Club :

Vasilis Mylonas 2777

Andreas Theofilopoulos 2701

Write file.maz on field end press enter.

FPSCAMERA BUTTONS

Move :	**WASD**
JUMB:	**SPACE**
HITS:	**H**
COLLECT ITEM :	**F**
EXIT GAME :	**X**
WIN BATTON(FOR HIGHEST LEVEL CUBE):	**E**
MUSIC GAME START:	**P**
MUSIC 2 GAME START(AGAIN):	**P**
MUSIC GAME STOP:	**O**
MAKE TRANSPARENT CUBE (FOR FIND BLACK CUBES):	**DEL**
UNDO TRANSPARENT CUBE:	**INS**

SECOND CAMERA BUTTONS

CHANGE CAMERA VIEW :	**U**
MOVE CAMERA RIGHT:	**RIGHT ARROW**
MOVE CAMERA LEFT:	**LEFT ARROW**
MOVE CAMERA UP:	**UP ARROW**
MOVE CAMERA DOWN:	**DOWN ARROW**
MOVE CAMERA IN:	**PAGE UP**
MOVE CAMERA OUT:	**PAGE DOWN**
ROTATE LEFT CAMERA :	**R**

ROTATE RIGHT CAMERA:	**T**
GO BACK TO FPS VIEW:	**K**

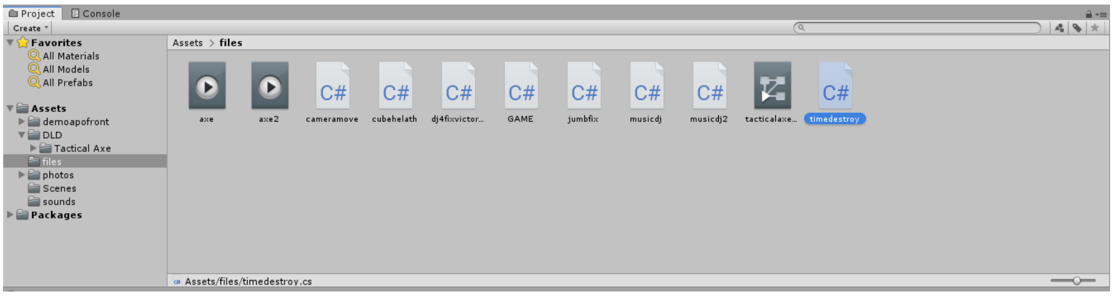
CODE ANALYSIS AND GAME CREATION

First let's mention that in Asserts there are folders

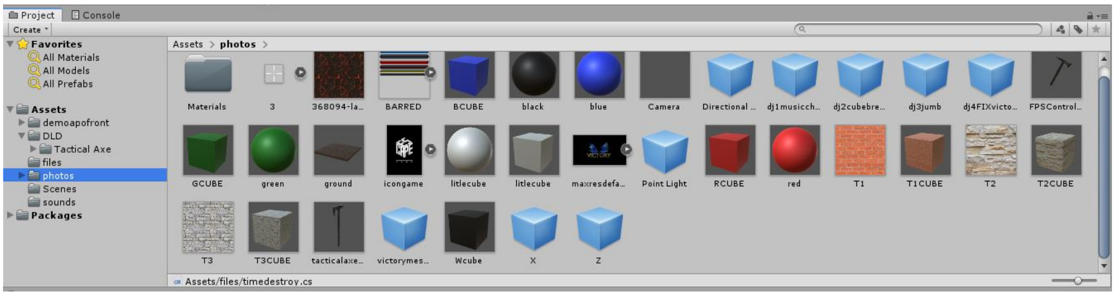
"demoapofront": where it contains the files with the tutorial fpscamera where we used.

"DLD" :this is where we got the hammer we use.

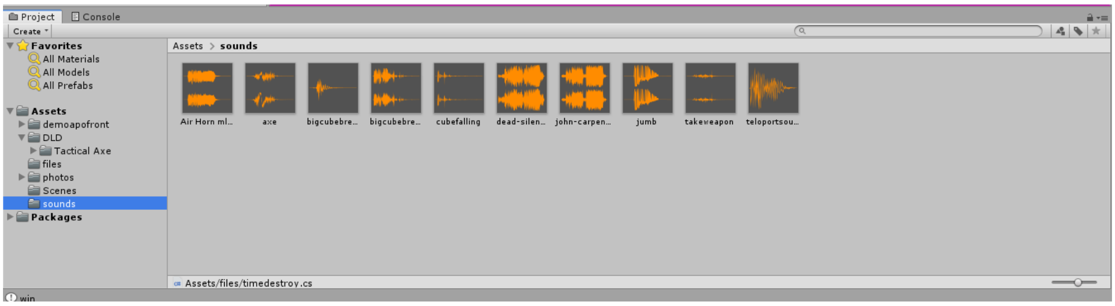
"files" :where here we will find all the scripts where we made as well as the animation of the ax in fact we have made 2 animations



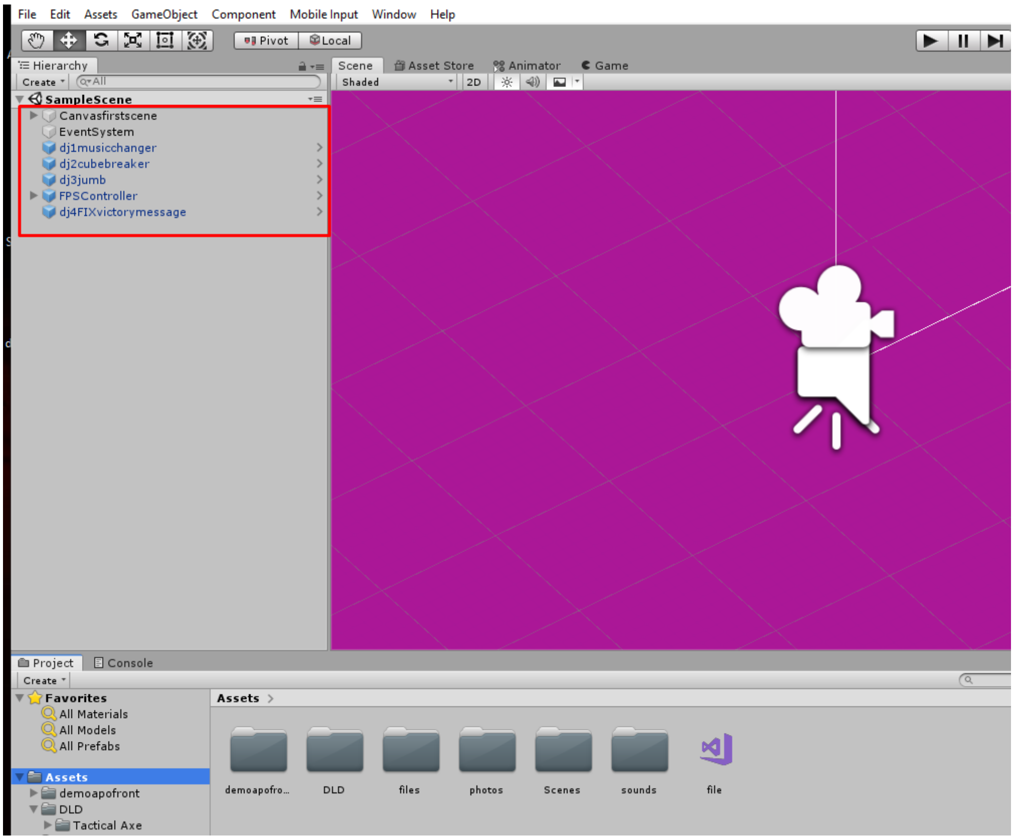
"photos":here are all the prefabs that the program uses, everything it needs and we give as input to the scripts in terms of Gameobjects



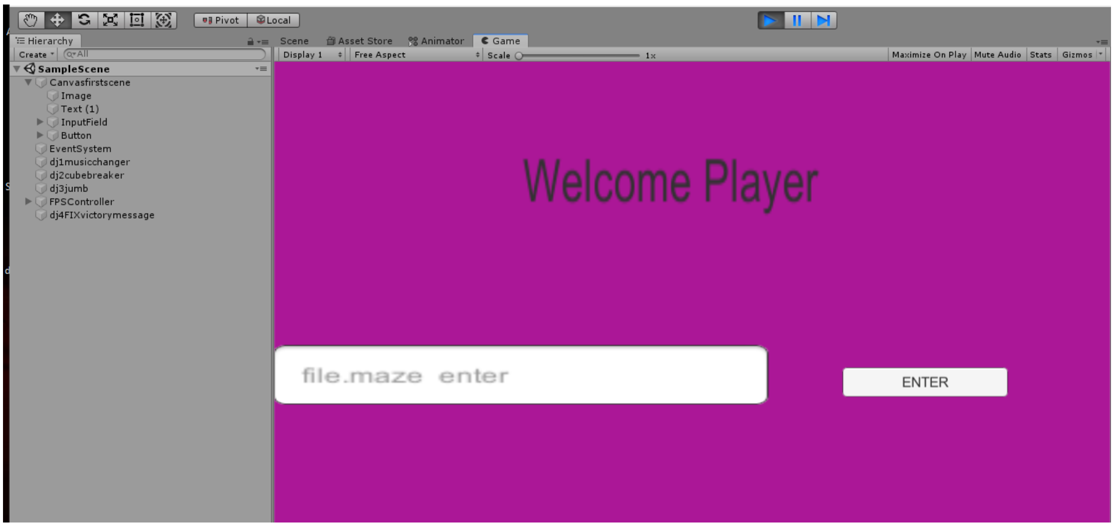
"sounds":finally here we will find all the sounds we used for the sound effects.



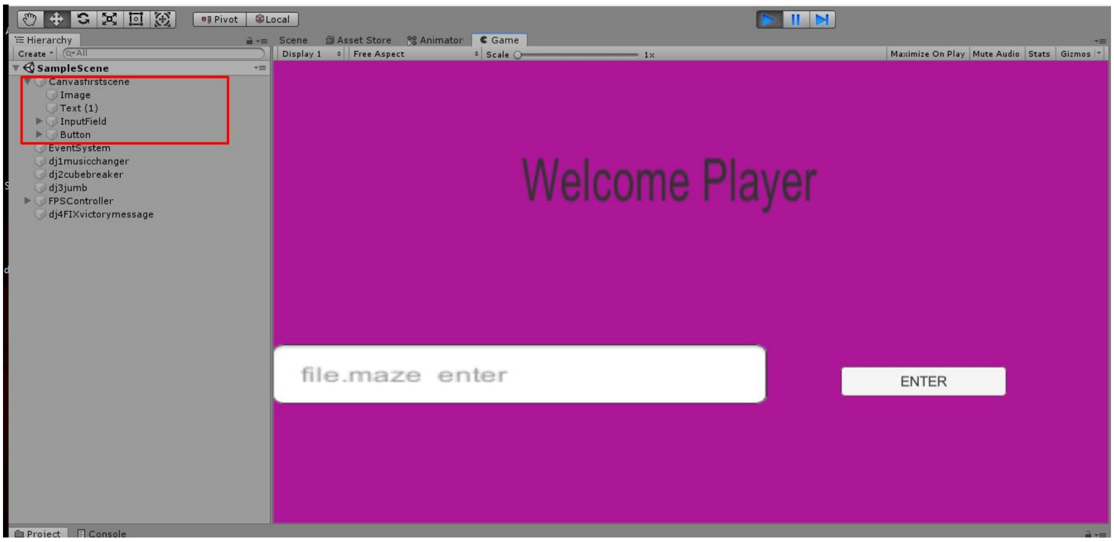
Opening the Project in Unity On the top left as the image shows we have the Gameobjects: "Canvasfirstscene" "dj1" "dj2" "dj3" "dj4" "FPSController"



When we start the game the first thing we see is the image below where we have to write the name of the file.

