Project -> Assets -> Scenes -> Tuto -> Tuto2 -> Tuto2\_3)

### 2 Select the mission :

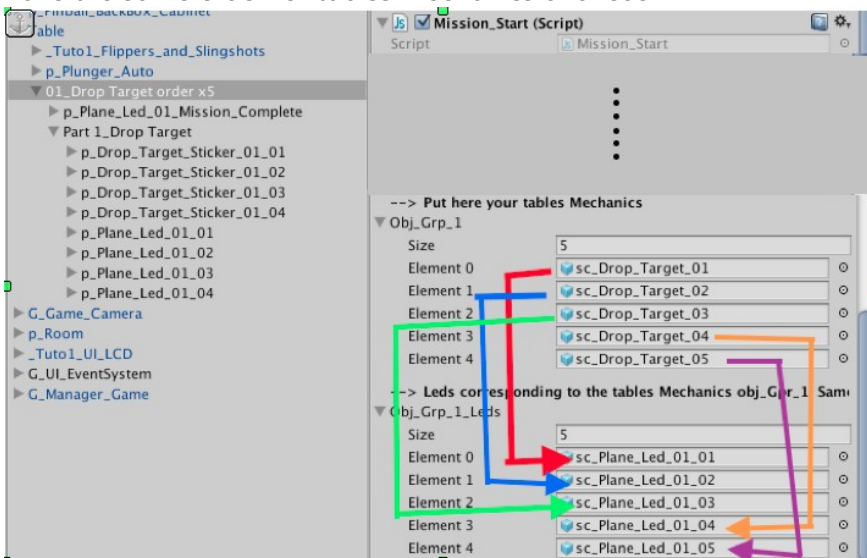
On **Hierarchy** select gameObject **01\_Drop Target order x5** (Table -> 01\_Drop Target order x5)  
(see picture next page)



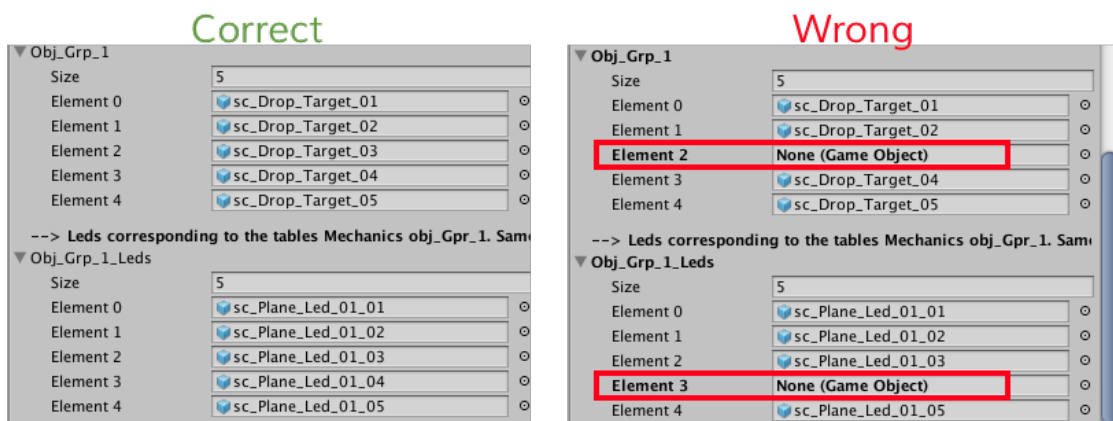
### 3 Modify this mission to create new mission.

## VERY IMPORTANT :

Inside a mission the order of tables mechanics and the order of leds are very important. You need to have the same order for tables mechanics and leds. :

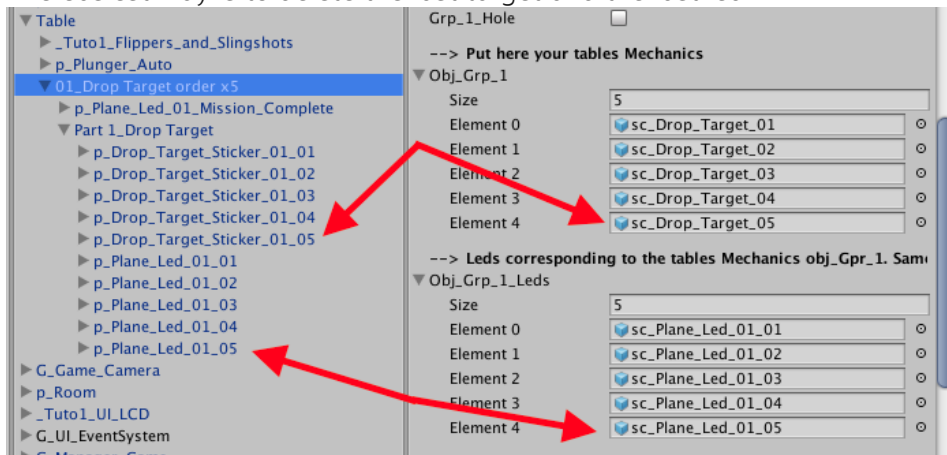


Each elements inside **Obj\_Grp\_1** and **Obj\_Grp\_1\_Leds** must be connected. (See picture next page)

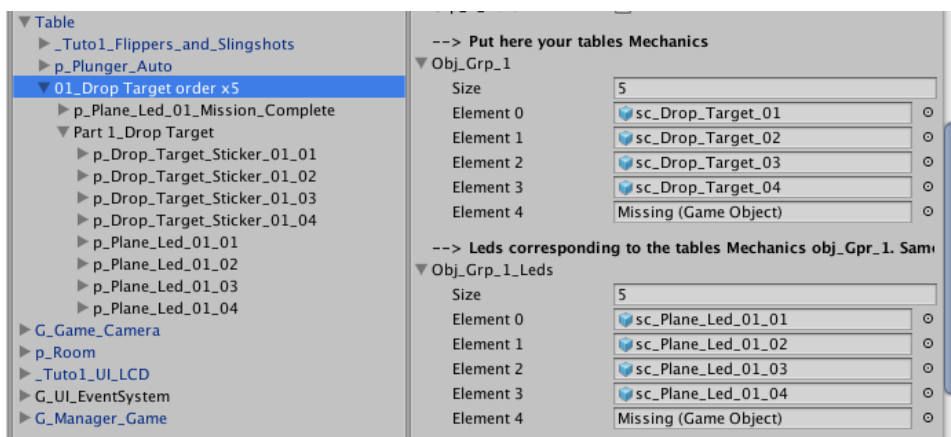


4 On this example we want to hit 4 targets on a precise order.

**Step 1 :** So we need to delete one target and one led from the mission 01\_Drop Target order x5  
The easiest way is to delete the last target and the last led.



