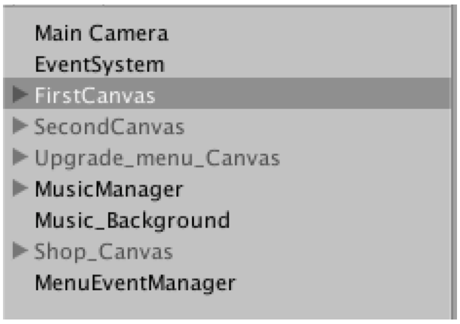
Tutorial for King of the Hill v1.02

1. Menu Scene

a) There is a 4 main GameObjects: FirstCanvas, SecondCanvas,Upgrade_menu_Canvas, Shop_Canvas

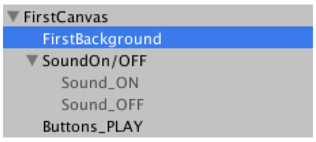


FirstCanvas:

FirstBackground - background image

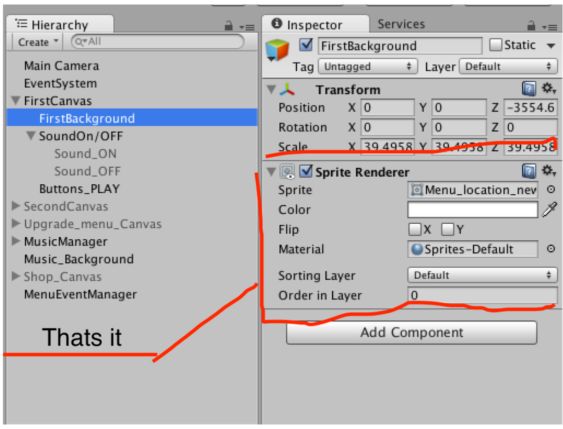
SoundOn/Off - object that handle sound_on and sound_off buttons (to turn on and off sound)

ButtonPlay - button that activate SecondCanvas(selection hero menu) and deactivate FirstCanvas



How to:

1)Change Background - select FirstBackground as u see above then find Sprite Renderer component and left click on a circle right to the Menu_location_new(name of sprite)
Then select your image and double click on it.



☑ FirstBackground ☐ Static
Tag Untagged Layer Default

Transform
Position X 0 Y 0 Z -3554.6
Rotation X 0 Y 0 Z 0
Scale X 39.4958 Y 39.4958 Z 39.4958

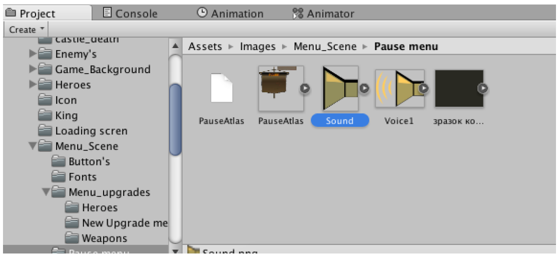
☑ Sprite Renderer
Sprite Menu_location_nev
Color
Flip ☐X ☐Y
Material Sprites-Default
Sorting Layer Default
Order in Layer 0

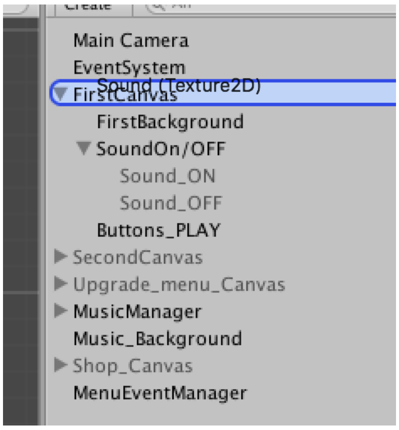
Thats it

2)Change SoundOn/Off images and ButtonPlay images

a) Import your image for button into unity project (you should see it in project tab)

b) drag your image on to FirstCanvas (make it his child)





c) After image is child of FirstCanvas in components tab(inspector) select **"Add Component"** and add image component

d) In Source Image set up your image like this

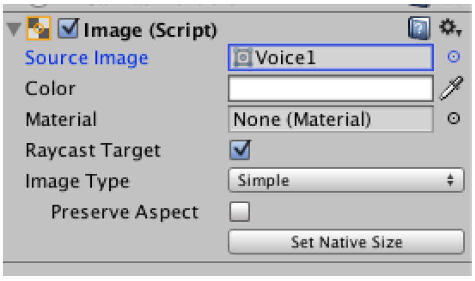
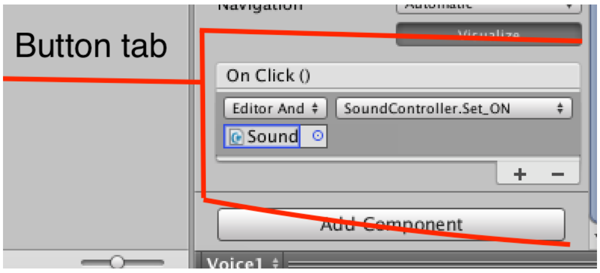


Image (Script)

Source Image	Voice1
Color	
Material	None (Material)
Raycast Target	☑
Image Type	Simple
Preserve Aspect	□
	Set Native Size

e) Add Button component

f) In Button component u should see On Click () tab
 select + and set up action like in button that u want to change



Button tab

Navigation Automatic

Visualize

On Click ()

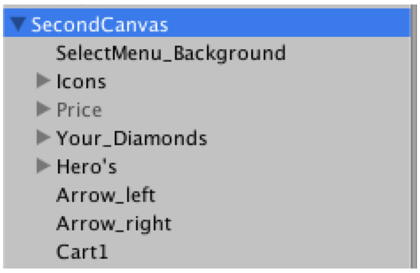
Editor And | SoundController.Set_ON

Sound

+ −

Add Component

Voice1



```
▼ SecondCanvas
    SelectMenu_Background
  ▶ Icons
  ▶ Price
  ▶ Your_Diamonds
  ▶ Hero's
    Arrow_left
    Arrow_right
    Cart1
```

SecondCanvas :

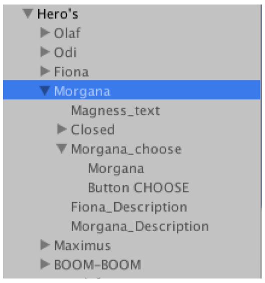
SelectMenu_Background - background for this canvas

Icons - this object handle icons for heroes

Price - this object handle Diamond and text (price for hero) and buy button(unlock hero if enough diamonds), price is active only when hero is **NOT** unlocked

Your_Diamonds - handle Diamonds(left top corner) and text (how many user have)

Hero's - handle all images of heroes (normal in unlocked and black if not)



```
▼ Hero's
  ▶ Olaf
  ▶ Odi
  ▶ Fiona
  ▼ Morgana
      Magness_text
    ▶ Closed
    ▼ Morgana_choose
        Morgana
        Button CHOOSE
      Fiona_Description
      Morgana_Description
  ▶ Maximus
  ▶ BOOM-BOOM
```