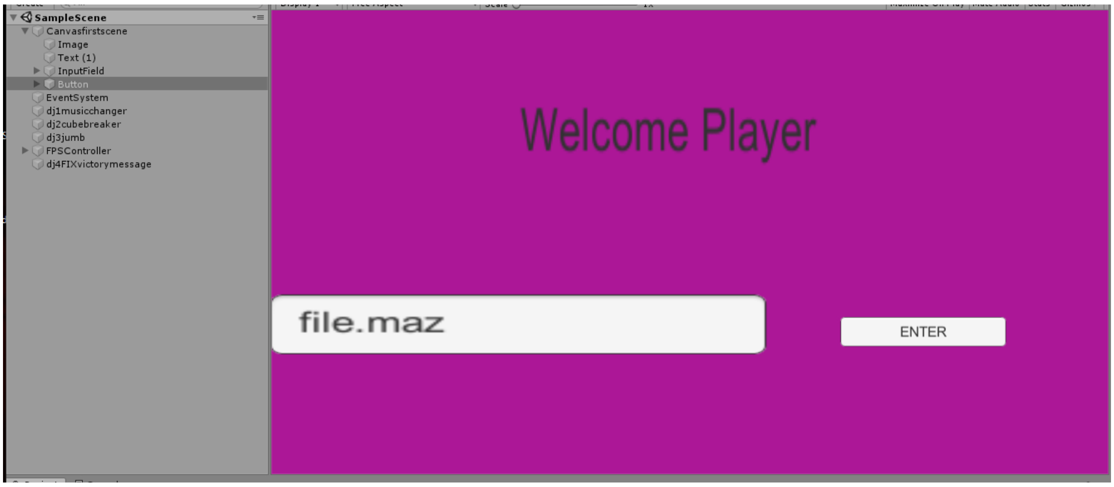


You implement all this through Canvasfirstscene



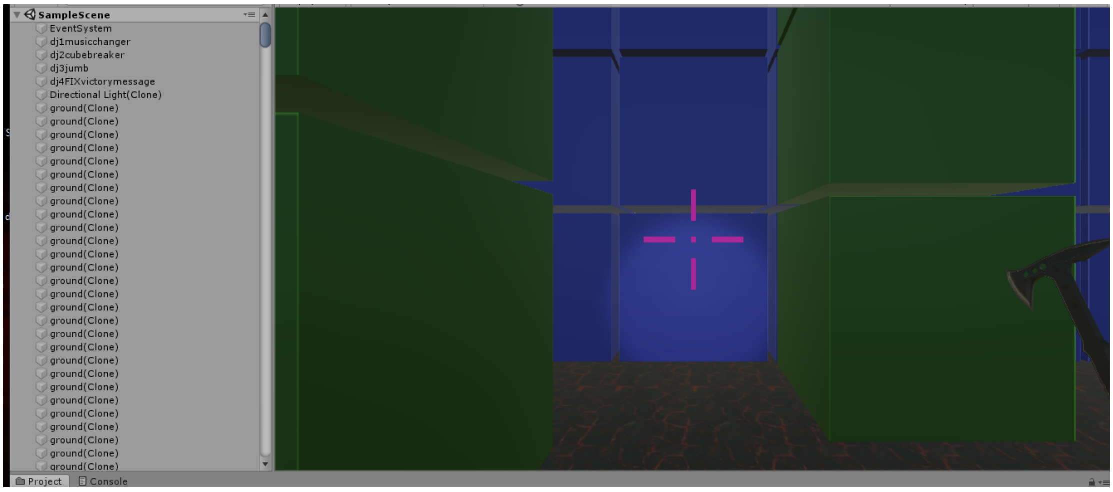
An image that has the pink color a Text that says welcome Player an Inputfield that when we press enter takes us to some point in the code of the basic script that we will see below. The button exists because we liked it as a design, we have not added any function to it.

When we type file.maz and press enter from this state:



file.maz

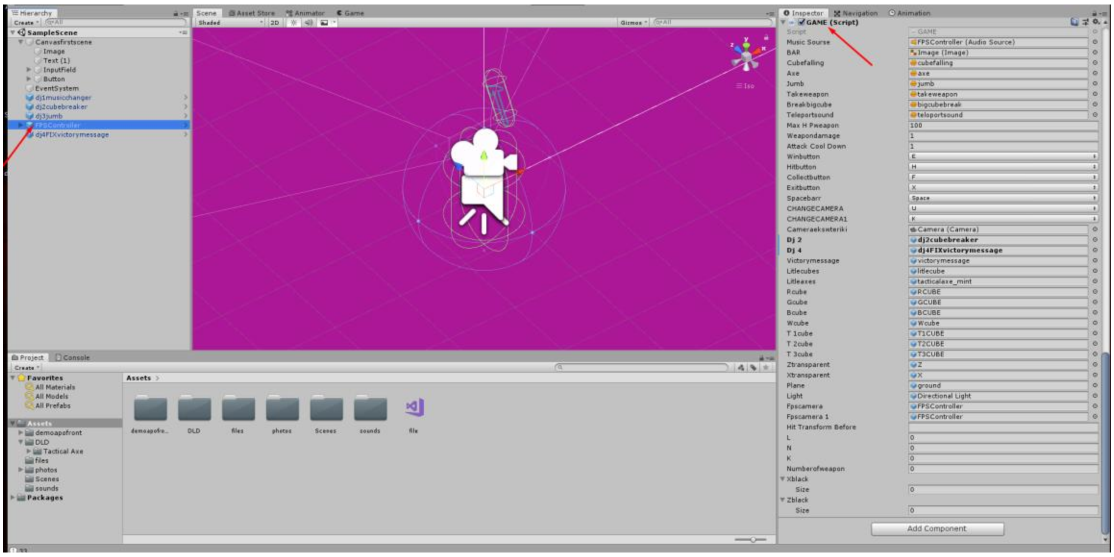
We will now be in the Main game and our screen will look something like this:



Now we notice that 'Canvasfirstscene' is missing from the GameObjects on the left.

But before we move on to the main game, let's take a step back.

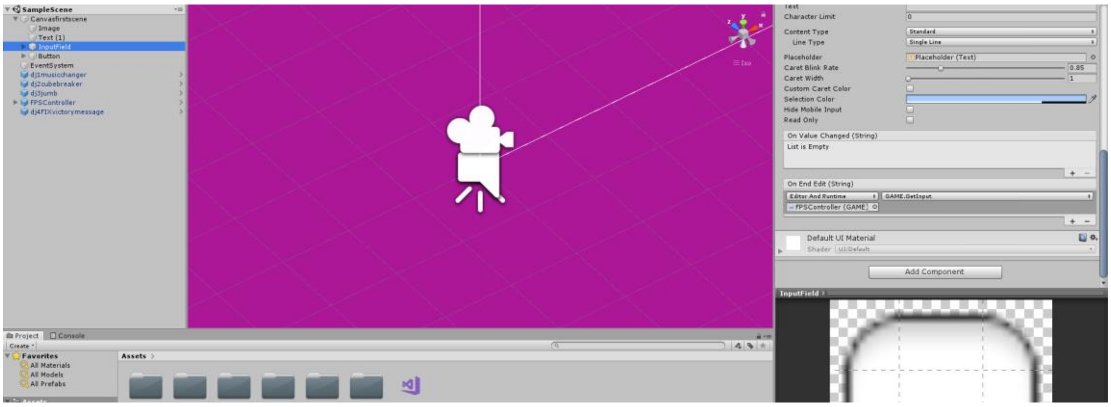
FPSCONTROLLER has the Game script built in which contains the largest piece of code we made.



GAME (Script)

Script	GAME
Music Sourse	FPSController (Audio Source)
BAR	Image (Image)
Cubefalling	cubefalling
Axe	axe
Jumb	jumb
Takeweapon	takeweapon
Breakbigcube	bigcubebreak
Teleportsound	teloportsound
Max H Pweapon	100
Weapondamage	1
Attack Cool Down	1
Winbutton	E
Hitbutton	H
Collectbutton	F
Exitbutton	X
Spacebarr	Space
CHANGECAMERA	U
CHANGECAMERA1	K
Cameraekswteriki	Camera (Camera)
Dj 2	dj2cubebreaker
Dj 4	dj4FIXvictorymessage
Victorymessage	victorymessage
Litlecubes	litlecube
Litleaxes	tacticalaxe_mint
Rcube	RCUBE
Gcube	GCUBE
Bcube	BCUBE
Wcube	Wcube
T 1cube	T1CUBE
T 2cube	T2CUBE
T 3cube	T3CUBE
Ztransparent	Z
Xtransparent	X
Plane	ground
Light	Directional Light
Fpscamera	FPSController
Fpscamera 1	FPSController
Hit Transform Before	
L	0
N	0
K	0
Numberofweapon	0
Xblack	
Size	0
Zblack	
Size	0

We have placed the FPSController as shown in the image below



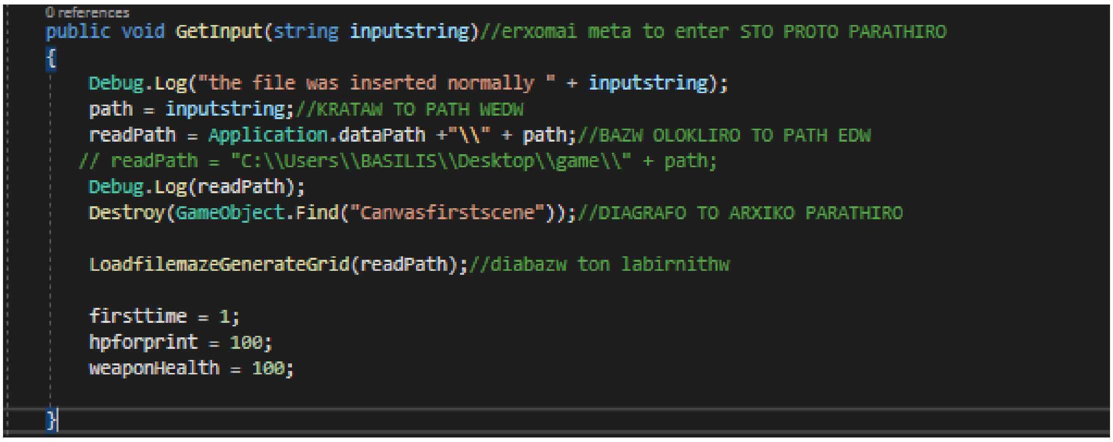
Text	
Character Limit	0
Content Type	Standard
Line Type	Single Line
Placeholder	Placeholder (Text)
Caret Blink Rate	0.85
Caret Width	1
Custom Caret Color	□
Selection Color	
Hide Mobile Input	□
Read Only	□

On Value Changed (String)
List is Empty

On End Edit (String)
Editor And Runtime | GAME.GetInput
FPSController (GAME)

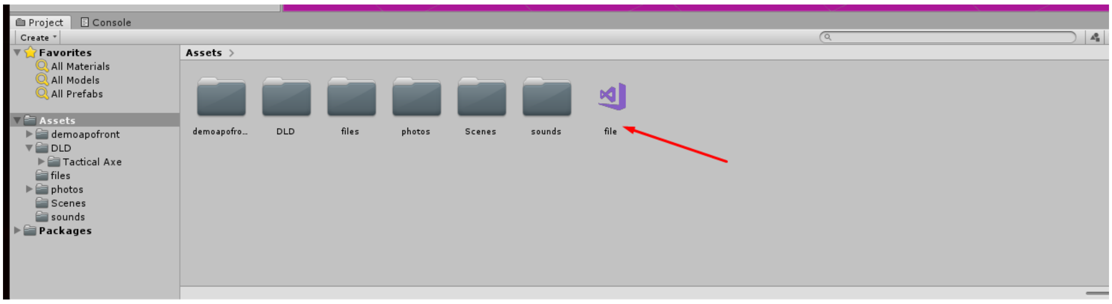
Default UI Material
Shader UI/Default

When we press enter after entering the file.maz this information is sent to the GetInput function that exists in the Game script Inside the fpscontroller.



```
0 references
public void GetInput(string inputstring)//erxomai meta to enter STO PROTO PARATHIRO
{
    Debug.Log("the file was inserted normally " + inputstring);
    path = inputstring;//KRATAW TO PATH WEDW
    readPath = Application.dataPath +"\\" + path;//BAZW OLOKLIRO TO PATH EDW
   // readPath = "C:\\Users\\BASILIS\\Desktop\\game\\" + path;
    Debug.Log(readPath);
    Destroy(GameObject.Find("Canvasfirstscene"));//DIAGRAFO TO ARXIKO PARATHIRO

    LoadfilemazeGenerateGrid(readPath);//diabazw ton labirnithw

    firsttime = 1;
    hpforprint = 100;
    weaponHealth = 100;

}
```