**Step 2 :** Delete p\_Drop\_Target\_Sticker\_01\_05 (Table -> 01\_Drop Target order x5 -> Part 1\_Drop Target -> p\_Drop\_Target\_Sticker\_01\_05)  
Delete p\_Plane\_Led\_01\_05 (Table -> Part 1\_Drop Target -> p\_Plane\_Led\_01\_05)

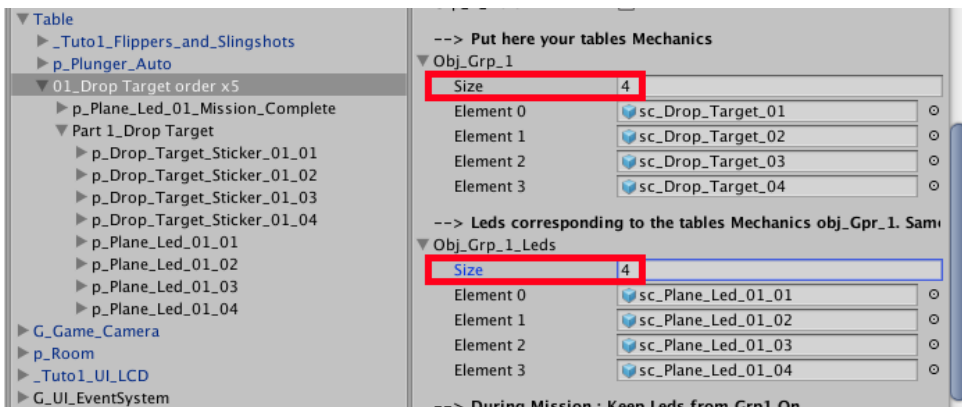


### Step 3 : Modify the mission

Select **01\_Drop Target order x5** (Table -> 01\_Drop Target order x5)

Change **Obj\_Grp\_1** -> Size to 4

Change **Obj\_Grp\_1\_Leds** -> Size to 4



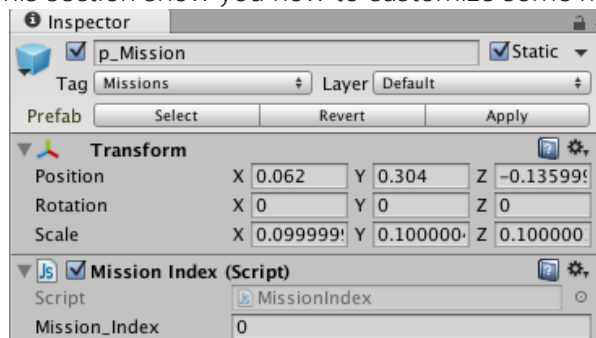
Your new mission is ready. Press Play



If you have a problem open **Tuto2\_4**(Project -> Assets -> Scenes -> Tuto -> Tuto2 -> **Tuto2\_4**)

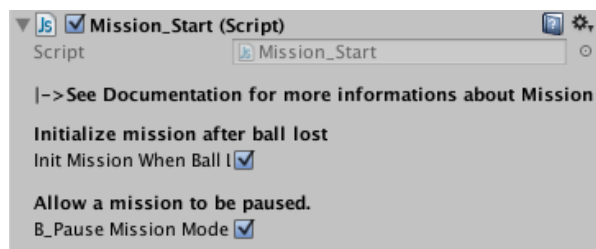
### 04° How to modify basics settings from a mission ?

This section show you how to customize some mission parameters.



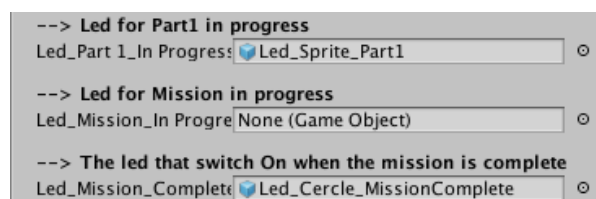
Tag : Missions

**Mission\_index** : **VERY IMPORTANT** Choose a unique Index for each mission.



**InitMissionWhenBallLost** : if True the mission is init when the player lose a ball. False the mission is init only if it's the part 2 of the mission or when the player is game over.

**b\_PauseMissionMode** : If false. Mission is not affected by the pause of other mission. And the mission couldn't pause other mission



**Led\_Part1\_InProgress** : Switch On a led when mission Part1 is in progress

**Led\_Mission\_InProgress** : Switch On a led when mission Part 2 is in progress

**Led\_Mission\_Complete** : Switch On a led when mission is complete. This led stay switch On until

--> Texts you want to display on LCD screen

Mission\_Txt\_name    -> Mission <-

▼ Mission\_Txt

Size	14
Element 0	Mission Complete
Element 1	Mission Failed
Element 2	Multiplier x
Element 3	Super Bonus
Element 4	hit target x
Element 5	x
Element 6	Random Bonus
Element 7	Extra Ball
Element 8	Ball Saver
Element 9	Points
Element 10	Kickback open
Element 11	Word
Element 12	Jackpot
Element 13	Mission Start

the player is game over  
**Mission\_Txt\_name** : Mission name

--> Options during mission

**Timer**

B\_Mission\_Timer    ☐

B\_Mission\_Multi\_Timer ☒

Mission\_Time    15

When mission Part 2 start you could choose to add a mission Timer. If timer = 0 mission is failed.

**b\_Mission\_Timer** : If true : Timer is not initialized during mission part 2.

**b\_Mission\_Multi\_Timer** : If true : Timer is initialized when ball hit an object

**Mission\_Timer** : Timer duration

**Multi Ball is only available with Rollover on part 2**

**Multi ball (only available for Rollover Gpr2)**

Multi Ball    ☐

Number Of Ball    3

Jackpot Points    20000

Multi-ball starts when Mission part 1 is ended and stop when there is only one ball on playfield.

**MultiBall** : if true, multi ball start when mission part 1 is ended.

MultiBall ended when all the multiball are ejected and there is only one ball on playfield