Arrow_left and Arrow left - button that change hero (btw u can change hero with swipe too and click on icon)

Cart - button that opens Shop (user buy diamonds for real money)

How to:

1) Change background (as in previous section)

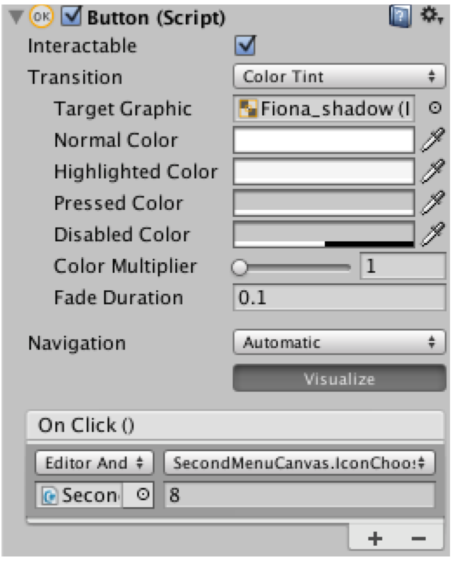
2) Add new icon for hero

a) import icon into your project (you need 2 version, normal and shadow)

b) drag them one by one to icons (set as child of icons object)

c) make shadow as a button (dont forget to add image component too)

d) On Click u need to add function IconChoose (with number) , don't forget number! Number should be next to previous. Like if its seventh hero then icon number should be 6 (hero count - 1)

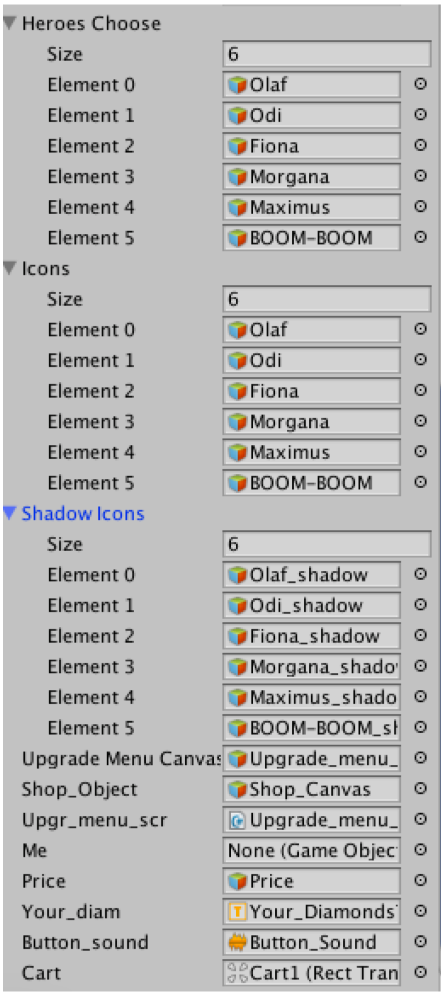


Button (Script)
Interactable ☑
Transition: Color Tint
Target Graphic: Fiona_shadow (I
Normal Color
Highlighted Color
Pressed Color
Disabled Color
Color Multiplier: 1
Fade Duration: 0.1
Navigation: Automatic

On Click ()
Editor And | SecondMenuCanvas.IconChoo:
Secon | 8

e) Select SecondCanvas and find his script component

f) In icons and Shadow icons change size(write how many heroes you have), this will add new element (in case like image right ——> it will create 6 elements) look on new page

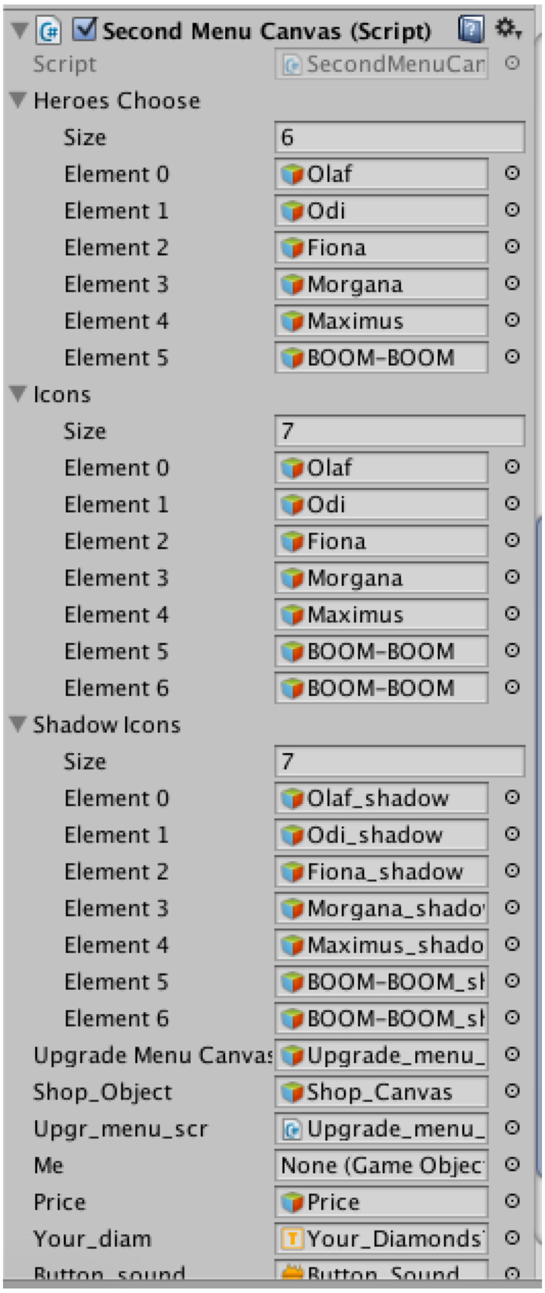


Heroes Choose
Size: 6
Element 0: Olaf
Element 1: Odi
Element 2: Fiona
Element 3: Morgana
Element 4: Maximus
Element 5: BOOM-BOOM
Icons
Size: 6
Element 0: Olaf
Element 1: Odi
Element 2: Fiona
Element 3: Morgana
Element 4: Maximus
Element 5: BOOM-BOOM
Shadow Icons
Size: 6
Element 0: Olaf_shadow
Element 1: Odi_shadow
Element 2: Fiona_shadow
Element 3: Morgana_shado
Element 4: Maximus_shado
Element 5: BOOM-BOOM_sh
Upgrade Menu Canvas: Upgrade_menu_
Shop_Object: Shop_Canvas
Upgr_menu_scr: Upgrade_menu_
Me: None (Game Objec
Price: Price
Your_diam: Your_Diamonds
Button_sound: Button_Sound
Cart: Cart1 (Rect Tran

g) then attach your icon object in new elements

.

btw add new icon after you added a new hero to choose (i will write below how to do it)