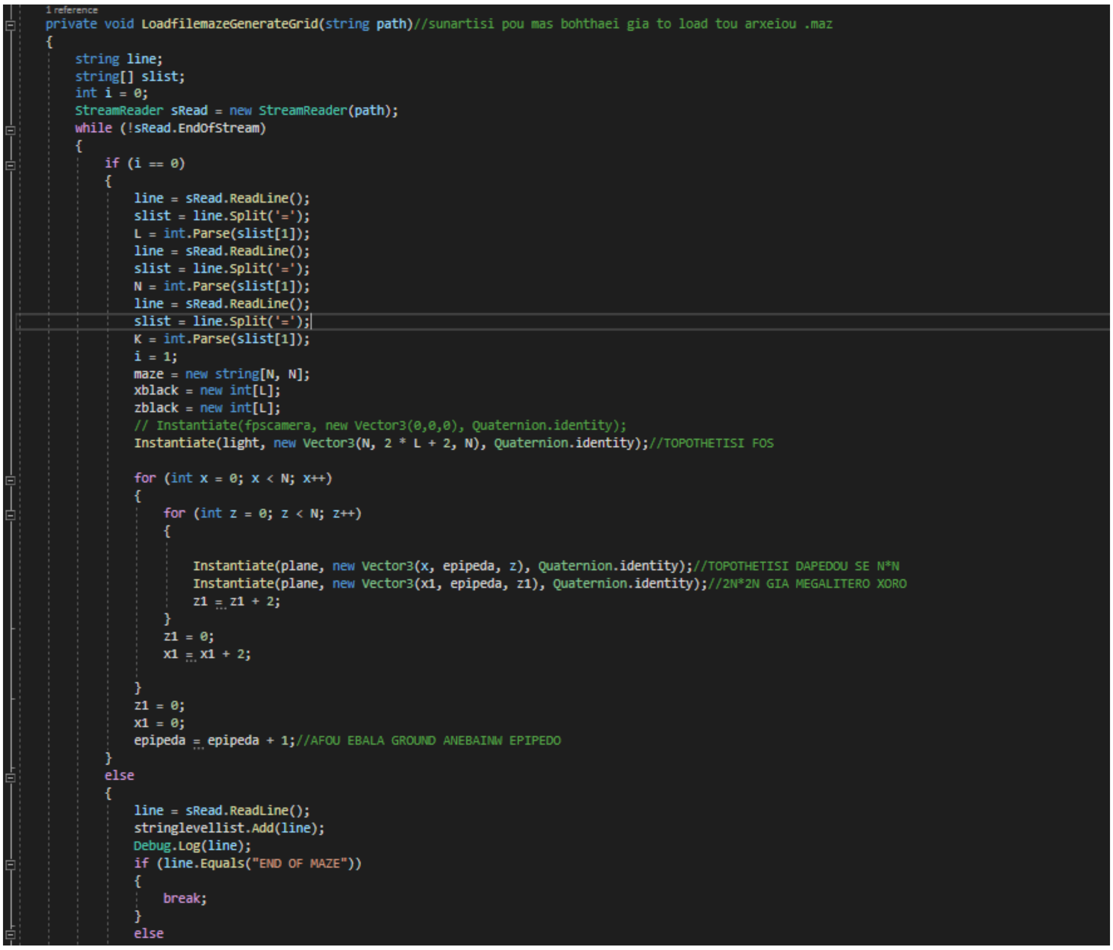
Typically we keep the Inputstring in the Path, and in the read path we create all the Path that is needed to be able to find the file file.maz here we add that the file must be present in the asserts not in some folder outside as you can see below



GetInput destroys the canvas that was our original file input image and sends the readPath to be read to LoadfilemazeGenerateGrid. As well as initializing some parameters that we will see later that we use.

LoadfilemazeGenerateGrid in turn opens the file for reading and

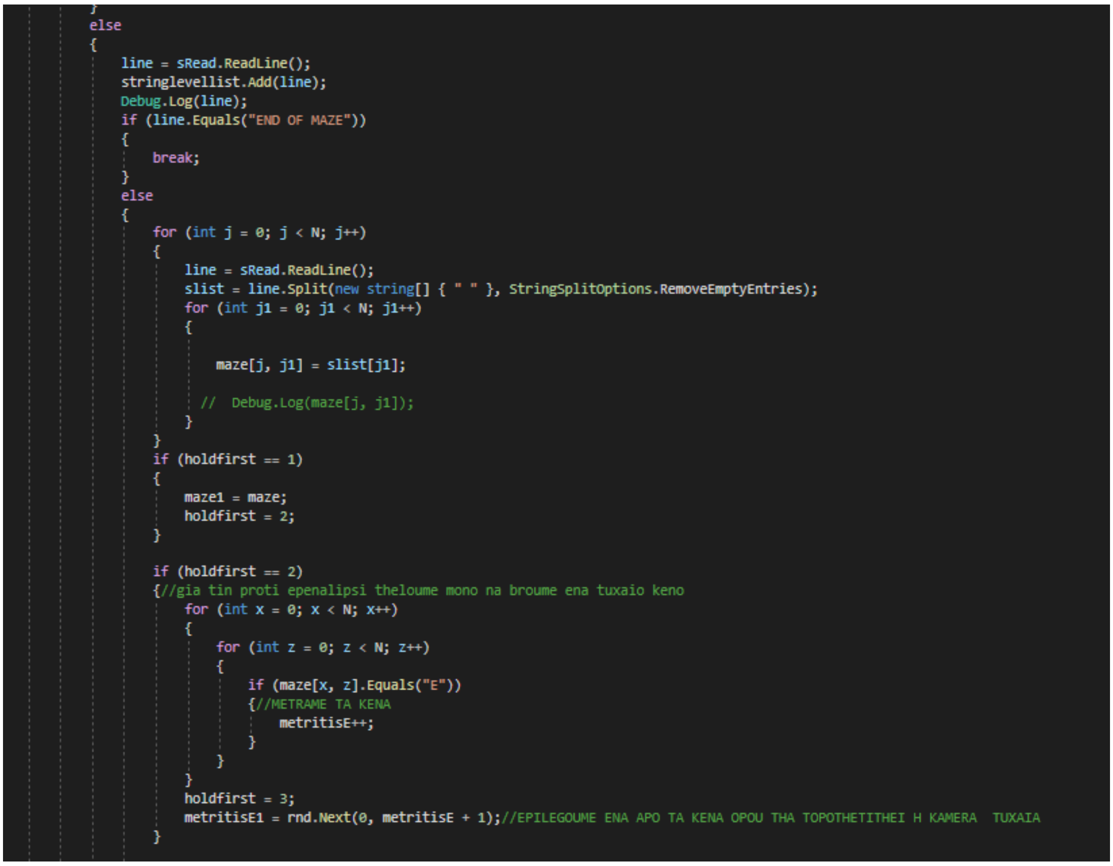
it stores all the necessary elements to be able to create the maze we want.



```
1 reference
private void LoadfilemazeGenerateGrid(string path)//sunartisi pou mas bohthaei gia to load tou arxeiou .maz
{
    string line;
    string[] slist;
    int i = 0;
    StreamReader sRead = new StreamReader(path);
    while (!sRead.EndOfStream)
    {
        if (i == 0)
        {
            line = sRead.ReadLine();
            slist = line.Split('=');
            L = int.Parse(slist[1]);
            line = sRead.ReadLine();
            slist = line.Split('=');
            N = int.Parse(slist[1]);
            line = sRead.ReadLine();
            slist = line.Split('=');
            K = int.Parse(slist[1]);
            i = 1;
            maze = new string[N, N];
            xblack = new int[L];
            zblack = new int[L];
            // Instantiate(fpscamera, new Vector3(0,0,0), Quaternion.identity);
            Instantiate(light, new Vector3(N, 2 * L + 2, N), Quaternion.identity);//TOPOTHETISI FOS

            for (int x = 0; x < N; x++)
            {
                for (int z = 0; z < N; z++)
                {

                    Instantiate(plane, new Vector3(x, epipeda, z), Quaternion.identity);//TOPOTHETISI DAPEDOU SE N*N
                    Instantiate(plane, new Vector3(x1, epipeda, z1), Quaternion.identity);//2N*2N GIA MEGALITERO XORO
                    z1 = z1 + 2;
                }
                z1 = 0;
                x1 = x1 + 2;

            }
            z1 = 0;
            x1 = 0;
            epipeda = epipeda + 1;//AFOU EBALA GROUND ANEBAINW EPIPEDO
        }
        else
        {
            line = sRead.ReadLine();
            stringlevellist.Add(line);
            Debug.Log(line);
            if (line.Equals("END OF MAZE"))
            {
                break;
            }
            else
```

We read line by line the first 3 lines to get L,N,K And store them in corresponding variables and from there on we discard the first Helen of if i==0 since now i=1 and after the first iteration it will enter forever in the else the first line will be the level eg level1 .

Still as the pronunciation tells us we place 1 or more lights we place a light in the center and at a height of 2 above the maximum height of the maze. Here we have to say that the cubes are 1.9x1.9x1.9 in size, we leave a small space between each cube in this way to make them separable. So typically if you have NxN now to have comfort you have to build a plot of 2Nx2N. So the double for does exactly that it implements a floor of planes where the plane has a size of 2 x 0.1 x 2 . but because we want 2Nx2N we use x1,z1 to make a floor for 2NX2N as well. After entering our floor +1 levels to go from 0 to 1 this will help us later in placing cubes.



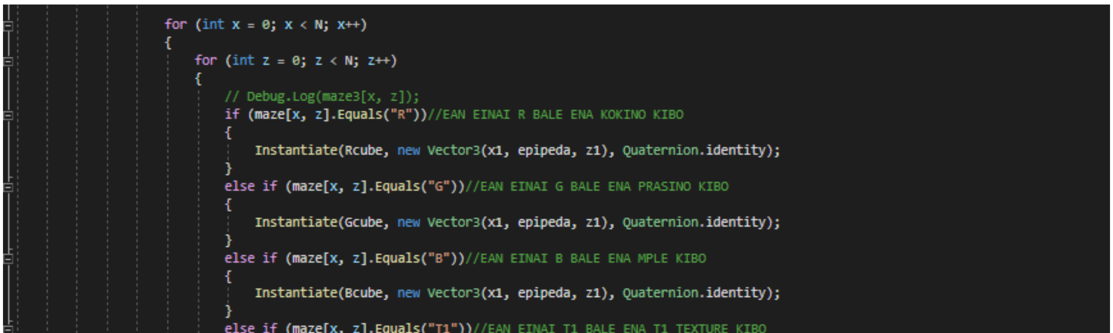
```
        }
        else
        {
            line = sRead.ReadLine();
            stringlevellist.Add(line);
            Debug.Log(line);
            if (line.Equals("END OF MAZE"))
            {
                break;
            }
            else
            {
                for (int j = 0; j < N; j++)
                {
                    line = sRead.ReadLine();
                    slist = line.Split(new string[] { " " }, StringSplitOptions.RemoveEmptyEntries);
                    for (int j1 = 0; j1 < N; j1++)
                    {

                        maze[j, j1] = slist[j1];

                      //  Debug.Log(maze[j, j1]);
                    }
                }
                if (holdfirst == 1)
                {
                    maze1 = maze;
                    holdfirst = 2;
                }

                if (holdfirst == 2)
                {//gia tin proti epenalipsi theloume mono na broume ena tuxaio keno
                    for (int x = 0; x < N; x++)
                    {
                        for (int z = 0; z < N; z++)
                        {
                            if (maze[x, z].Equals("E"))
                            {//METRAME TA KENA
                                metritisE++;
                            }
                        }
                    }
                    holdfirst = 3;
                    metritisE1 = rnd.Next(0, metritisE + 1);//EPILEGOUME ENA APO TA KENA OPOU THA TOPOTHETITHEI H KAMERA  TUXAIA
                }
```

In else we read once more to get the level of something we don't need.