**NumberOfBall** : The number of multi ball.

**JackpotPoints** : Points win when ball go through a rollover

Bonus options when a mission is complete

--> Options when Mission is Complete

Points    20000

**Random Bonus between (ExtraBall,BallSaver,Multiplier,Points)**

Random\_Bonus    ☐

Extra Ball    ☐

Ball Saver    ☐

Ball Saver Duration    10

Multiplier    ☐

Kick Back    ☐

Begin With Kick Back    ☐

▼ Obj\_Door\_Kickback

Size    0

▼ Obj\_Led\_Kickback

Size    0

**Choose only one option at a time**

**Random\_Bonus** : choose a bonus randomly between Extra Ball, Ball Saver, Multiplier, points

**ExtraBall** : win an extra ball

**BallSaver** : Ball saver start

**BallSaverDuration** : Choose the duration of the ball Saver

**Multiplier** : increase the Bonus multiplier

## 05° How to add a ramp ?

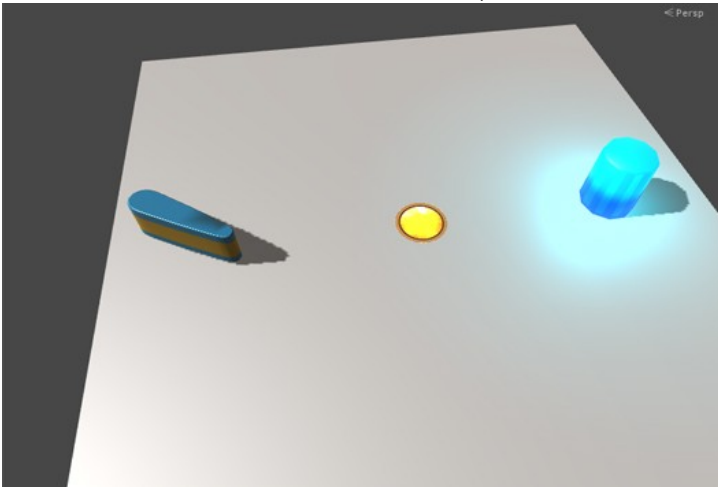
You find ready to use ramp and pipe inside folder Project -> Assets -> Prefabs -> Grp\_Ramps\_And\_Pipes -> **\_READY TO USE Pipe and Ramp**

**Example :** drag'n'drop prefab **01\_Ramp\_01** inside gameObject **Table** on the Hierarchy.  
(Project -> Assets -> Prefabs -> Grp\_Ramps\_And\_Pipes -> **\_READY TO USE Pipe and Ramp** -> 01\_Ramp\_01)

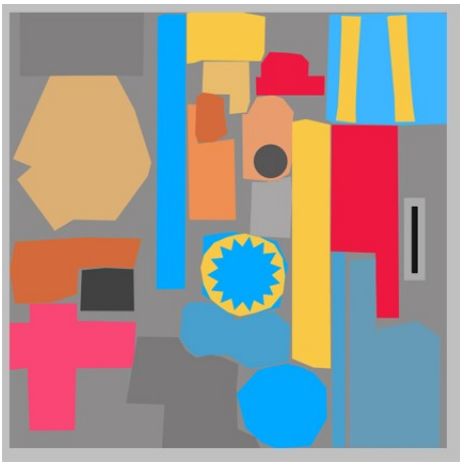
If you want to create your own ramp and pipe see **Documentation\_Part\_2** section **Ramp and pipe**.

## 06° How to modify pinball illustration (cabinet, playfield, leds ...)

**Step 1 :** In Unity open : **Tutorial\_Graphics**  
Assets -> Scenes -> Tuto -> Tuto\_Graphics -> Tutorial\_Graphics

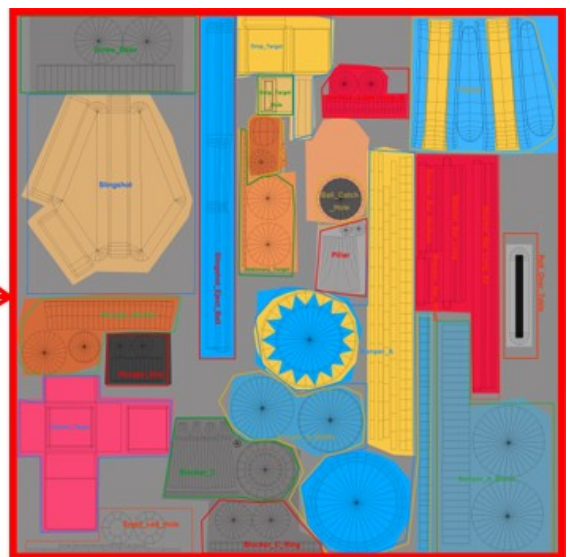
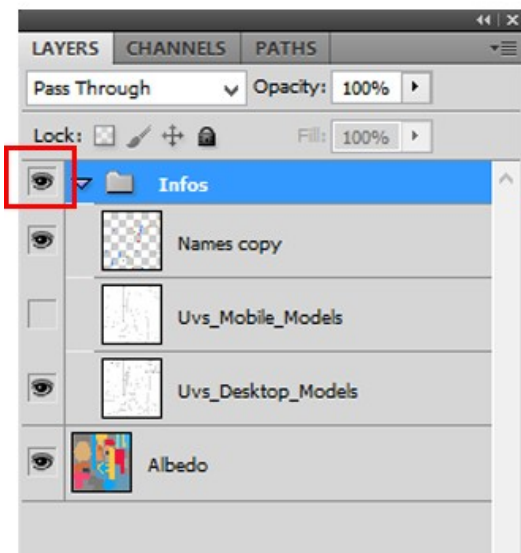


**Step 2 :** Open your favorite drawing software :



Step 3 : Open Assets ->Textures -> Textures\_Tuto -> [Tuto\\_Texture\\_02\\_Albedo\\_v2](#)

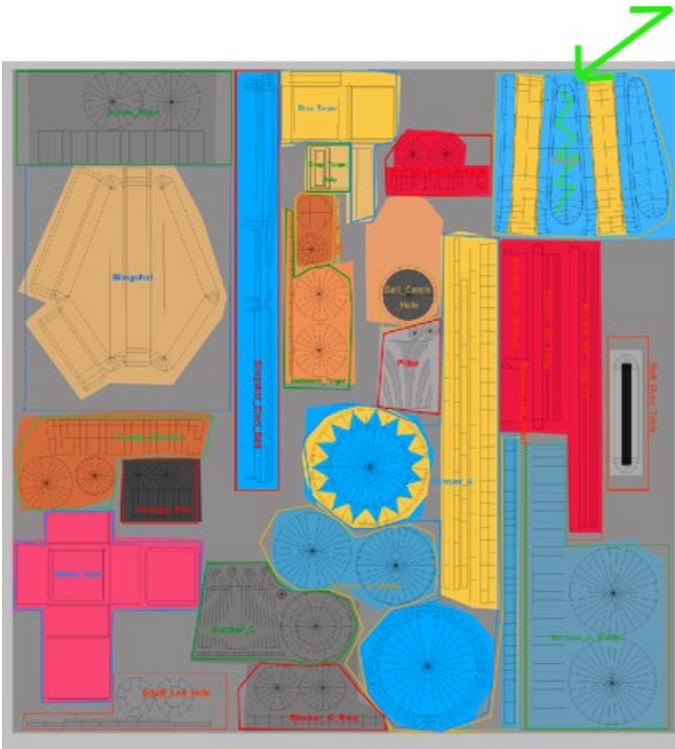
Step 4 : Enable Infos Layer



Step 5 : Create new layer for greater comfort.

Step 6 : Draw what you want on the texture.