Second Menu Canvas (Script)

Script	SecondMenuCar
Heroes Choose	
Size	6
Element 0	Olaf
Element 1	Odi
Element 2	Fiona
Element 3	Morgana
Element 4	Maximus
Element 5	BOOM-BOOM
Icons	
Size	7
Element 0	Olaf
Element 1	Odi
Element 2	Fiona
Element 3	Morgana
Element 4	Maximus
Element 5	BOOM-BOOM
Element 6	BOOM-BOOM
Shadow Icons	
Size	7
Element 0	Olaf_shadow
Element 1	Odi_shadow
Element 2	Fiona_shadow
Element 3	Morgana_shado
Element 4	Maximus_shado
Element 5	BOOM-BOOM_sh
Element 6	BOOM-BOOM_sh
Upgrade Menu Canvas	Upgrade_menu_
Shop_Object	Shop_Canvas
Upgr_menu_scr	Upgrade_menu_
Me	None (Game Objec
Price	Price
Your_diam	Your_Diamonds
Button_sound	Button_Sound

3) All other stuff like image you can change as i wrote below in previous section.

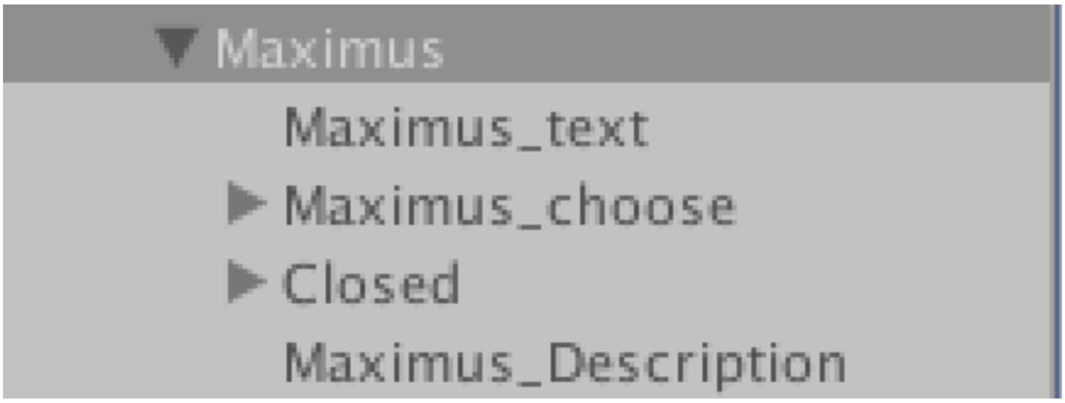
4) Add a HERO to select

a) To add a hero you need a silhouette image and normal image (if hero is unlocked then user see normal , in other case silhouette)

b) Import image to project

c) Create an empty object and name it as your new hero name (“cool_hero_name”)

d)Create two more empty object, name them “Yourheroname_choose and “closed” , drag them to previous object and deactivate them. Create 2 text and call them like in example below (text for description and name)

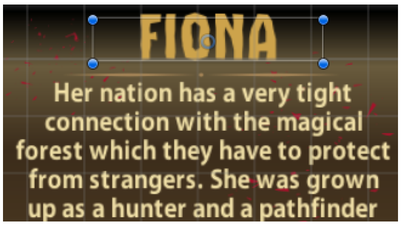


▼ Maximus
  Maximus_text
  ▶ Maximus_choose
  ▶ Closed
  Maximus_Description

d) Add component named "CheckIfClosed" its a C# script.

e) Attach Open and closed Open -> Yourheroname_choose, close -> closed, name - YourheronameCheck

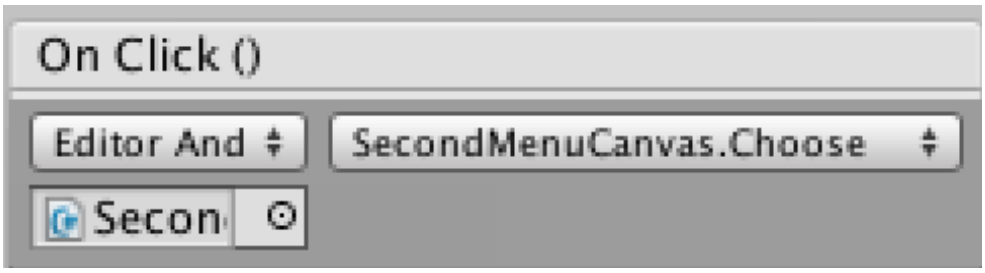
f) Create 2 UI text, first for description the other one for Hero name and make them child of cool_hero_name object as u see above.



FIONA

Her nation has a very tight connection with the magical forest which they have to protect from strangers. She was grown up as a hunter and a pathfinder

g) drag onto choose, hero image and button "choose" and set them as button. Then add function SecondMenuCanvas.Choose



On Click ()

Editor And

SecondMenuCanvas.Choose

Secon

h) drag into closed - your_new_hero silhouette and copy Price (1) object from other available hero.

Upgrade canvas:

stripe_weapon - object that handle icon for weapons, for all heroes, background for it and background for price.

Icons - object that handle all icons for heroes and their names (you can see it in the right top corner)

SquaresPower - object that handle 6 brown, 6 gold and one cap to indicate power upgrade.

All other Squares is same, just indicate other property.

Text_Description - object that handle all text for description for all characteristic.

UpgradeBackground - object that handle background sprite.

Text_YourDiamonds - UI text that show how many diamonds user have.

TextPrices - object that handle all UI text that show price for upgrade (there are 7 texts)

Text_Names - object that handle all UI text that show name characteristic

Continue - button to run next scene (gameplay scene)

Back - return to previous canvas.

Buttons_Buy - object that handle all buy buttons, there are 7 buttons at all.
Cart1 - open shop canvas
LoadingScreen - loading screen image
Diamonds - image of diamonds (locate left to **Text_YourDiamonds)**

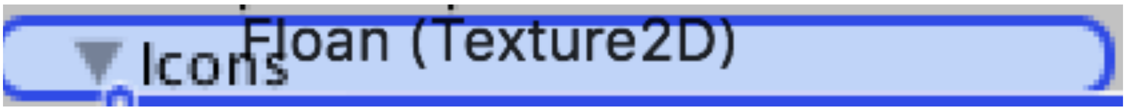
How to:

1) Add new hero to upgrade:

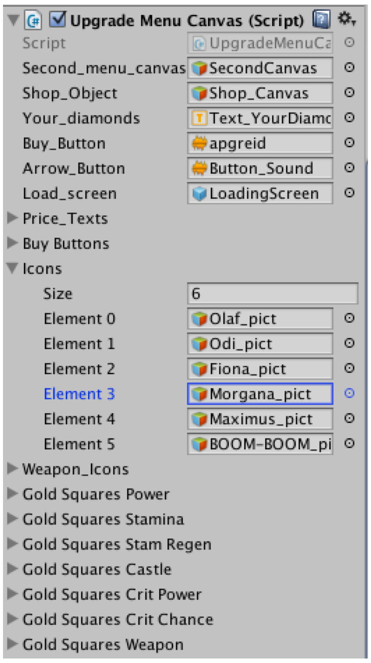
a) Import icon to project

b) Create object that handle icon and text for hero name.