If we are at the end of the maze, i.e. we have found the end of maze, then we must break the while

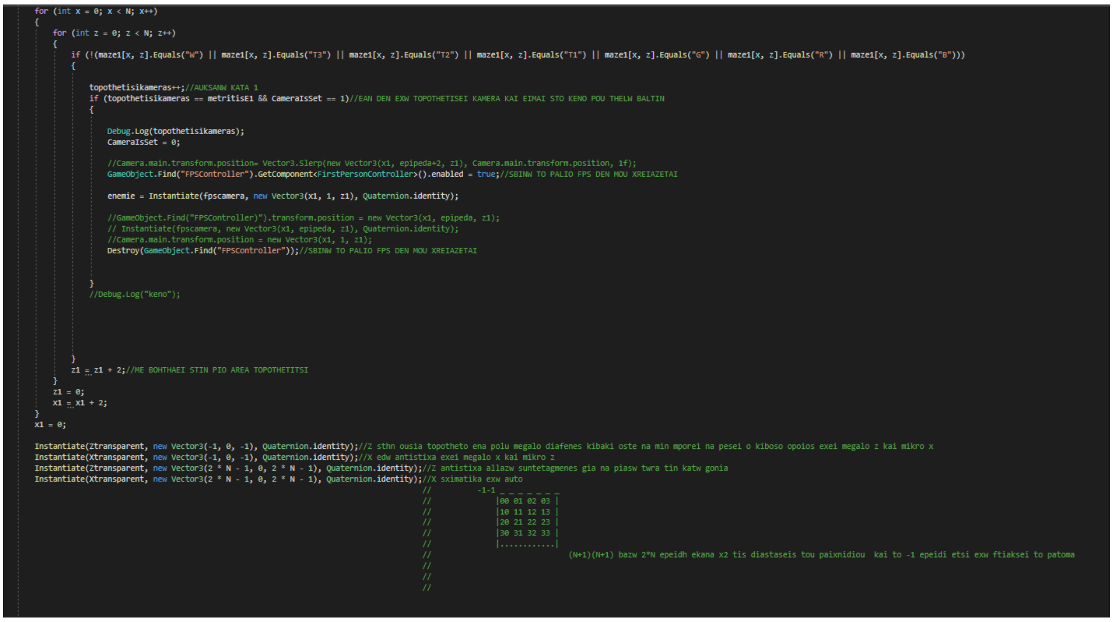
Now the next step is to read each maze level we have from the file . The first time in the first iteration we want to save Maze1 for later when we place the camera we will refer to it later.

The double for that follows has to do with the measurement of the gaps in each Level, practically we are only interested in this for the first time. We measure all the gaps and store them in metrisiE and later in metrisiE1 we choose one of them through rnd later we will see how I place the camera based on metrisiE1.



```
                    for (int x = 0; x < N; x++)
                    {
                        for (int z = 0; z < N; z++)
                        {
                            // Debug.Log(maze3[x, z]);
                            if (maze[x, z].Equals("R"))//EAN EINAI R BALE ENA KOKINO KIBO
                            {
                                Instantiate(Rcube, new Vector3(x1, epipeda, z1), Quaternion.identity);
                            }
                            else if (maze[x, z].Equals("G"))//EAN EINAI G BALE ENA PRASINO KIBO
                            {
                                Instantiate(Gcube, new Vector3(x1, epipeda, z1), Quaternion.identity);
                            }
                            else if (maze[x, z].Equals("B"))//EAN EINAI B BALE ENA MPLE KIBO
                            {
                                Instantiate(Bcube, new Vector3(x1, epipeda, z1), Quaternion.identity);
                            }
                            else if (maze[x, z].Equals("T1"))//EAN EINAI T1 BALE ENA T1 TEXTURE KIBO
```

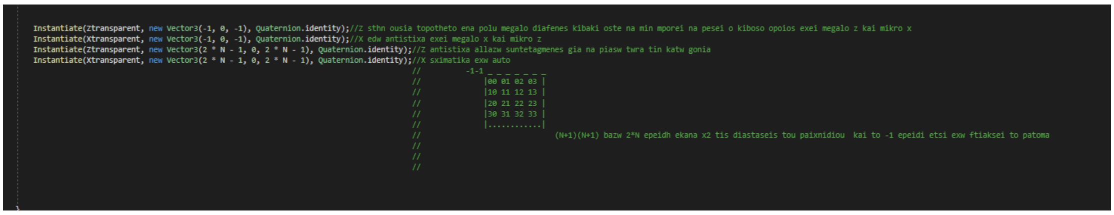
The next double for that follows is about placing cubes in the appropriate place if it is R I will put Rcube "red cube" . Here I have x1, z1 because we mentioned above that the dimensions in the figures are not 1x1x1. In the case that our file will have W (teleport case) we keep the coordinates of each wcube to use them later in the teleport.



```
for (int x = 0; x < N; x++)
{
    for (int z = 0; z < N; z++)
    {
        if (!(maze1[x, z].Equals("W") || maze1[x, z].Equals("T3") || maze1[x, z].Equals("T2") || maze1[x, z].Equals("T1") || maze1[x, z].Equals("G") || maze1[x, z].Equals("R") || maze1[x, z].Equals("B")))
        {

            topothetisikameras++;//AUKSANW KATA 1
            if (topothetisikameras == metritisE1 && CameraIsSet == 1)//EAN DEN EXW TOPOTHETISEI KAMERA KAI EIMAI STO KENO POU THELW BALTIN
            {

                Debug.Log(topothetisikameras);
                CameraIsSet = 0;

                //Camera.main.transform.position= Vector3.Slerp(new Vector3(x1, epipeda+2, z1), Camera.main.transform.position, 1f);
                GameObject.Find("FPSController").GetComponent<FirstPersonController>().enabled = true;//SBINW TO PALIO FPS DEN MOU XREIAZETAI

                enemie = Instantiate(fpscamera, new Vector3(x1, 1, z1), Quaternion.identity);

                //GameObject.Find("FPSController)").transform.position = new Vector3(x1, epipeda, z1);
                // Instantiate(fpscamera, new Vector3(x1, epipeda, z1), Quaternion.identity);
                //Camera.main.transform.position = new Vector3(x1, 1, z1);
                Destroy(GameObject.Find("FPSController"));//SBINW TO PALIO FPS DEN MOU XREIAZETAI


            }
            //Debug.Log("keno");





        }
        z1 = z1 + 2;//ME BOHTHAEI STIN PIO AREA TOPOTHETITSI
    }
    z1 = 0;
    x1 = x1 + 2;
}
x1 = 0;

Instantiate(Ztransparent, new Vector3(-1, 0, -1), Quaternion.identity);//Z sthn ousia topotheto ena polu megalo diafenes kibaki oste na min mporei na pesei o kiboso opoios exei megalo z kai mikro x
Instantiate(Xtransparent, new Vector3(-1, 0, -1), Quaternion.identity);//X edw antistixa exei megalo x kai mikro z
Instantiate(Ztransparent, new Vector3(2 * N - 1, 0, 2 * N - 1), Quaternion.identity);//Z antistixa allazw suntetagmenes gia na piasw twra tin katw gonia
Instantiate(Xtransparent, new Vector3(2 * N - 1, 0, 2 * N - 1), Quaternion.identity);//X sximatika exw auto
                                                                                    //          -1-1 _ _ _ _ _ _ _
                                                                                    //              |00 01 02 03 |
                                                                                    //              |10 11 12 13 |
                                                                                    //              |20 21 22 23 |
                                                                                    //              |30 31 32 33 |
                                                                                    //              |...........|
                                                                                    //                               (N+1)(N+1) bazw 2*N epeidh ekana x2 tis diastaseis tou paixnidiou  kai to -1 epeidi etsi exw ftiaksei to patoma
                                                                                    //
                                                                                    //
                                                                                    //
```

In the photo above we see how the camera is placed. There is again a double for in which we run the maze1 table we mentioned above and check to see if we ever have a gap. If it is not one of the cube types we have then it is empty. We count the gaps and when the topothetisikameras variable becomes as much as the random number of gaps stored in the metrisiE1 variable then I will enter I will place my camera I will delete the old one because it does not allow us to move the camera, in fact we tried some solutions to change the camera position and the camera every time it was placed in the space fell under the floor and disappeared into the void of Unity.

Finally, to prevent the camera from falling from the edges, I place invisible brackets with dimensions X: 1000 x 1000 x 1 Z: 1 x 1000 x 1000, these are typically placed in the 2 corners -1,0,-1 and in the bottom corner 2N-1,0 ,2N-1 as you describe in the comments

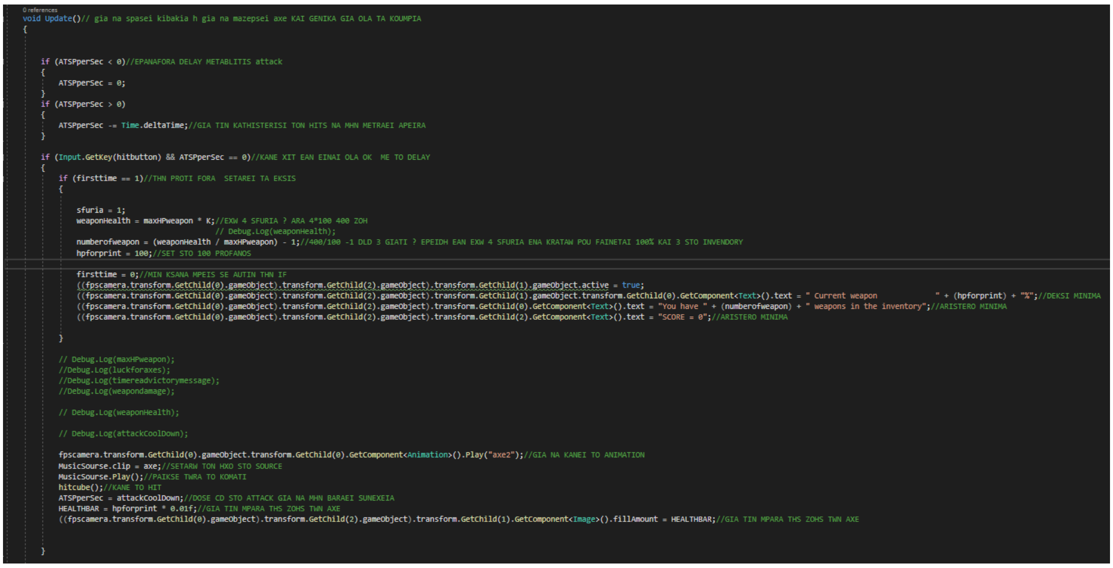


```
        Instantiate(Ztransparent, new Vector3(-1, 0, -1), Quaternion.identity);//Z sthn ousia topotheto ena polu megalo diafenes kibaki oste na min mporei na pesei o kiboso opoios exei megalo z kai mikro x
        Instantiate(Xtransparent, new Vector3(-1, 0, -1), Quaternion.identity);//X edw antistixa exei megalo x kai mikro z
        Instantiate(Ztransparent, new Vector3(2 * N - 1, 0, 2 * N - 1), Quaternion.identity);//Z antistixa allazw suntetagmenes gia na piasw twra tin katw gonia
        Instantiate(Xtransparent, new Vector3(2 * N - 1, 0, 2 * N - 1), Quaternion.identity);//X sximatika exw auto
                                                                                             //          -1-1 _ _ _ _ _ _ _ _
                                                                                             //              |00 01 02 03 |
                                                                                             //              |10 11 12 13 |
                                                                                             //              |20 21 22 23 |
                                                                                             //              |30 31 32 33 |
                                                                                             //              |...........|
                                                                                             //                          (N+1)(N+1) bazw 2*N epeidh ekana x2 tis diastaseis tou paixnidiou  kai to -1 epeidi etsi exw ftiaksei to patoma
                                                                                             //
                                                                                             //
                                                                                             //


    }
```

Now our game has been implemented and we have the result we quoted above after enter.