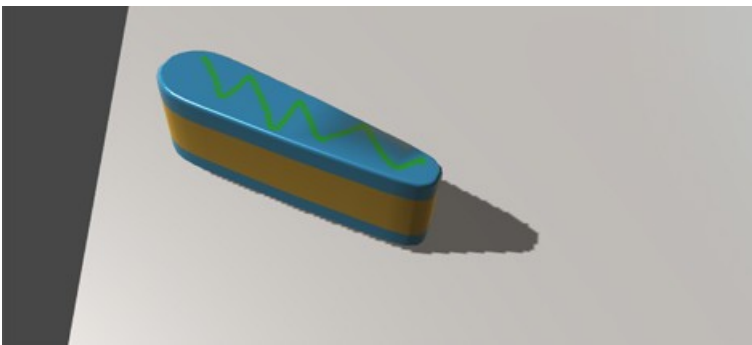




Step 7 : Disable Infos Layer

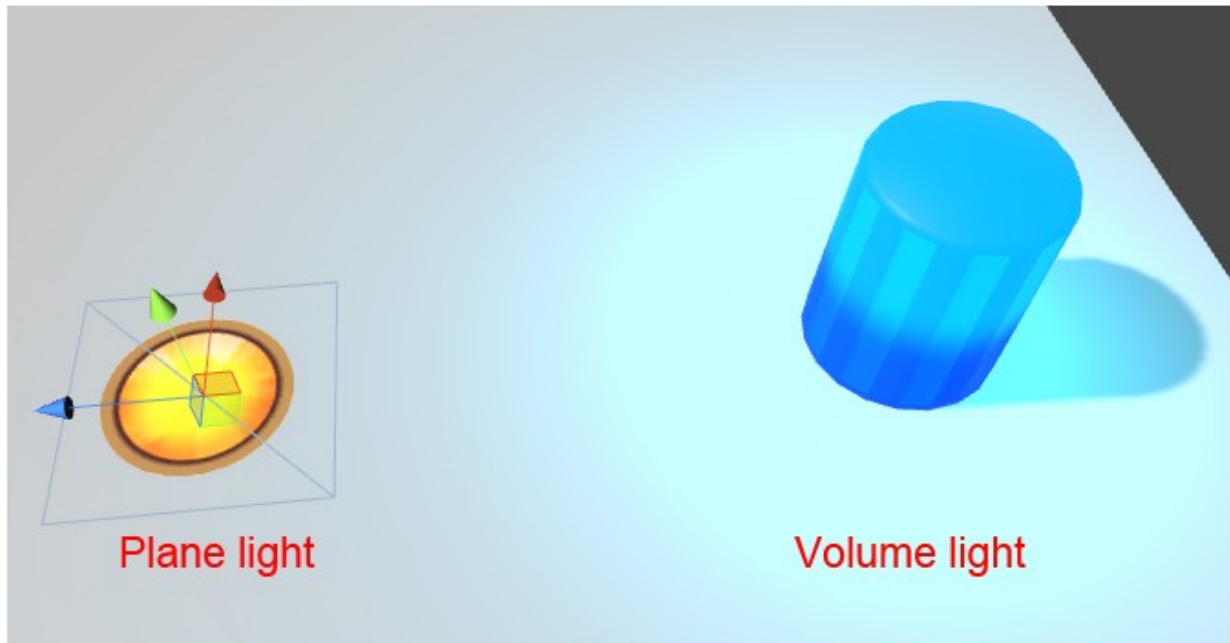
Step 8 : Save Texture in psd

Step 9 : Open Unity : texture automatically change



Lights are separate in 2 categories : plane light and volume light  
Each light need one albedo texture and one emission texture.

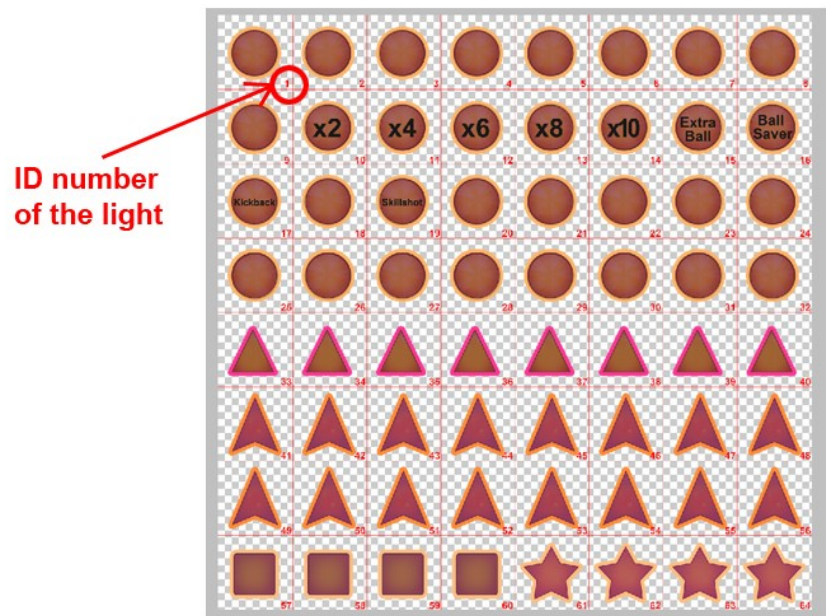
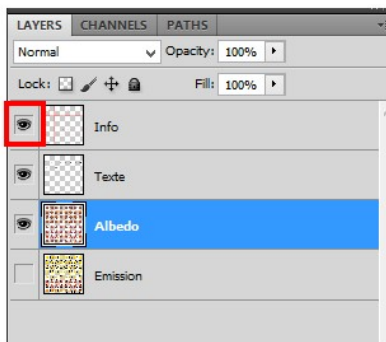




**Step 1 :** In your drawing software:

Open Assets ->Textures -> Textures\_Tuto -> [Tuto\\_Sticker\\_Led\\_01\\_Albedo](#)

**Step 2 :** Enable Infos Layer



Step 3 : On a new layer write the word **Test** (In the 20 id number square )

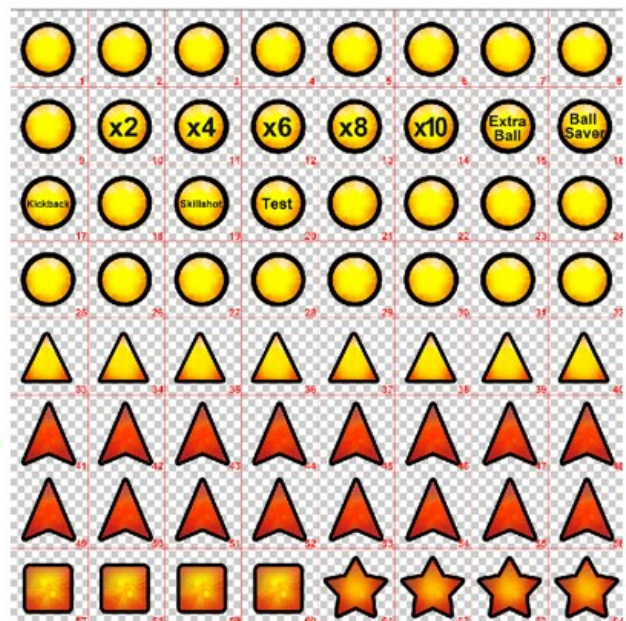
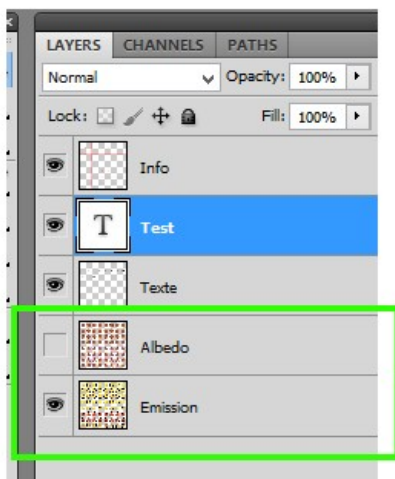