c) Drag that object onto **Icons**



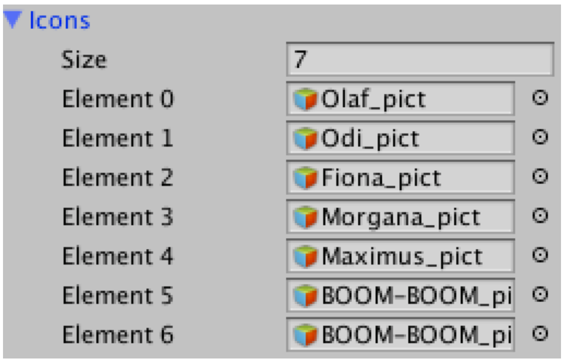
d) Select **Upgrade_Menu_Canvas** object and find Upgrade Menu Canvas script component



Upgrade Menu Canvas (Script)

Script	UpgradeMenuCa
Second_menu_canvas	SecondCanvas
Shop_Object	Shop_Canvas
Your_diamonds	Text_YourDiamc
Buy_Button	appreid
Arrow_Button	Button_Sound
Load_screen	LoadingScreen
Price_Texts	
Buy Buttons	
Icons	
Size	6
Element 0	Olaf_pict
Element 1	Odi_pict
Element 2	Fiona_pict
Element 3	Morgana_pict
Element 4	Maximus_pict
Element 5	BOOM-BOOM_pi
Weapon_Icons	
Gold Squares Power	
Gold Squares Stamina	
Gold Squares Stam Regen	
Gold Squares Castle	
Gold Squares Crit Power	
Gold Squares Crit Chance	
Gold Squares Weapon	

e) select Icons array and increase size by 1

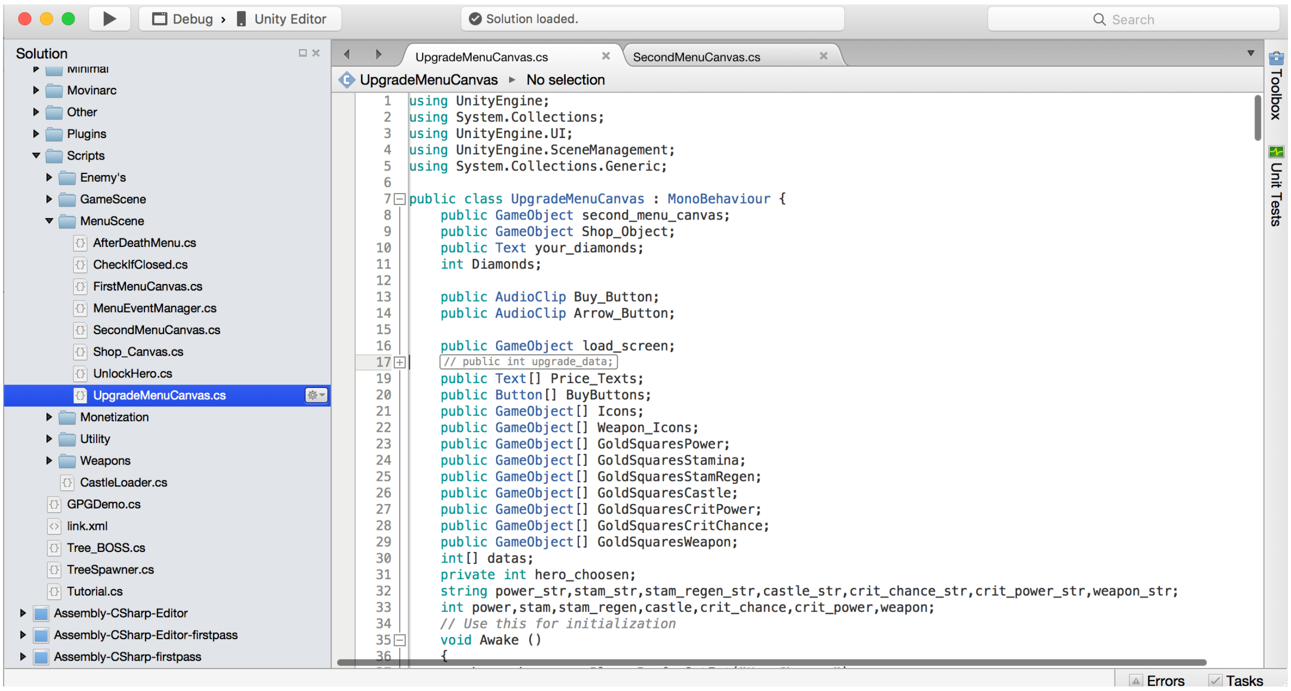


Icons

Size	7
Element 0	Olaf_pict
Element 1	Odi_pict
Element 2	Fiona_pict
Element 3	Morgana_pict
Element 4	Maximus_pict
Element 5	BOOM-BOOM_pi
Element 6	BOOM-BOOM_pi

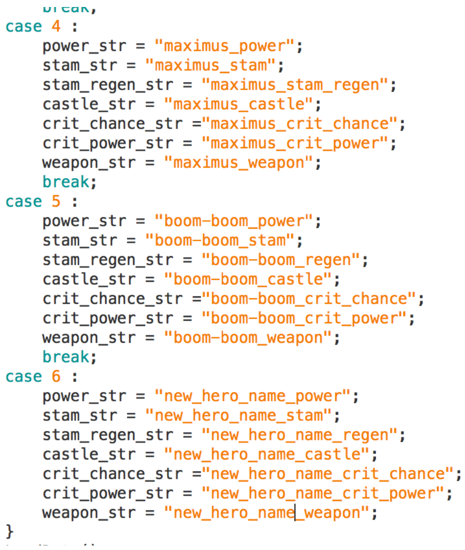
f) in new line attach object that you create in point **b**

g) open UpgradeMenuCanvas script



```
using UnityEngine;
using System.Collections;
using UnityEngine.UI;
using UnityEngine.SceneManagement;
using System.Collections.Generic;

public class UpgradeMenuCanvas : MonoBehaviour {
    public GameObject second_menu_canvas;
    public GameObject Shop_Object;
    public Text your_diamonds;
    int Diamonds;

    public AudioClip Buy_Button;
    public AudioClip Arrow_Button;

    public GameObject load_screen;
    // public int upgrade_data;
    public Text[] Price_Texts;
    public Button[] BuyButtons;
    public GameObject[] Icons;
    public GameObject[] Weapon_Icons;
    public GameObject[] GoldSquaresPower;
    public GameObject[] GoldSquaresStamina;
    public GameObject[] GoldSquaresStamRegen;
    public GameObject[] GoldSquaresCastle;
    public GameObject[] GoldSquaresCritPower;
    public GameObject[] GoldSquaresCritChance;
    public GameObject[] GoldSquaresWeapon;
    int[] datas;
    private int hero_choosen;
    string power_str,stam_str,stam_regen_str,castle_str,crit_chance_str,crit_power_str,weapon_str;
    int power,stam,stam_regen,castle,crit_chance,crit_power,weapon;
    // Use this for initialization
    void Awake ()
    {
```