From now on we are dealing with the keys that the player presses below we will analyze each function that is done for each button

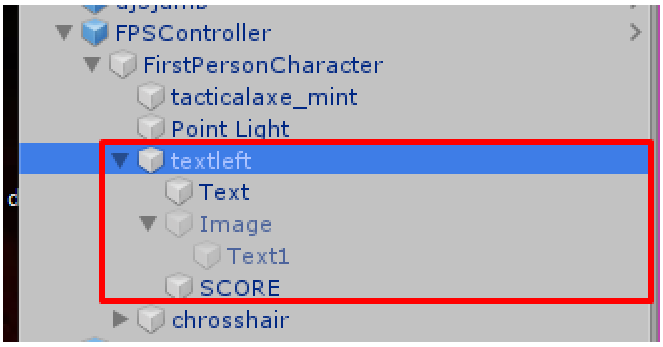
What we will talk about below is in the Update.



```
    0 references
    void Update()// gia na spasei kibakia h gia na mazepsei axe KAI GENIKA GIA OLA TA KOUMPIA
    {


        if (ATSPperSec < 0)//EPANAFORA DELAY METABLITIS attack
        {
            ATSPperSec = 0;
        }
        if (ATSPperSec > 0)
        {
            ATSPperSec -= Time.deltaTime;//GIA TIN KATHISTERISI TON HITS NA MHN METRAEI APEIRA
        }

        if (Input.GetKey(hitbutton) && ATSPperSec == 0)//KANE XIT EAN EINAI OLA OK  ME TO DELAY
        {
            if (firsttime == 1)//THN PROTI FORA  SETAREI TA EKSIS
            {

                sfuria = 1;
                weaponHealth = maxHPweapon * K;//EXW 4 SFURIA ? ARA 4*100 400 ZOH
                                               // Debug.Log(weaponHealth);
                numberofweapon = (weaponHealth / maxHPweapon) - 1;//400/100 -1 DLD 3 GIATI ? EPEIDH EAN EXW 4 SFURIA ENA KRATAW POU FAINETAI 100% KAI 3 STO INVENDORY
                hpforprint = 100;//SET STO 100 PROFANOS

                firsttime = 0;//MIN KSANA MPEIS SE AUTIN THN IF
                ((fpscamera.transform.GetChild(0).gameObject).transform.GetChild(2).gameObject).transform.GetChild(1).gameObject.active = true;
                ((fpscamera.transform.GetChild(0).gameObject).transform.GetChild(2).gameObject).transform.GetChild(1).gameObject.transform.GetChild(0).GetComponent<Text>().text = " Current weapon            " + (hpforprint) + "%";//DEKSI MINIMA
                ((fpscamera.transform.GetChild(0).gameObject).transform.GetChild(2).gameObject).transform.GetChild(0).GetComponent<Text>().text = "You have " + (numberofweapon) + " weapons in the inventory";//ARISTERO MINIMA
                ((fpscamera.transform.GetChild(0).gameObject).transform.GetChild(2).gameObject).transform.GetChild(2).GetComponent<Text>().text = "SCORE = 0";//ARISTERO MINIMA

            }

            // Debug.Log(maxHPweapon);
            //Debug.Log(luckforaxes);
            //Debug.Log(timereadvictorymessage);
            //Debug.Log(weapondamage);

            // Debug.Log(weaponHealth);

            // Debug.Log(attackCoolDown);

            fpscamera.transform.GetChild(0).gameObject.transform.GetChild(0).GetComponent<Animation>().Play("axe2");//GIA NA KANEI TO ANIMATION
            MusicSourse.clip = axe;//SETARW TON HXO STO SOURCE
            MusicSourse.Play();//PAIKSE TWRA TO KOMATI
            hitcube();//KANE TO HIT
            ATSPperSec = attackCoolDown;//DOSE CD STO ATTACK GIA NA MHN BARAEI SUNEXEIA
            HEALTHBAR = hpforprint * 0.01f;//GIA TIN MPARA THS ZOHS TWN AXE
            ((fpscamera.transform.GetChild(0).gameObject).transform.GetChild(2).gameObject).transform.GetChild(1).GetComponent<Image>().fillAmount = HEALTHBAR;//GIA TIN MPARA THS ZOHS TWN AXE


        }
```

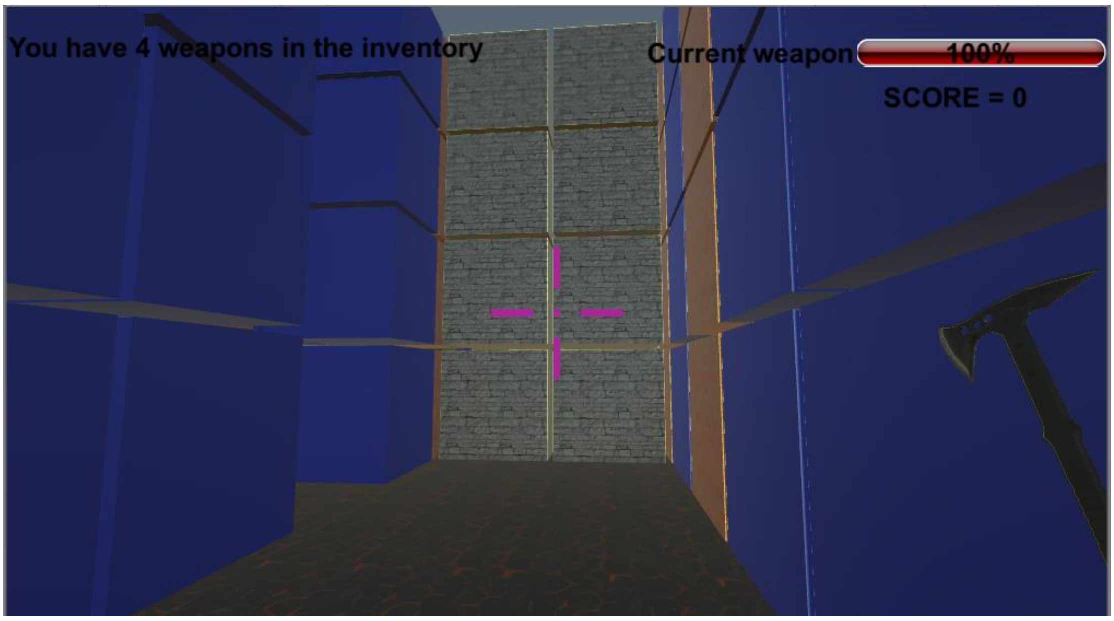
ATSPperSec is a variable that will help us delay the hits when we press H Unity perceives many hits it must perceive 1 every second for the game to have substance. At the beginning it is 0 so that the first time it does a direct Hit when H is pressed and immediately after ATSPperSec it becomes = attackcooldown which is 1 sec so that as time passes it reduces it by time.deltatime as shown in the second if. So when the H And we don't have to wait for a cooldown the first time we press h, the Interface with the hammers' life should be configured. The variables weaponhelath, numberofweapon, hpforprint, help us to calculate the life of the hammers, the amount of hammers we have as and print them.

The camera given to us has been enhanced as shown below



FPSController
FirstPersonCharacter
tacticalaxe_mint
Point Light
textleft
Text
Image
Text1
SCORE
chrosshair

Whenever depending on each text we tweak some data and print in the 2 corners. The image we see wide is deactivated and you activate it later because the life bar of the weapon was displayed on the home screen. The result shortly after the first hit is this

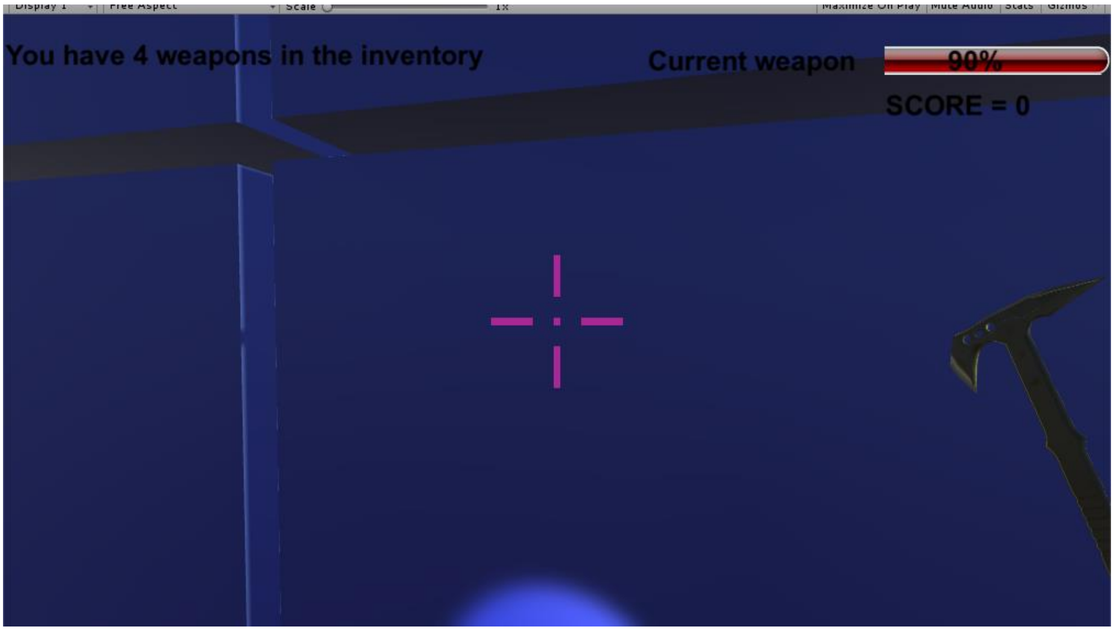


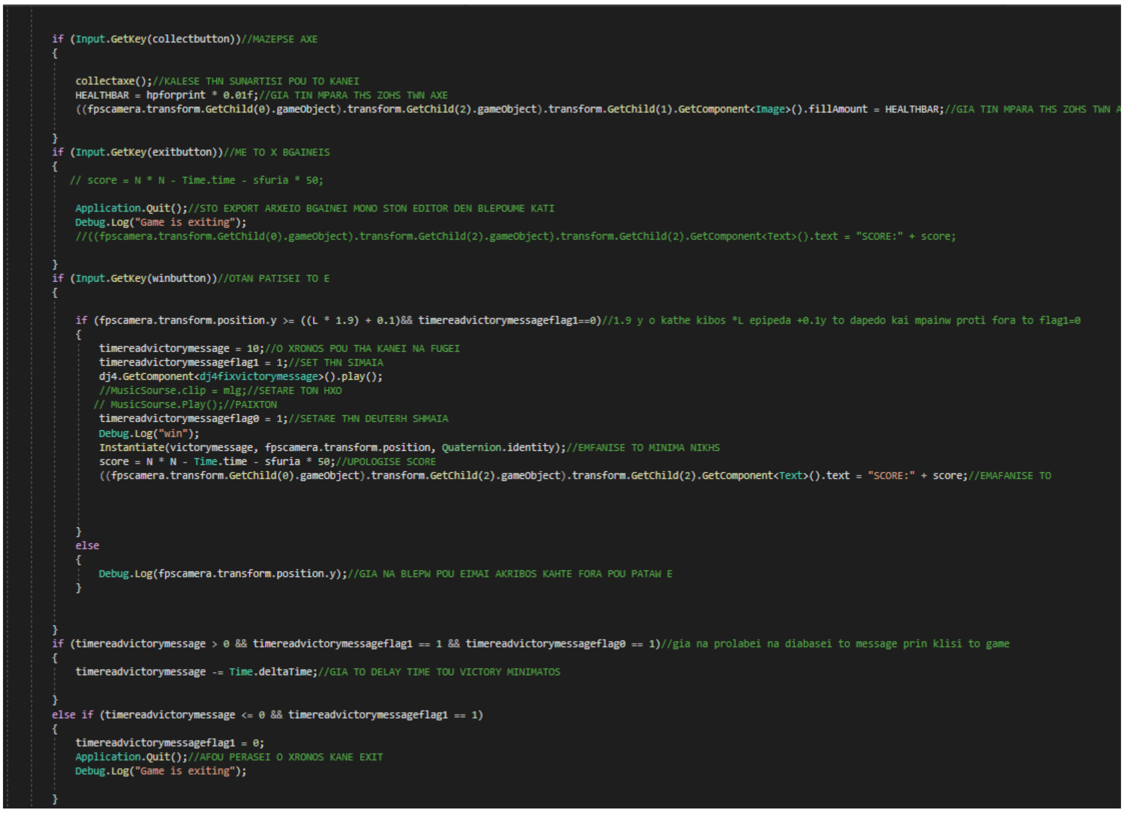
You have 4 weapons in the inventory

Current weapon 100%

SCORE = 0

When the hit is made we call the animation of the hammer whenever the movement is made, then we record the sound of the hammer and play it through Musicsource. Then we call hit cube to see if we hit a cube, we will see what it does next. When we return from it, as we said above, set the cooldown so that the system does not catch many H together. The healthbar has to do with the bar that I see on the top left, I manipulate the fillAMount in order to essentially have a percentage muscle as we see below after 1 Hit.