Step 4 : Disable info layer

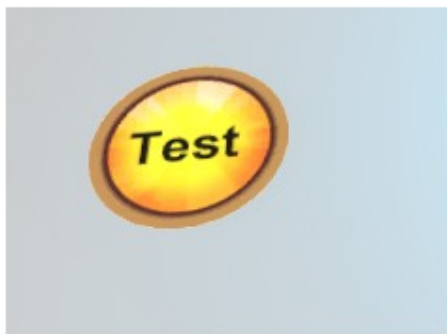
Step 5 : Save

Step 6 : Disable albedo layer

Step 7 : Enable Emission Layer



Step 8 : Save in psd with the name **Tuto\_Sticker\_Led\_01\_Emission.psd**



Step 9 : Open Unity : texture automatically change  
Volume light work in a similar way.

## 07° How to easily test a mission

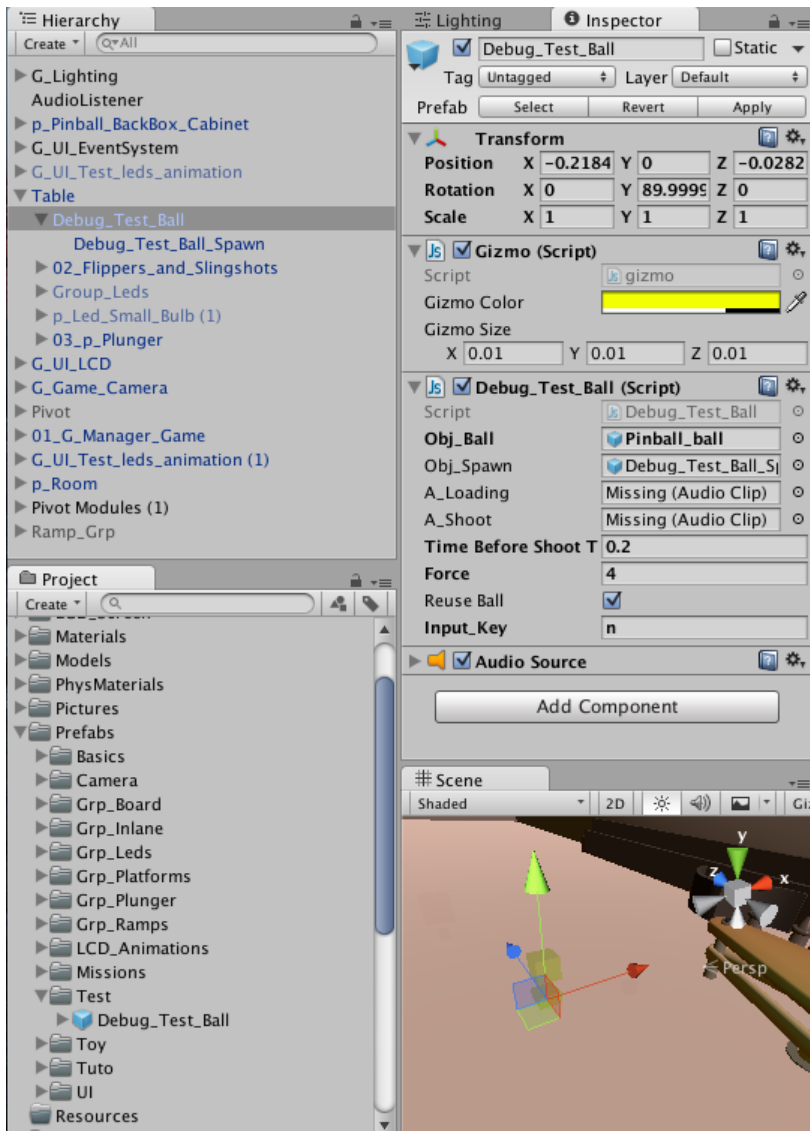
**Debug\_Test\_Ball** is used to help you test mission.

### Step 1 :

Open Project -> Assets -> Scenes -> Tuto -> Tuto6 -> **Tuto6**

### Step 2 :

Open Hierachy -> Table and select **Debug\_Test\_Ball** (pic 1).



### Step 3 :

Start **Play Mode**.



Press **N** : A ball spawn.

Release **N** : ball is ejected on **Z Debug\_Test\_Ball** direction.

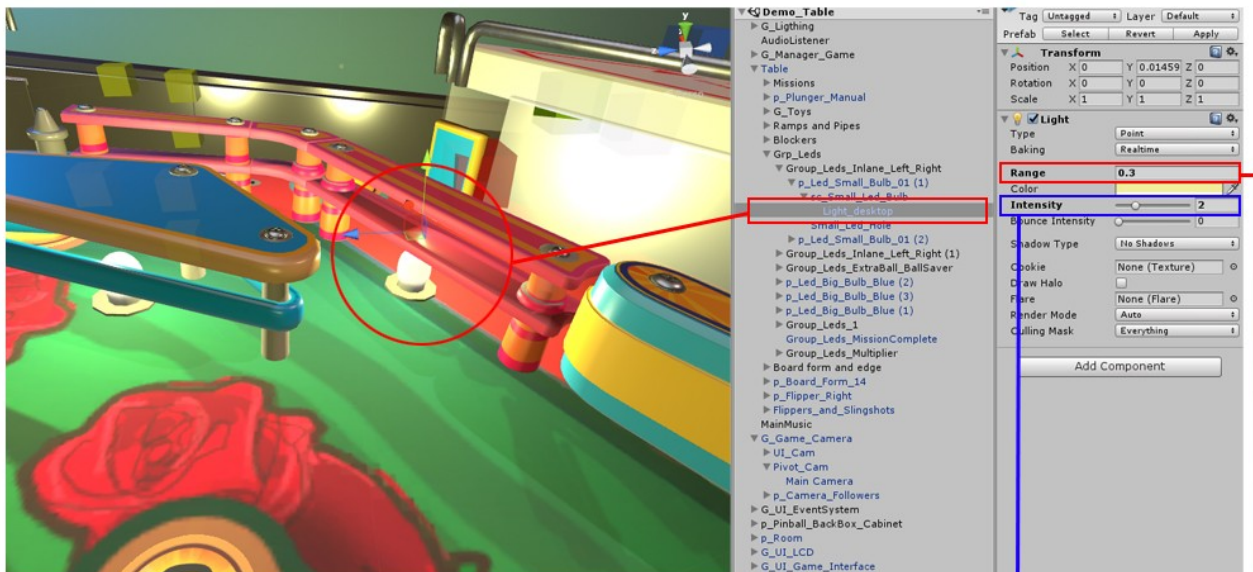
You could put as many **Debug\_Test\_Ball** as you want. Choose a unique input for each of them.  
It is an easy way to test mission.