h) in function LoadString , in Switch (hero) **add** one more case and create key_names for your new hero



```
        break;
    case 4 :
        power_str = "maximus_power";
        stam_str = "maximus_stam";
        stam_regen_str = "maximus_stam_regen";
        castle_str = "maximus_castle";
        crit_chance_str ="maximus_crit_chance";
        crit_power_str = "maximus_crit_power";
        weapon_str = "maximus_weapon";
        break;
    case 5 :
        power_str = "boom-boom_power";
        stam_str = "boom-boom_stam";
        stam_regen_str = "boom-boom_regen";
        castle_str = "boom-boom_castle";
        crit_chance_str ="boom-boom_crit_chance";
        crit_power_str = "boom-boom_crit_power";
        weapon_str = "boom-boom_weapon";
        break;
    case 6 :
        power_str = "new_hero_name_power";
        stam_str = "new_hero_name_stam";
        stam_regen_str = "new_hero_name_regen";
        castle_str = "new_hero_name_castle";
        crit_chance_str ="new_hero_name_crit_chance";
        crit_power_str = "new_hero_name_crit_power";
        weapon_str = "new_hero_name_weapon";
    }
```

Now you can upgrade your new hero.

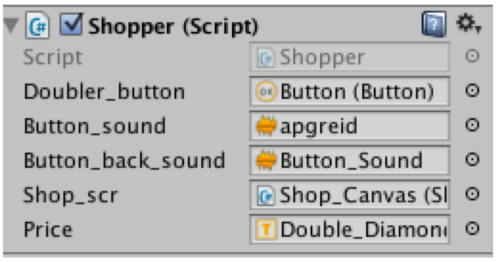
Shop Canvas:

How to:

1) Set up your id for in app purchases

a) Enable unity in app purchasing, how to do it is described in this link **https://unity3d.com/ru/learn/tutorials/topics/analytics/integrating-unity-iap-your-game**

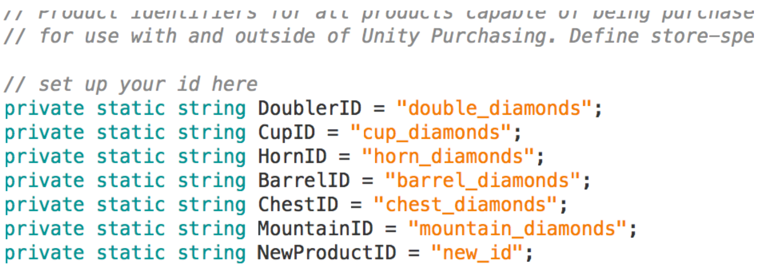
b) Open Shopper script, to do it select Shop item and find shopper script component



☑ Shopper (Script)

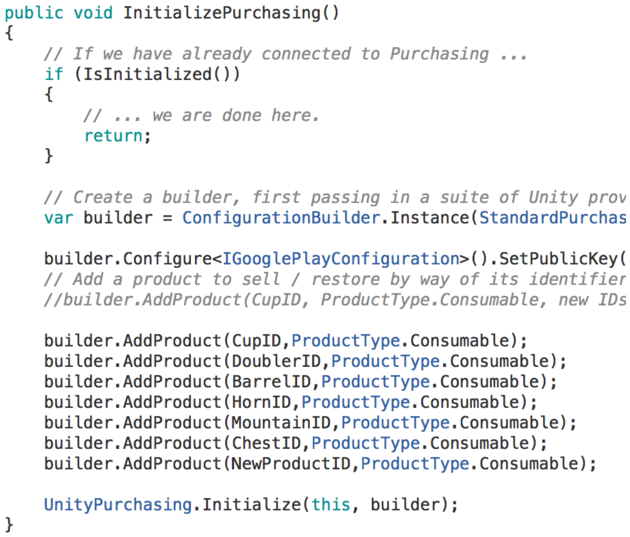
Script	Shopper
Doubler_button	Button (Button)
Button_sound	apgreid
Button_back_sound	Button_Sound
Shop_scr	Shop_Canvas (SI
Price	Double_Diamon(

c) In script add new id like below , or change current for your own.



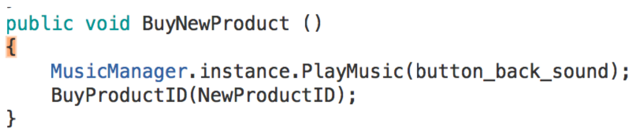
```
// Product identifiers for all products capable of being purchase
// for use with and outside of Unity Purchasing. Define store-spe

// set up your id here
private static string DoublerID = "double_diamonds";
private static string CupID = "cup_diamonds";
private static string HornID = "horn_diamonds";
private static string BarrelID = "barrel_diamonds";
private static string ChestID = "chest_diamonds";
private static string MountainID = "mountain_diamonds";
private static string NewProductID = "new_id";
```

d) Then add product in InitializePurchasing function and set it type (consumable,non-consumable or subscription) and if it android change your public key



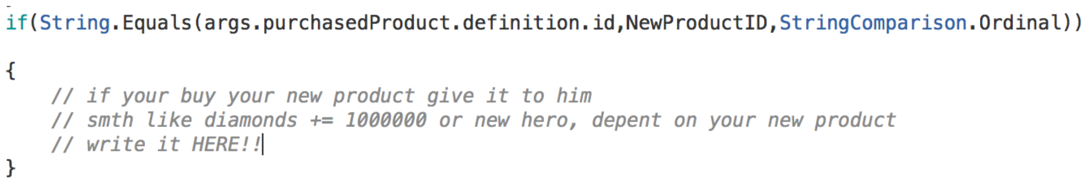
```
public void InitializePurchasing()
{
    // If we have already connected to Purchasing ...
    if (IsInitialized())
    {
        // ... we are done here.
        return;
    }

    // Create a builder, first passing in a suite of Unity prov
    var builder = ConfigurationBuilder.Instance(StandardPurchas

    builder.Configure<IGooglePlayConfiguration>().SetPublicKey(
    // Add a product to sell / restore by way of its identifier
    //builder.AddProduct(CupID, ProductType.Consumable, new IDs

    builder.AddProduct(CupID,ProductType.Consumable);
    builder.AddProduct(DoublerID,ProductType.Consumable);
    builder.AddProduct(BarrelID,ProductType.Consumable);
    builder.AddProduct(HornID,ProductType.Consumable);
    builder.AddProduct(MountainID,ProductType.Consumable);
    builder.AddProduct(ChestID,ProductType.Consumable);
    builder.AddProduct(NewProductID,ProductType.Consumable);

    UnityPurchasing.Initialize(this, builder);
}
```

e) create function for button



```
public void BuyNewProduct ()
{
    MusicManager.instance.PlayMusic(button_back_sound);
    BuyProductID(NewProductID);
}
```

f) Create new “if” in PurchaseProcessingResult function



```
if(String.Equals(args.purchasedProduct.definition.id,NewProductID,StringComparison.Ordinal))

{
    // if your buy your new product give it to him
    // smth like diamonds += 1000000 or new hero, depent on your new product
    // write it HERE!!
}
```