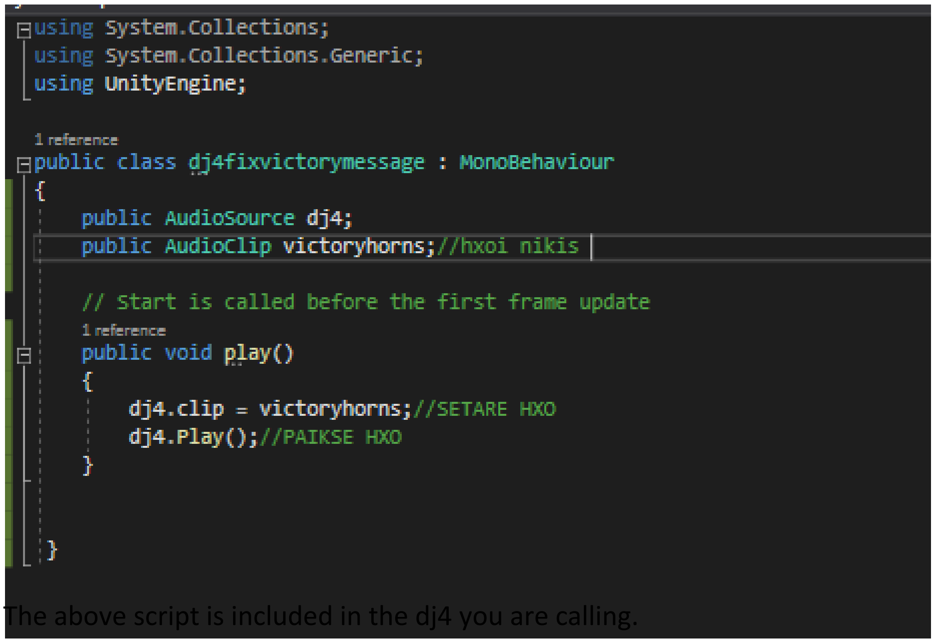


```
if (Input.GetKey(collectbutton))//MAZEPSE AXE
{

    collectaxe();//KALESE THN SUNARTISI POU TO KANEI
    HEALTHBAR = hpforprint * 0.01f;//GIA TIN MPARA THS ZOHS TWN AXE
    ((fpscamera.transform.GetChild(0).gameObject).transform.GetChild(2).gameObject).transform.GetChild(1).GetComponent<Image>().fillAmount = HEALTHBAR;//GIA TIN MPARA THS ZOHS TWN A

}
if (Input.GetKey(exitbutton))//ME TO X BGAINEIS
{
   // score = N * N - Time.time - sfuria * 50;

    Application.Quit();//STO EXPORT ARXEIO BGAINEI MONO STON EDITOR DEN BLEPOUME KATI
    Debug.Log("Game is exiting");
    //((fpscamera.transform.GetChild(0).gameObject).transform.GetChild(2).gameObject).transform.GetChild(2).GetComponent<Text>().text = "SCORE:" + score;

}
if (Input.GetKey(winbutton))//OTAN PATISEI TO E
{

    if (fpscamera.transform.position.y >= ((L * 1.9) + 0.1)&& timereadvictorymessageflag1==0)//1.9 y o kathe kibos *L epipeda +0.1y to dapedo kai mpainw proti fora to flag1=0
    {
        timereadvictorymessage = 10;//O XRONOS POU THA KANEI NA FUGEI
        timereadvictorymessageflag1 = 1;//SET THN SIMAIA
        dj4.GetComponent<dj4fixvictorymessage>().play();
        //MusicSourse.clip = mlg;//SETARE TON HXO
       // MusicSourse.Play();//PAIXTON
        timereadvictorymessageflag0 = 1;//SETARE THN DEUTERH SHMAIA
        Debug.Log("win");
        Instantiate(victorymessage, fpscamera.transform.position, Quaternion.identity);//EMFANISE TO MINIMA NIKHS
        score = N * N - Time.time - sfuria * 50;//UPOLOGISE SCORE
        ((fpscamera.transform.GetChild(0).gameObject).transform.GetChild(2).gameObject).transform.GetChild(2).GetComponent<Text>().text = "SCORE:" + score;//EMAFANISE TO



    }
    else
    {
        Debug.Log(fpscamera.transform.position.y);//GIA NA BLEPW POU EIMAI AKRIBOS KAHTE FORA POU PATAW E
    }


}
if (timereadvictorymessage > 0 && timereadvictorymessageflag1 == 1 && timereadvictorymessageflag0 == 1)//gia na prolabei na diabasei to message prin klisi to game
{
    timereadvictorymessage -= Time.deltaTime;//GIA TO DELAY TIME TOU VICTORY MINIMATOS

}
else if (timereadvictorymessage <= 0 && timereadvictorymessageflag1 == 1)
{
    timereadvictorymessageflag1 = 0;
    Application.Quit();//AFOU PERASEI O XRONOS KANE EXIT
    Debug.Log("Game is exiting");

}
```

We have the collectbutton which when pressed is to collect axes and calls collectaxe and resets the healthbar we will talk about collectaxe later.

The exitbutton which closes this game is only visible when Buildaroume our game and you will have buildarismeno to test it.

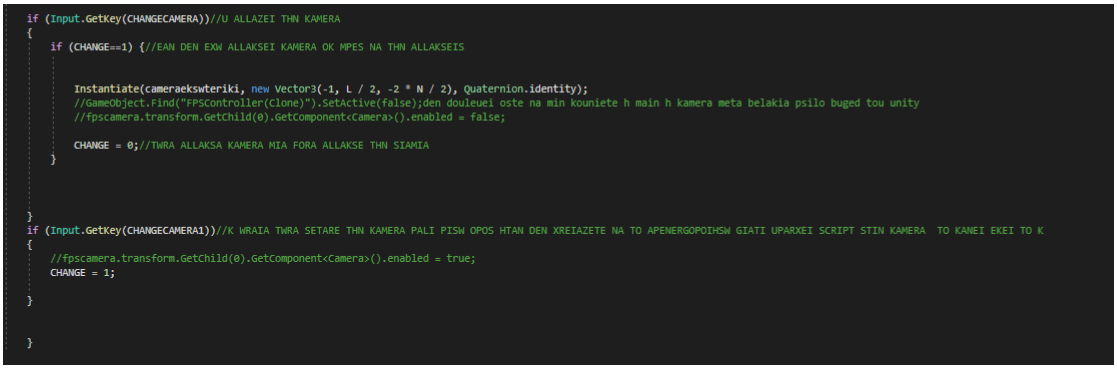
The winbutton, which counts the time the victory message will be displayed, calls dj4 to play the victory music, then sets some flags for the delay so that the game does not close immediately after pressing E so that the player has time to read the message.



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

1 reference
public class dj4fixvictorymessage : MonoBehaviour
{
    public AudioSource dj4;
    public AudioClip victoryhorns;//hxoi nikis

    // Start is called before the first frame update
    1 reference
    public void play()
    {
        dj4.clip = victoryhorns;//SETARE HXO
        dj4.Play();//PAIKSE HXO
    }


}
```

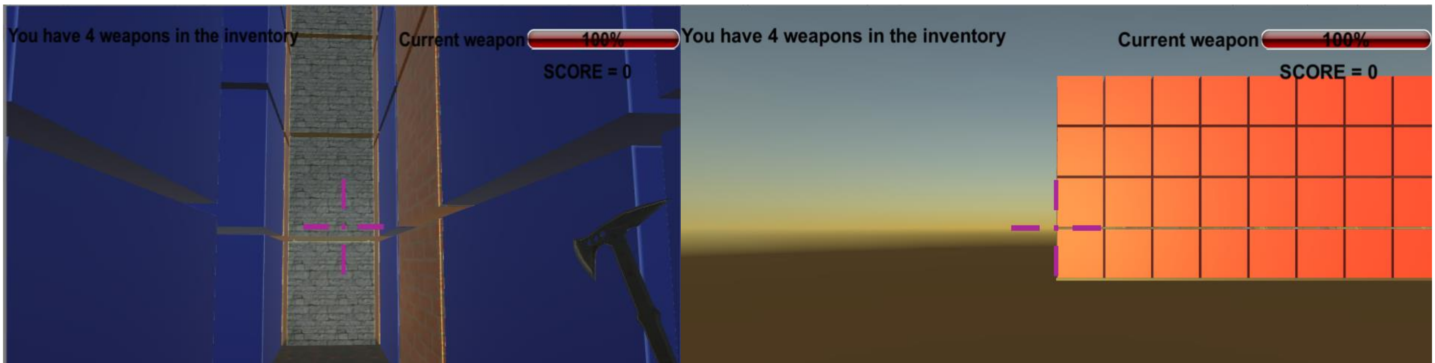
The above script is included in the dj4 you are calling.

Below we see 2 ifs which check some parameters and work to have a delay after pressing E so that it does not close directly and the player reads the victory message as we said.

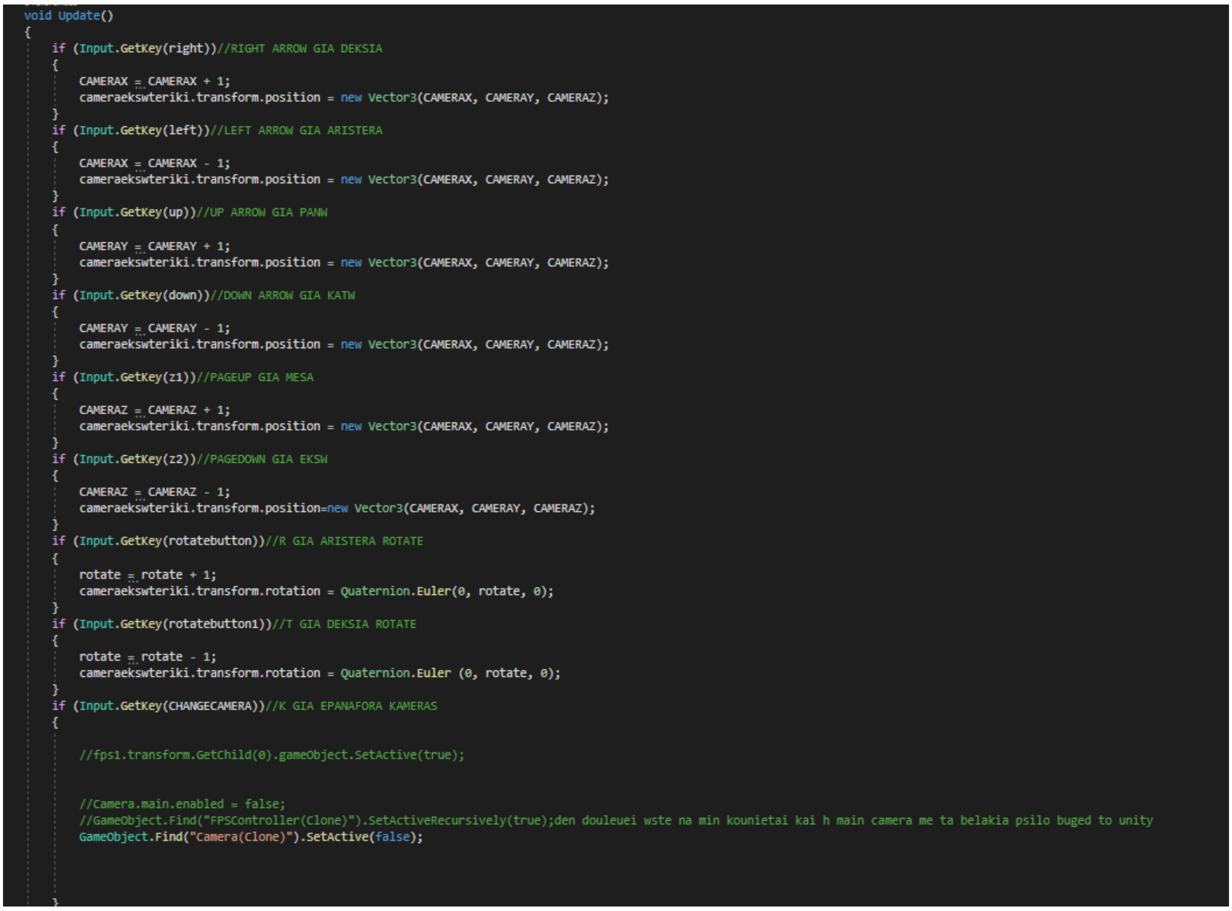