## 08° Light intensity and pixel light count

Cabinet Light Intensity:

In hierarchy tab select one light.

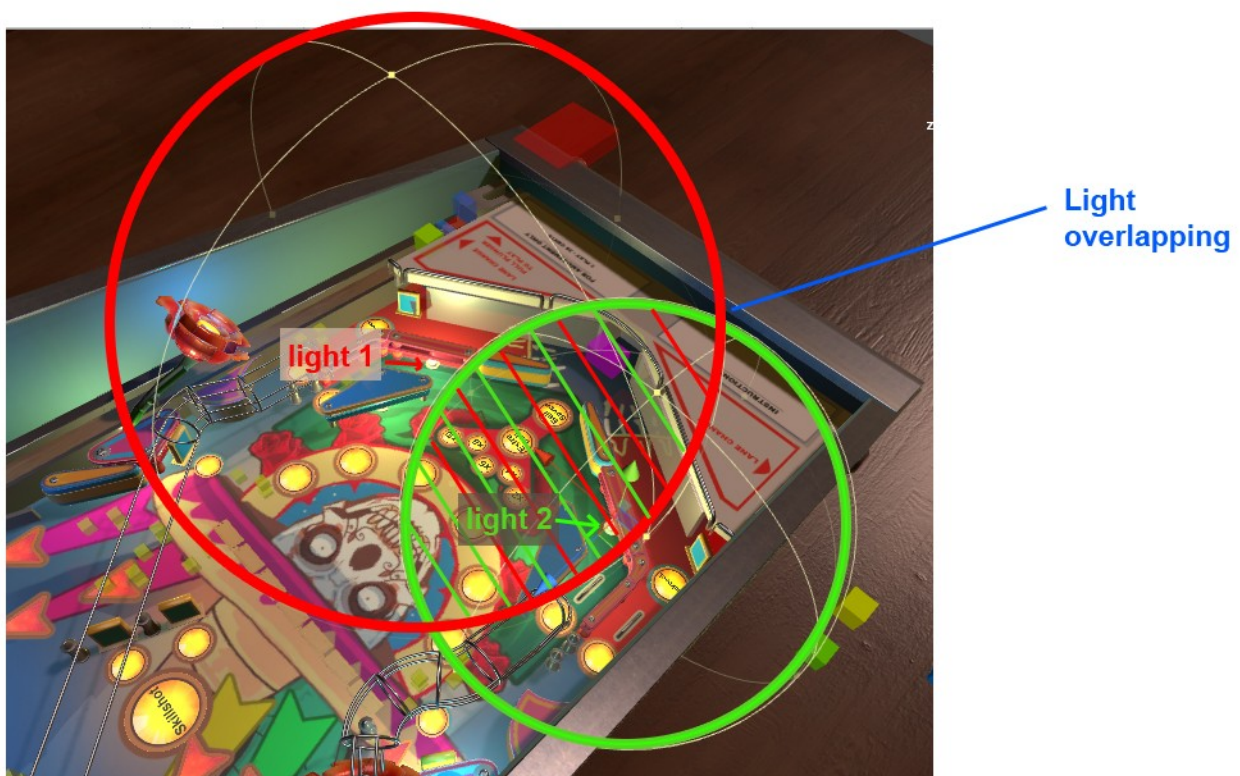


Increase or decrease intensity of light

Increase or decrease light size

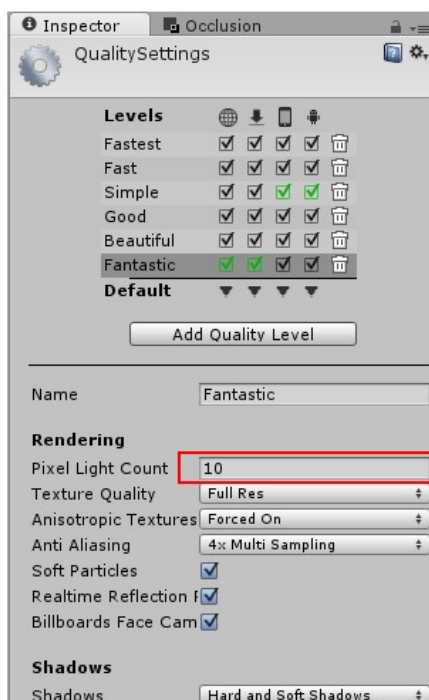
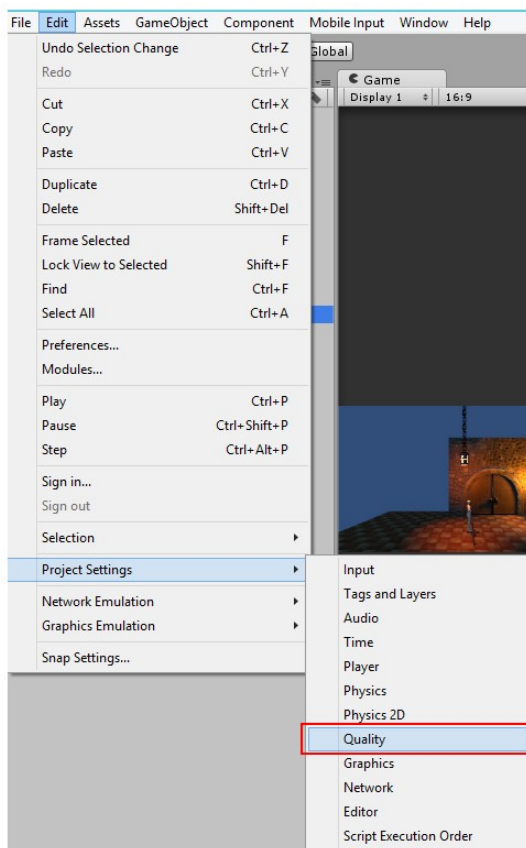
Tips: If a lot of light overlap you need to increase pixel light count to avoid strange result (Light appear to flash or disappear).

Pixel Light Count might use a lot of CPU. Choose the lowest value as possible , decrease light range value or move light if possible.