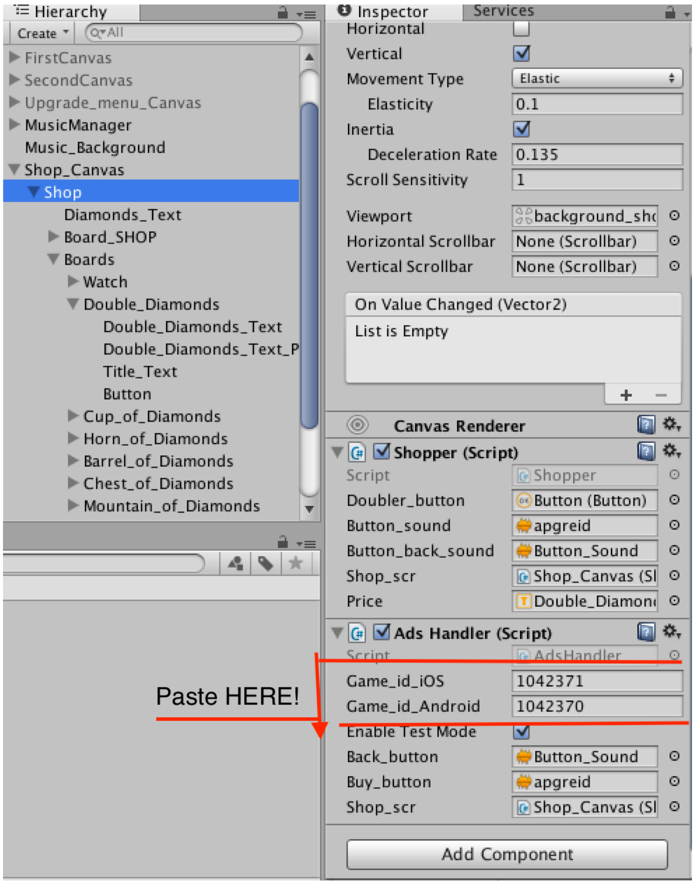
All done now you set up your id for IAP.

2) Set up your id for UnityADS

a) Select Shop object

b) find AdsHandler(script) component

c) paste your id for iOS and Android

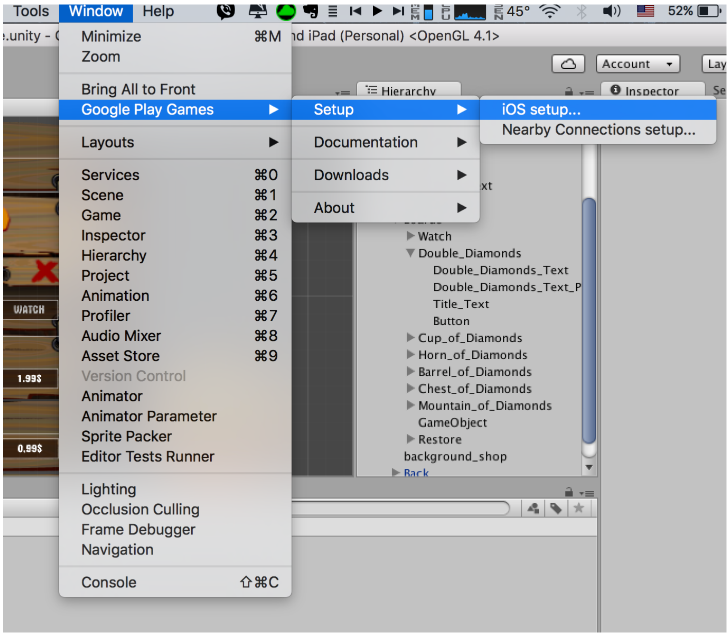


Horizontal □
Vertical ☑
Movement Type: Elastic
Elasticity: 0.1
Inertia ☑
Deceleration Rate: 0.135
Scroll Sensitivity: 1
Viewport: background_sho
Horizontal Scrollbar: None (Scrollbar)
Vertical Scrollbar: None (Scrollbar)
On Value Changed (Vector2)
List is Empty

Shopper (Script)
Script: Shopper
Doubler_button: Button (Button)
Button_sound: apgreid
Button_back_sound: Button_Sound
Shop_scr: Shop_Canvas (Sl
Price: Double_Diamon

Ads Handler (Script)
Script: AdsHandler
Game_id_iOS: 1042371
Game_id_Android: 1042370
Enable Test Mode ☑
Back_button: Button_Sound
Buy_button: apgreid
Shop_scr: Shop_Canvas (Sl

3) Set up your id for cloud save and google games
here is link with how-to guide
https://github.com/playgameservices/play-games-plugin-for-unity



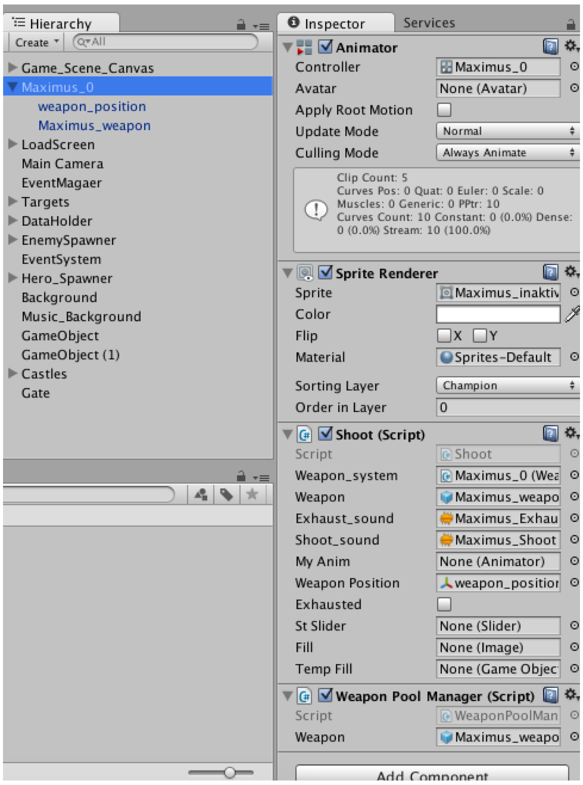
Gameplay Scene

1. Hot to add new hero to gameplay

1) First create prefab in Resoursec/Prefabs/Heroes/NewHeroName

P.S better create a folder, u will need 7 prefabs for each hero (for 7 weapon upgrades)