```
if (Input.GetKey(CHANGECAMERA))//U ALLAZEI THN KAMERA
{
    if (CHANGE==1) {//EAN DEN EXW ALLAKSEI KAMERA OK MPES NA THN ALLAKSEIS


        Instantiate(cameraekswteriki, new Vector3(-1, L / 2, -2 * N / 2), Quaternion.identity);
        //GameObject.Find("FPSController(Clone)").SetActive(false);den douleuei oste na min kouniete h main h kamera meta belakia psilo buged tou unity
        //fpscamera.transform.GetChild(0).GetComponent<Camera>().enabled = false;

        CHANGE = 0;//TWRA ALLAKSA KAMERA MIA FORA ALLAKSE THN SIAMIA
    }



}
if (Input.GetKey(CHANGECAMERA1))//K WRAIA TWRA SETARE THN KAMERA PALI PISW OPOS HTAN DEN XREIAZETE NA TO APENERGOPOIHSW GIATI UPARXEI SCRIPT STIN KAMERA  TO KANEI EKEI TO K
{
    //fpscamera.transform.GetChild(0).GetComponent<Camera>().enabled = true;
    CHANGE = 1;

}


}
```

Above we see the last buttons that refer to switching cameras from the maze to the outside. As shown below:


You have 4 weapons in the inventory
Current weapon
100%
SCORE = 0
You have 4 weapons in the inventory
Current weapon
100%
SCORE = 0

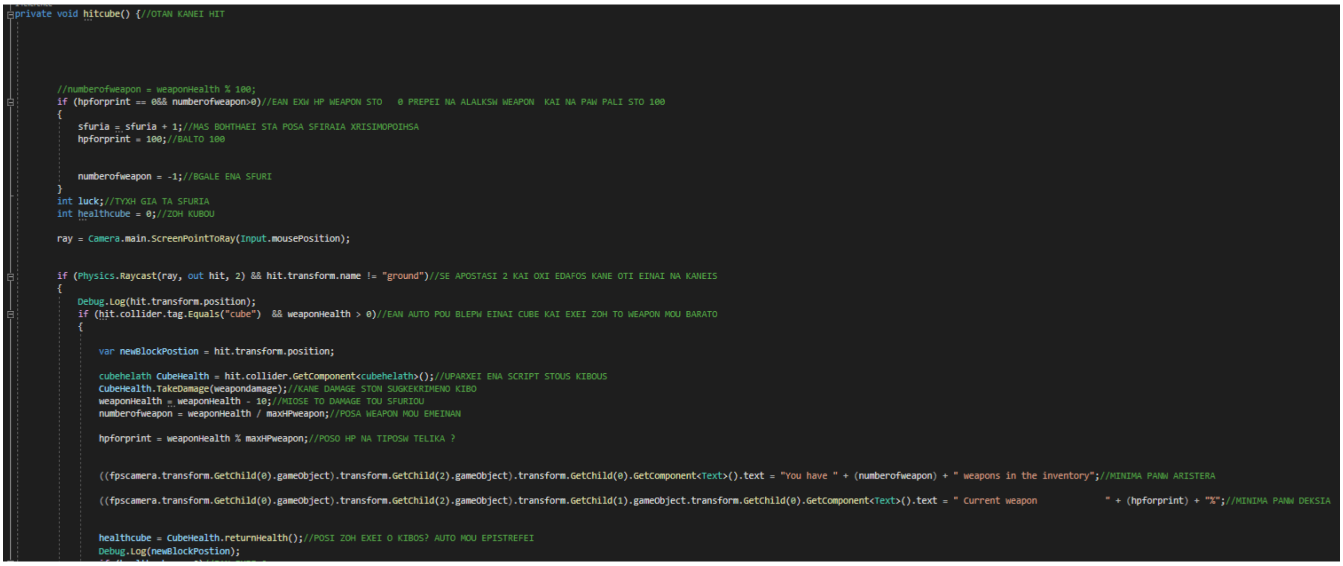
As far as the second camera is concerned, it has an integrated script that implements depending on the buttons we have defined its movements as well as the rotation so that we can see it round and round, rotate on the y axis we assumed that it is useless.



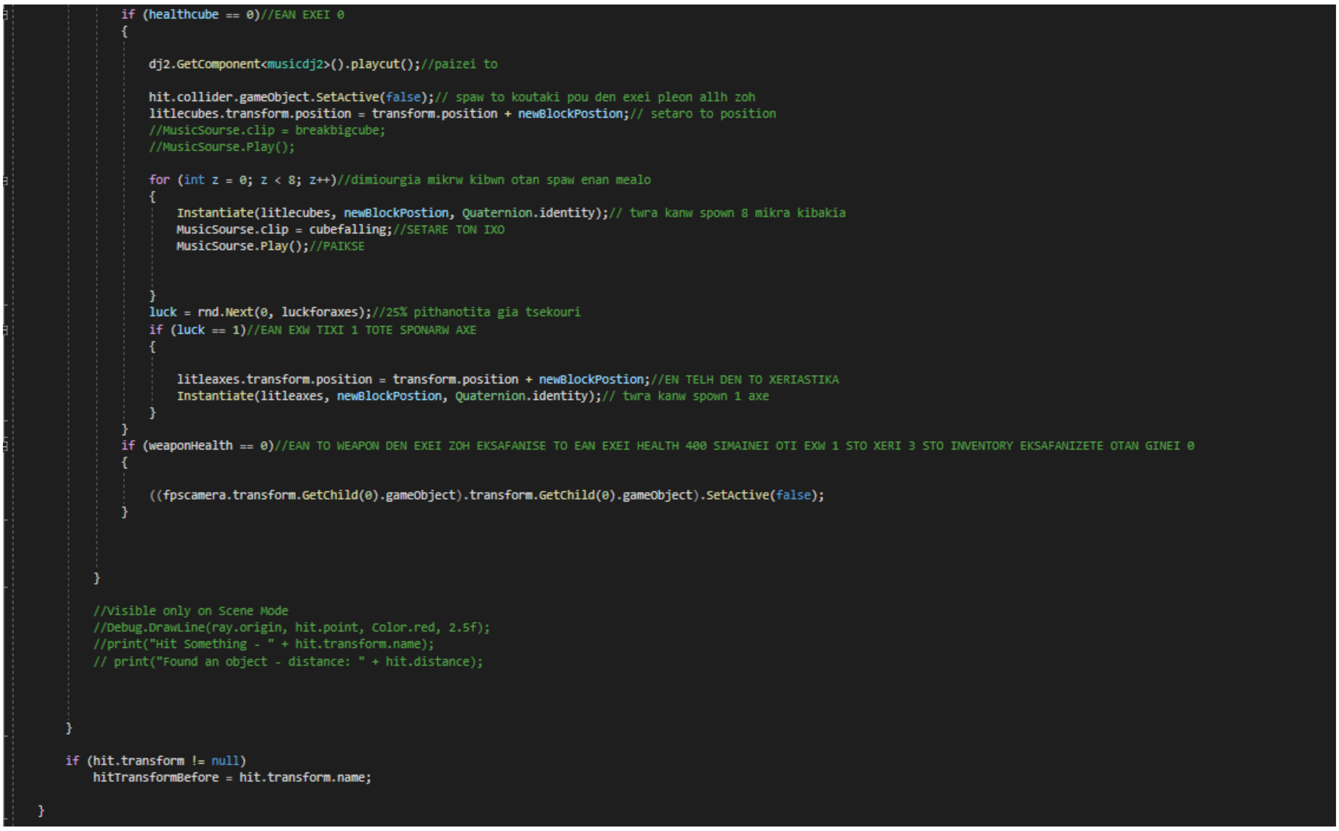
```
void Update()
{
    if (Input.GetKey(right))//RIGHT ARROW GIA DEKSIA
    {
        CAMERAX = CAMERAX + 1;
        cameraekswteriki.transform.position = new Vector3(CAMERAX, CAMERAY, CAMERAZ);
    }
    if (Input.GetKey(left))//LEFT ARROW GIA ARISTERA
    {
        CAMERAX = CAMERAX - 1;
        cameraekswteriki.transform.position = new Vector3(CAMERAX, CAMERAY, CAMERAZ);
    }
    if (Input.GetKey(up))//UP ARROW GIA PANW
    {
        CAMERAY = CAMERAY + 1;
        cameraekswteriki.transform.position = new Vector3(CAMERAX, CAMERAY, CAMERAZ);
    }
    if (Input.GetKey(down))//DOWN ARROW GIA KATW
    {
        CAMERAY = CAMERAY - 1;
        cameraekswteriki.transform.position = new Vector3(CAMERAX, CAMERAY, CAMERAZ);
    }
    if (Input.GetKey(z1))//PAGEUP GIA MESA
    {
        CAMERAZ = CAMERAZ + 1;
        cameraekswteriki.transform.position = new Vector3(CAMERAX, CAMERAY, CAMERAZ);
    }
    if (Input.GetKey(z2))//PAGEDOWN GIA EKSW
    {
        CAMERAZ = CAMERAZ - 1;
        cameraekswteriki.transform.position=new Vector3(CAMERAX, CAMERAY, CAMERAZ);
    }
    if (Input.GetKey(rotatebutton))//R GIA ARISTERA ROTATE
    {
        rotate = rotate + 1;
        cameraekswteriki.transform.rotation = Quaternion.Euler(0, rotate, 0);
    }
    if (Input.GetKey(rotatebutton1))//T GIA DEKSIA ROTATE
    {
        rotate = rotate - 1;
        cameraekswteriki.transform.rotation = Quaternion.Euler (0, rotate, 0);
    }
    if (Input.GetKey(CHANGECAMERA))//K GIA EPANAFORA KAMERAS
    {

        //fps1.transform.GetChild(0).gameObject.SetActive(true);


        //Camera.main.enabled = false;
        //GameObject.Find("FPSController(Clone)").SetActiveRecursively(true);den douleuei wste na min kounietai kai h main camera me ta belakia psilo buged to unity
        GameObject.Find("Camera(Clone)").SetActive(false);



    }
```

So when we want to go back we deactivate the camera.

Now we will refer to the 2 functions hitcube and collectaxe where they are called when we press H ,F respectively.