Pixel Light count : Increase or decrease pixel light count :

Step 1 : Open Edit -> Project Settings -> Quality

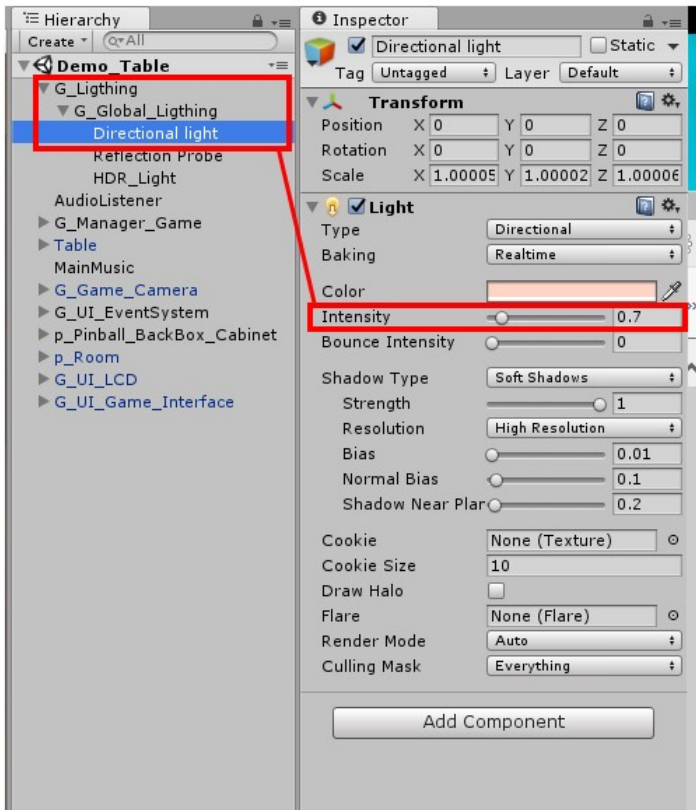


Pixel Light Count

Ambiance Light : Increase or decrease ambient lighting

Step 1 : In hierarchy tab select **Directional light**.

Step 2 : Increase or decrease **Intensity** value.



09° Build issue.


If you have an issue when you create a build of your scene :

- 1- Create a new Empty scene before you export your pinball. (File -> New Scene)
- 2- Export your scene.


10° Quality Settings.

Here you find the parameters you choose for the quality setting when you create a build.

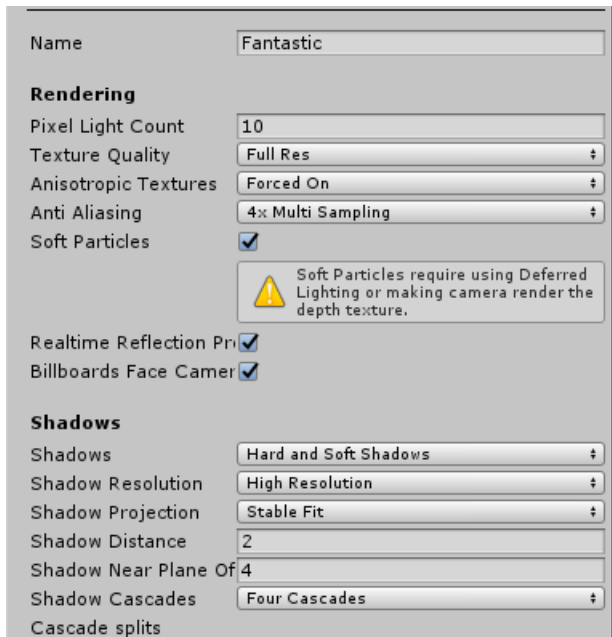
Quality : Good

Name	Good
<b>Rendering</b>	
Pixel Light Count	10
Texture Quality	Full Res
Anisotropic Textures	Per Texture
Anti Aliasing	2x Multi Sampling
Soft Particles	<input checked="" type="checkbox"/>
 Soft Particles require using Deferred Lighting or making camera render the depth texture.	
Realtime Reflection Pro	<input checked="" type="checkbox"/>
Billboards Face Camera	<input checked="" type="checkbox"/>
<b>Shadows</b>	
Shadows	Hard and Soft Shadows
Shadow Resolution	Medium Resolution
Shadow Projection	Stable Fit
Shadow Distance	4
Shadow Near Plane Of	4
Shadow Cascades	Two Cascades
Cascade splits	

Quality : Beautiful

Name	Beautiful
<b>Rendering</b>	
Pixel Light Count	10
Texture Quality	Full Res
Anisotropic Textures	Forced On
Anti Aliasing	2x Multi Sampling
Soft Particles	<input checked="" type="checkbox"/>
 Soft Particles require using Deferred Lighting or making camera render the depth texture.	
Realtime Reflection Pro	<input checked="" type="checkbox"/>
Billboards Face Camera	<input checked="" type="checkbox"/>
<b>Shadows</b>	
Shadows	Hard and Soft Shadows
Shadow Resolution	High Resolution
Shadow Projection	Stable Fit
Shadow Distance	2
Shadow Near Plane Of	4
Shadow Cascades	Two Cascades
Cascade splits	

Quality : Fantastic



11° Mobile Control.

See section Mobile Control on Documentation Part 2 PDF.

## Troubleshooting :

Usually if there is an error on the console window check if everything is well configure and connect on

- Table mechanics.
- Missions
- GameManager

### Mission :

Check if your mission have a **unique ID**.

If you want a mission with just the **part 1**. Check if **HowManyTime\_Grp\_2 = 0**.

Choose only **1** type of tables mechanics.

Check if there is **no empty Element** inside **Obj\_Grp\_1**, **Obj\_Grp\_1\_Leds**, **Obj\_Grp\_2**, **Obj\_Grp\_2\_Leds**.

Check if you have the right number of leds inside **Obj\_Grp\_1\_Leds** and **Obj\_Grp\_2\_Leds**.

If you choose Kickback option check if kickback is connected

Check if animations is missing

**Table Mechanics** (targets, rollover, bumper, spinner and hole) :

Check if each table Mechanic have a **unique ID** inside a mission.



Check if each table Mechanic is connected to the mission (variable Parent\_Manager).

### Export :

If you have some lag try to uncheck dynamic batching inside Project Settings -> Player.

### Debug\_Test\_Ball :

Deactivate them when you create your build.