2) Add Animator,Sprite Rendered. Shoot(script), Weapon Pool Manager(script) components. Also create weapon_position and Maximus Weapon(add sprite renderer component) objects and drag them onto your new hero prefab



Hierarchy

Create ▾

Game_Scene_Canvas
Maximus_0
weapon_position
Maximus_weapon
LoadScreen
Main Camera
EventMagaer
Targets
DataHolder
EnemySpawner
EventSystem
Hero_Spawner
Background
Music_Background
GameObject
GameObject (1)
Castles
Gate

Inspector | Services

☑ Animator

Controller: Maximus_0
Avatar: None (Avatar)
Apply Root Motion: □
Update Mode: Normal
Culling Mode: Always Animate

Clip Count: 5
Curves Pos: 0 Quat: 0 Euler: 0 Scale: 0
Muscles: 0 Generic: 0 PPtr: 10
Curves Count: 10 Constant: 0 (0.0%) Dense: 0 (0.0%) Stream: 10 (100.0%)

☑ Sprite Renderer

Sprite: Maximus_inaktiv
Color:
Flip: □ X □ Y
Material: Sprites-Default
Sorting Layer: Champion
Order in Layer: 0

☑ Shoot (Script)

Script: Shoot
Weapon_system: Maximus_0 (Wea
Weapon: Maximus_weapo
Exhaust_sound: Maximus_Exhau
Shoot_sound: Maximus_Shoot
My Anim: None (Animator)
Weapon Position: weapon_positior
Exhausted: □
St Slider: None (Slider)
Fill: None (Image)
Temp Fill: None (Game Objec

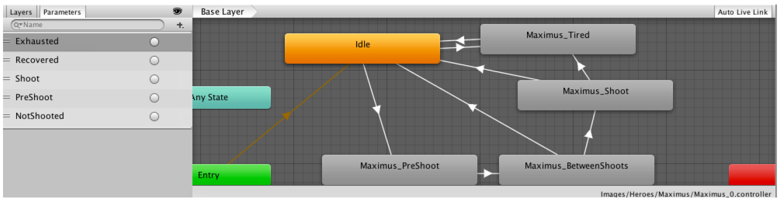
☑ Weapon Pool Manager (Script)

Script: WeaponPoolMan
Weapon: Maximus_weapo

3) Connect all public variables.

4) Change Tag to **Player**

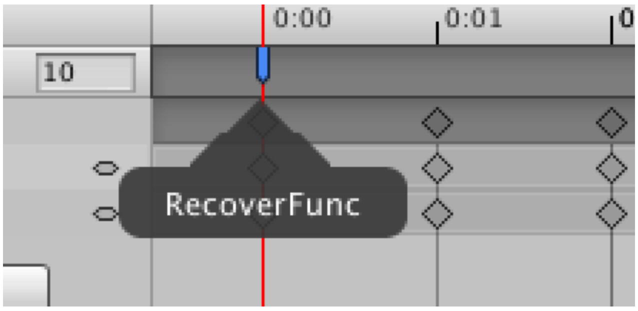
5) Create Animator controller and he should look like this



don't forget about Parameters, also u can look on exist hero to know where parameters are using.

6) Create all animation and create events on

Idle_animation : first frame (recover func)



Shoot_anim : first frame (Shooting)

7) Attach animation in animator

8) Create weapon(projectile) prefab in Resoursec/Prefabs/Weapons/

9) Add Sprite Renderer, Rigidbody 2d, 2d Collider, NewHero_weapon (script, create it), change tag to weapon

10) In script paste this

```
// Use this for initialization
      void Awake ()
      {
            me = gameObject.GetComponent<Rigidbody2D>();

power = power_array2[PlayerPrefs.GetInt(PlayerPrefs.GetString("cur_power"))];
      }


      new public void Shoot ()
      {
            me.AddForce(directionShot);
            me.AddTorque(directionShot.magnitude / power * 0.6f * -1);
      }
```

Btw if weapon don't need to rotate then comment me.AddTorque.
SCRIPT SHOULD INHERITANCE from WEAPON class!!!

11) Attach created weapon in hero prefab.
12) Create new object and call it newhero_position. Select Hero_Spawner object, in Hero Spawner(script) increment Positions size by one and attach object created before.
13) In script Hero Spawner add new case to switch (curr_hero) with new hero.

2) How to add new Enemy

a) Create prefab in Resources/Prefabs/Enemy's/ , set tag **Enemy**, layer - **Enemy.**

b) add sprite renderer, animator, rigidbody2d, 2d collider, audio source components. Create new script (name it new_enemy) and make it inherit from enemy class.

```
public class NewCoolEnemy : Enemy {
```

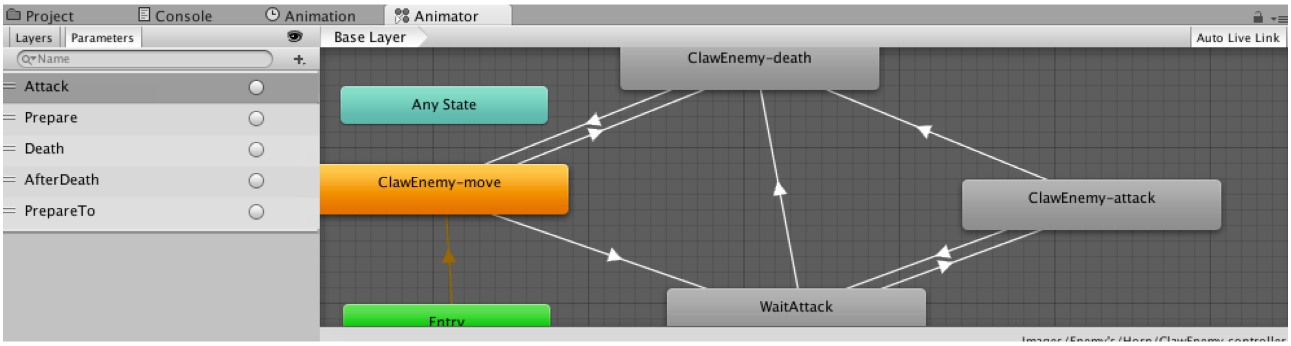
c) copy and paste this with your values

```
// Use this for initialization
      void Awake ()
      {
            text_poolmanager = GameObject.Find("Dmg_Text_Generator");
            text_poolman =
   text_poolmanager.GetComponent<Dmg_Text_PoolManager>();
      }

      public void AssignValues()
      {
            points = 10;
            price = 3;
            max_health = 20;
            speed = 1.25f;
            target = -3.0f; //3.4
            dmg = 5;
            dmg_taken = Data.heroDmg;
            delay_between_attack = 1.2f;
            crit_chance = Data.instance.crit_chance;
            crit_power = Data.instance.crit_power;
            CheckCurrHealth();
        }
        public void CheckCurrHealth()
        {
            if(current_healt == 0)
                current_healt = max_health;
        }

        void Start ()
        {
            AssignValues();
            dmg_taken = Data.heroDmg;
            if(dmg_taken == 0)
            {
                dmg_taken = 30;
            }
            //current_healt = max_health;

    transform.DOMoveX(target,time()).OnComplete(PrepareToAttack).SetEase
    (Ease.Linear);
        }
    }
```

don't forget to write on top of script using DG.Tweening;

d) connect all public variables (You can look on other enemy prefab to know what to connect)

e) create animator controller and he should look like it, don't forget about



Attack ○
Prepare ○
Death ○
AfterDeath ○
PrepareTo ○

Parameters, also u can look on exist enemy to know where parameters are using.