### Realtime lights on old mobile device

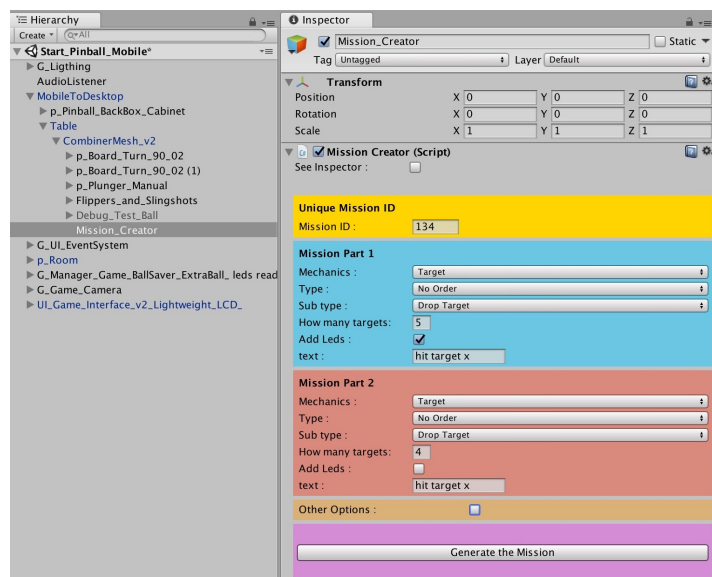
With Unity 5.6, you could have issue with realtime lights (we experiment the issue with galaxy tab 3). Delete realtime light on mobile version if you want to target old device with unity 5.6

## Mission Creator new module:

### Mission Creator module allow to create mission more easily :

You find the **Mission Creator** in the Hierarchy tab.

(Hierarchy tab : MobileToDesktop → CombinerMesh\_v2 → Mission Creator)



1- Choose a unique ID for the mission.



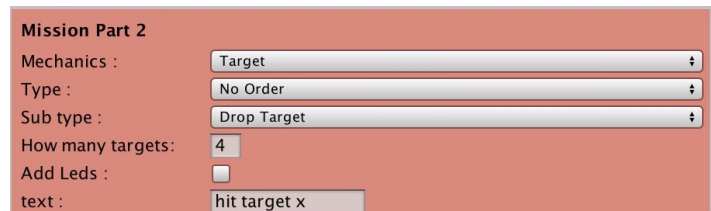
2- Choose which type of mechanics are used for mission Part 1.

*Target, rollover, bumper, spinner, hole*



3- Choose which type of mechanics are used for mission Part 2.

*Target, rollover, bumper, spinner, hole*



**Mission Part 2**

Mechanics : Target

Type : No Order

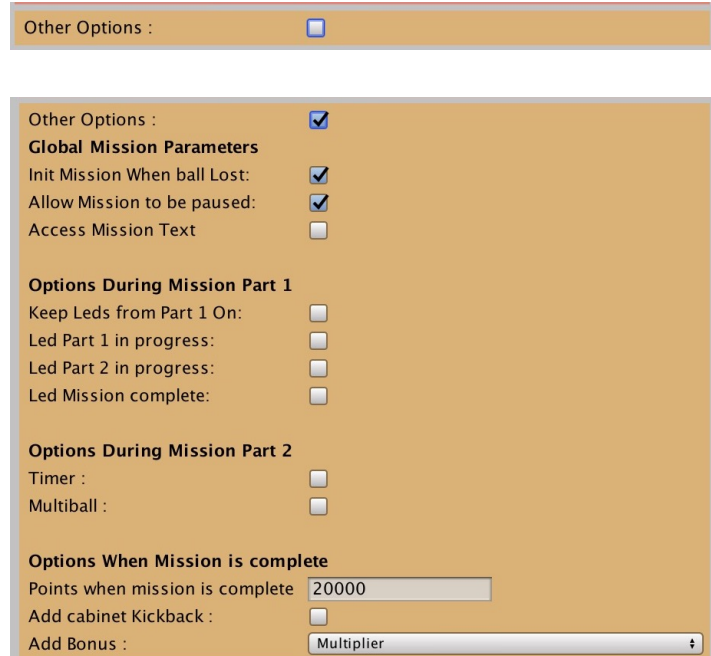
Sub type : Drop Target

How many targets: 4

Add Leds : ☐

text : hit target x

4- Access more Options



**Other Options :** ☐

**Other Options :** ☒

**Global Mission Parameters**

Init Mission When ball Lost: ☒

Allow Mission to be paused: ☒

Access Mission Text ☐

**Options During Mission Part 1**

Keep Leds from Part 1 On: ☐

Led Part 1 in progress: ☐

Led Part 2 in progress: ☐

Led Mission complete: ☐

**Options During Mission Part 2**

Timer : ☐

Multiball : ☐

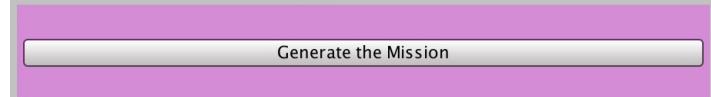
**Options When Mission is complete**

Points when mission is complete 20000

Add cabinet Kickback : ☐

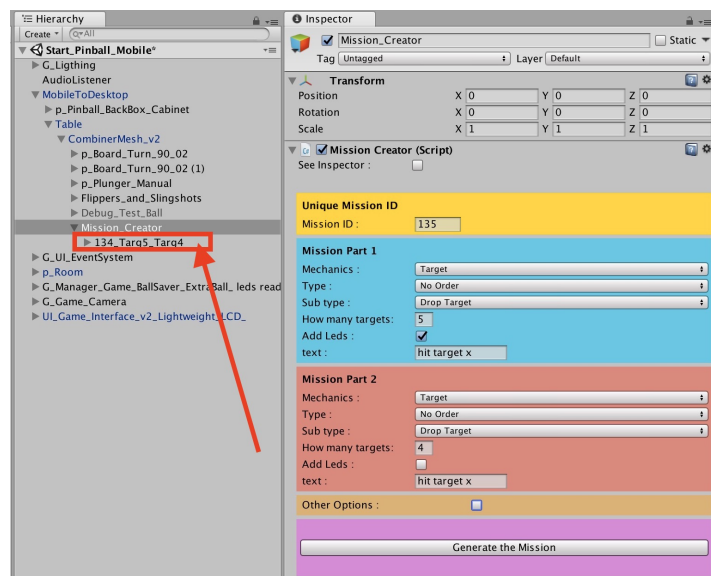
Add Bonus : Multiplier

5- Generate the Mission.



Generate the Mission

The mission is generate inside the gameObject **Mission Creator**



The image shows the Unity Hierarchy and Inspector panels. In the Hierarchy, the 'Mission\_Creator' object is highlighted under '134\_Targ5\_Targ4'. The Inspector shows the 'Mission\_Creator (Script)' component with the following settings:

**Transform**

Position: X 0, Y 0, Z 0

Rotation: X 0, Y 0, Z 0

Scale: X 1, Y 1, Z 1

**Unique Mission ID**

Mission ID: 135

**Mission Part 1**

Mechanics : Target

Type : No Order

Sub type : Drop Target

How many targets: 5

Add Leds : ☒

text : hit target x

**Mission Part 2**

Mechanics : Target

Type : No Order

Sub type : Drop Target

How many targets: 4

Add Leds : ☐

text : hit target x

**Other Options :** ☐

Generate the Mission