f) Create all animations and create events on: Attack - **DoDmg** - before las frame, **Prep** - last frame. Death animation - **Inactive** - last frame.

g) Attach animations in animator

h) create object dmg_text_pos and drag it onto enemy prefab and attach it in script.

i) create new object and call it “NewEnemySpawner”, add EnemyPoolManager script and connect prefab created above.

j) drag NewEnemySpawner onto EnemySpawner object

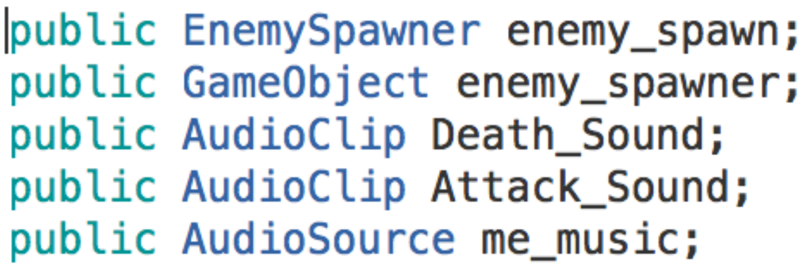
k) select Enemy Spawner and look on EnemySpawner (script) you should see Enemy1, Enemy2 and so on to Enemy6 arrays.

l) Increment size one of them (1 if your enemy weak.. and 6 if he is strong) and connect your spawner

How to add Boss

a) repeat all steps for **enemy** from a-j

b) in script add these as variables **public EnemySpawner enemy_spawn;**
public GameObject enemy_spawner;



```
public EnemySpawner enemy_spawn;
public GameObject enemy_spawner;
public AudioClip Death_Sound;
public AudioClip Attack_Sound;
public AudioSource me_music;
```

c) in **Awake** function add these
enemy_spawner = GameObject.Find("EnemySpawner");
enemy_spawn = enemy_spawner.GetComponent<EnemySpawner>();

d) add these function

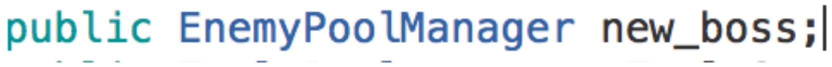
```
public void LaunchEnemySpawn ()
   {
         enemy_spawn.AfterBossLaunch(true);
   }
```

e) and add these function public override void Inactive ()

```
   {
         base.Inactive ();
         LaunchEnemySpawn
   }
```

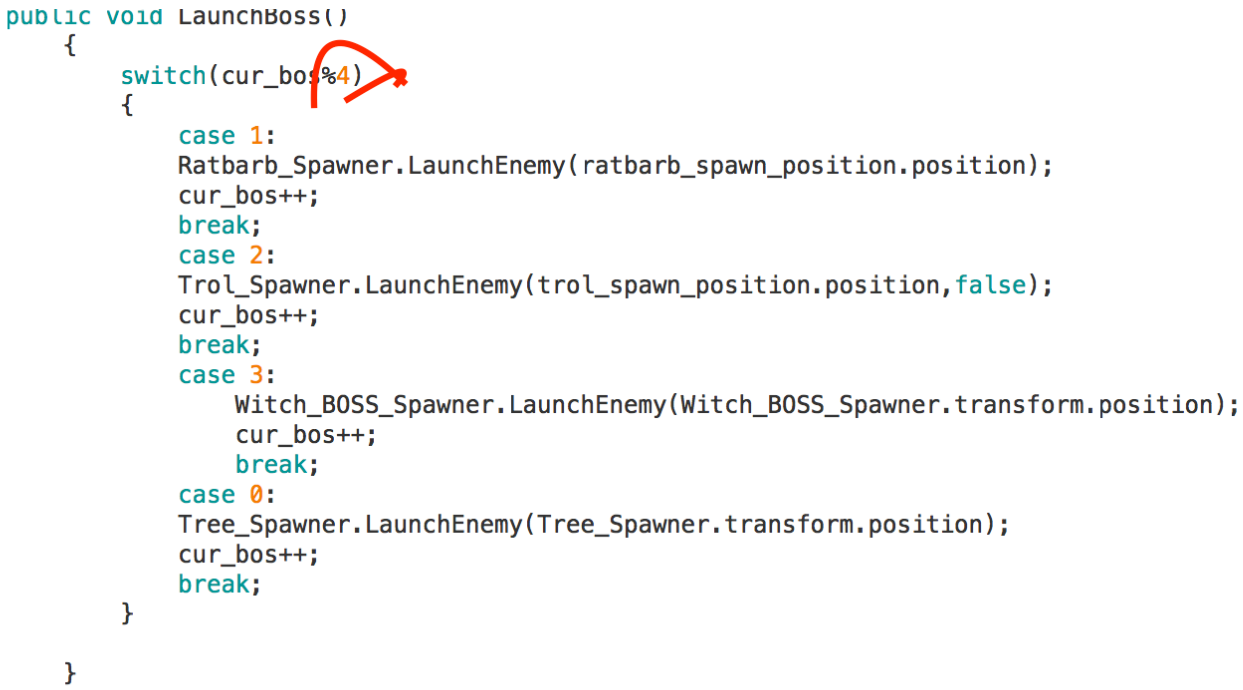
f) open EnemySpawner script

g) add new variable for new_boss pool manager and connect it in editor



```
public EnemyPoolManager new_boss;
```

h) in function
LaunchBoss increment number in switch



```
public void LaunchBoss()
    {
        switch(cur_bos%4)
        {
            case 1:
            Ratbarb_Spawner.LaunchEnemy(ratbarb_spawn_position.position);
            cur_bos++;
            break;
            case 2:
            Trol_Spawner.LaunchEnemy(trol_spawn_position.position,false);
            cur_bos++;
            break;
            case 3:
                Witch_BOSS_Spawner.LaunchEnemy(Witch_BOSS_Spawner.transform.position);
                cur_bos++;
                break;
            case 0:
            Tree_Spawner.LaunchEnemy(Tree_Spawner.transform.position);
            cur_bos++;
            break;
        }

    }
```

i) and add new case

```
case 4:
new_boss.LaunchEnemy(new_boss.transform.position);
cur_bos++;
break;
```