```
private void hitcube() {//OTAN KANEI HIT




        //numberofweapon = weaponHealth % 100;
        if (hpforprint == 0&& numberofweapon>0)//EAN EXW HP WEAPON STO   0 PREPEI NA ALALKSW WEAPON  KAI NA PAW PALI STO 100
        {
            sfuria = sfuria + 1;//MAS BOHTHAEI STA POSA SFIRAIA XRISIMOPOIHSA
            hpforprint = 100;//BALTO 100


            numberofweapon = -1;//BGALE ENA SFURI
        }
        int luck;//TYXH GIA TA SFURIA
        int healthcube = 0;//ZOH KUBOU

        ray = Camera.main.ScreenPointToRay(Input.mousePosition);


        if (Physics.Raycast(ray, out hit, 2) && hit.transform.name != "ground")//SE APOSTASI 2 KAI OXI EDAFOS KANE OTI EINAI NA KANEIS
        {
            Debug.Log(hit.transform.position);
            if (hit.collider.tag.Equals("cube")  && weaponHealth > 0)//EAN AUTO POU BLEPW EINAI CUBE KAI EXEI ZOH TO WEAPON MOU BARATO
            {

                var newBlockPostion = hit.transform.position;

                cubehelath CubeHealth = hit.collider.GetComponent<cubehelath>();//UPARXEI ENA SCRIPT STOUS KIBOUS
                CubeHealth.TakeDamage(weapondamage);//KANE DAMAGE STON SUGKEKRIMENO KIBO
                weaponHealth = weaponHealth - 10;//MIOSE TO DAMAGE TOU SFURIOU
                numberofweapon = weaponHealth / maxHPweapon;//POSA WEAPON MOU EMEINAN

                hpforprint = weaponHealth % maxHPweapon;//POSO HP NA TIPOSW TELIKA ?


                ((fpscamera.transform.GetChild(0).gameObject).transform.GetChild(2).gameObject).transform.GetChild(0).GetComponent<Text>().text = "You have " + (numberofweapon) + " weapons in the inventory";//MINIMA PANW ARISTERA

                ((fpscamera.transform.GetChild(0).gameObject).transform.GetChild(2).gameObject).transform.GetChild(1).gameObject.transform.GetChild(0).GetComponent<Text>().text = " Current weapon           " + (hpforprint) + "%";//MINIMA PANW DEKSIA


                healthcube = CubeHealth.returnHealth();//POSI ZOH EXEI O KIBOS? AUTO MOU EPISTREFEI
                Debug.Log(newBlockPostion);
```



```
                if (healthcube == 0)//EAN EXEI 0
                {

                    dj2.GetComponent<musicdj2>().playcut();//paizei to

                    hit.collider.gameObject.SetActive(false);// spaw to koutaki pou den exei pleon allh zoh
                    litlecubes.transform.position = transform.position + newBlockPostion;// setaro to position
                    //MusicSourse.clip = breakbigcube;
                    //MusicSourse.Play();

                    for (int z = 0; z < 8; z++)//dimiourgia mikrw kibwn otan spaw enan mealo
                    {
                        Instantiate(litlecubes, newBlockPostion, Quaternion.identity);// twra kanw spown 8 mikra kibakia
                        MusicSourse.clip = cubefalling;//SETARE TON IXO
                        MusicSourse.Play();//PAIKSE


                    }
                    luck = rnd.Next(0, luckforaxes);//25% pithanotita gia tsekouri
                    if (luck == 1)//EAN EXW TIXI 1 TOTE SPONARW AXE
                    {

                        litleaxes.transform.position = transform.position + newBlockPostion;//EN TELH DEN TO XERIASTIKA
                        Instantiate(litleaxes, newBlockPostion, Quaternion.identity);// twra kanw spown 1 axe
                    }
                }
                if (weaponHealth == 0)//EAN TO WEAPON DEN EXEI ZOH EKSAFANISE TO EAN EXEI HEALTH 400 SIMAINEI OTI EXW 1 STO XERI 3 STO INVENTORY EKSAFANIZETE OTAN GINEI 0
                {

                    ((fpscamera.transform.GetChild(0).gameObject).transform.GetChild(0).gameObject).SetActive(false);
                }



            }

            //Visible only on Scene Mode
            //Debug.DrawLine(ray.origin, hit.point, Color.red, 2.5f);
            //print("Hit Something - " + hit.transform.name);
            // print("Found an object - distance: " + hit.distance);



        }

        if (hit.transform != null)
            hitTransformBefore = hit.transform.name;
    }
```

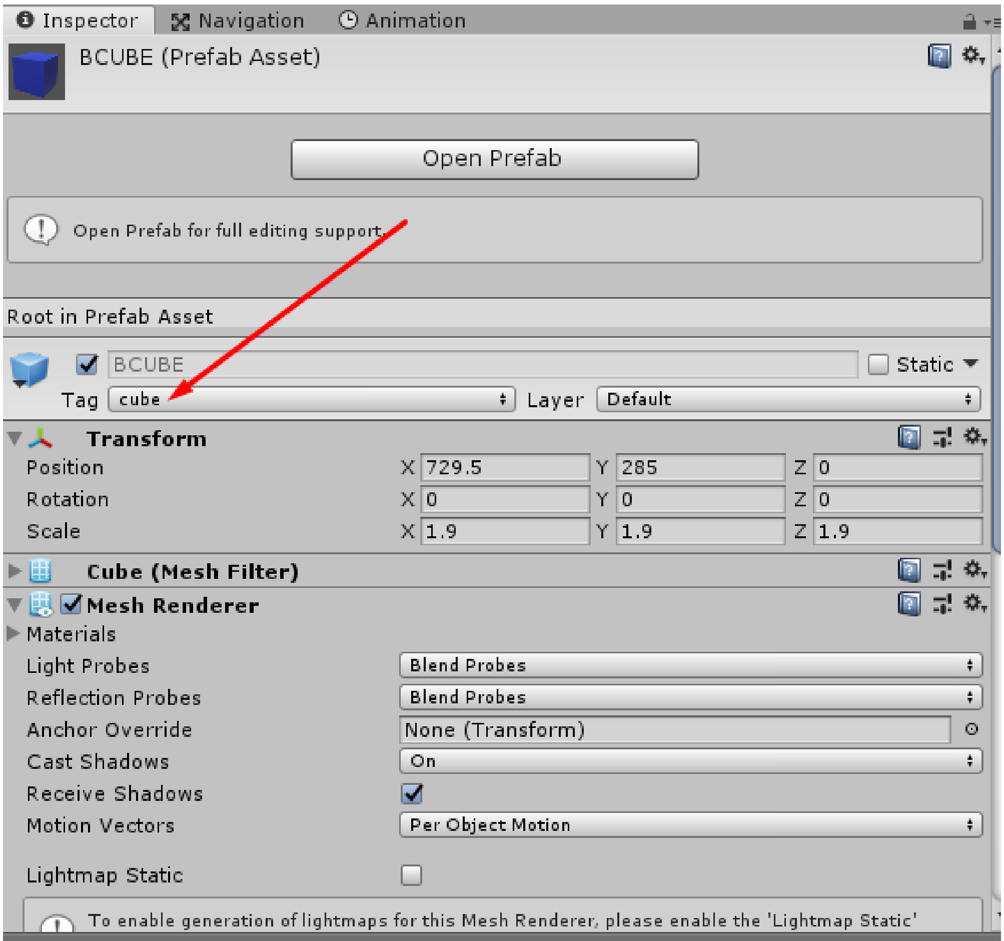
Above we have the entire Hitcube function.

Initially, the first If you use to correctly define the Hpforprint, which is basically the life percentage of the weapon when it goes to 0 and I hit again, it must check if I have hammers, reduce them by 1 and set the life to 100.

Then we define the fate and life of the cube locally.

We define the ray as it is represented in the lesson.

If what the ray sees is at a distance of 2 and is not the floor then it must hit the cube we pass to the first If . The second nested If checks if what we hit is a cube All the tiles except the floor have been entered into a cube tag as shown below.



BCUBE (Prefab Asset)

Open Prefab for full editing support.

Root in Prefab Asset

☑ BCUBE □ Static

Tag cube Layer Default

Transform

Position X 729.5 Y 285 Z 0

Rotation X 0 Y 0 Z 0

Scale X 1.9 Y 1.9 Z 1.9

Cube (Mesh Filter)

☑ **Mesh Renderer**

Materials

Light Probes Blend Probes

Reflection Probes Blend Probes

Anchor Override None (Transform)

Cast Shadows On

Receive Shadows ☑

Motion Vectors Per Object Motion

Lightmap Static □

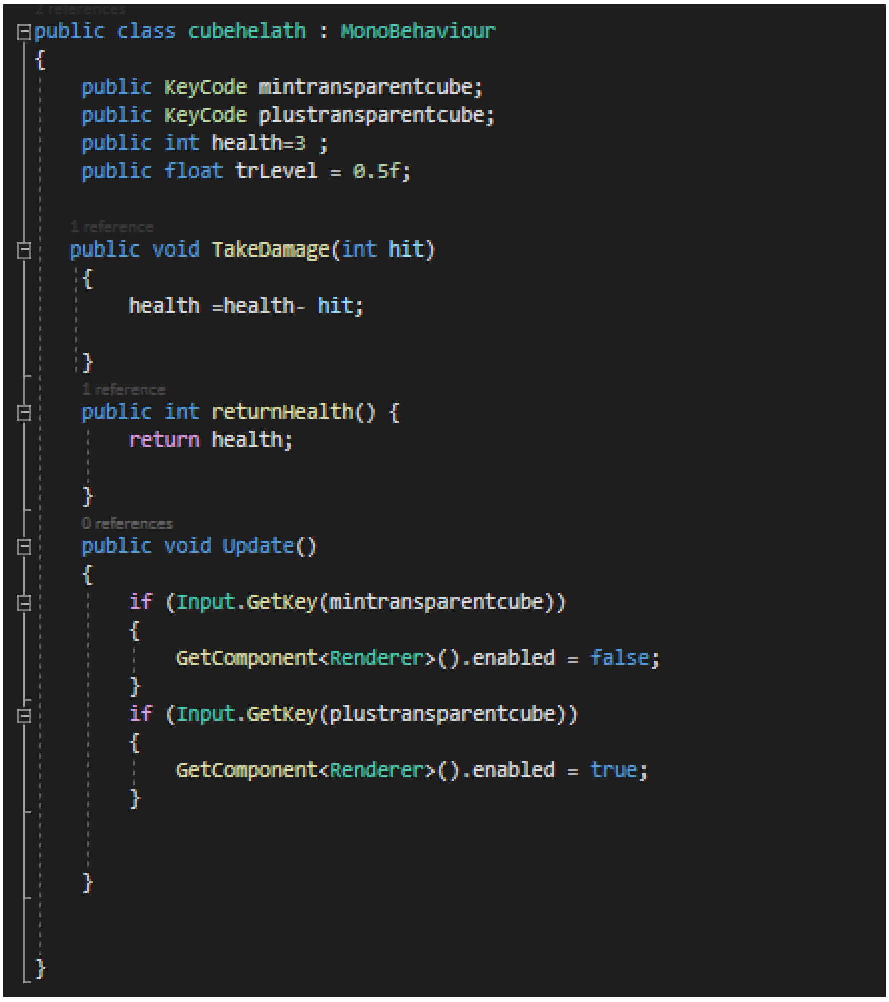
To enable generation of lightmaps for this Mesh Renderer, please enable the 'Lightmap Static'

So if the tag is cube And the weaponhealth, i.e. the life of the weapon is greater than 0, we must also enter this if, i.e. all conditions for the hit are met.

Here we must say that weaponhealth is not life of one hammer but of all hammers. For example at 4 hammers the weaponhealth as we saw in Update when we press the Hit button It goes the first time and sets the weaponhealth =4*100 i.e. 400 we will not have any hammers if this is 0 so then we cannot hit the cube.

Then entering the if we make the cubehealth from each cube. Each cube also has a script that keeps the life of the cube and can return it to us at any time in the Main code so that we can check when the cube will break.

Below is the script embedded in each box



```
2 references
public class cubehelath : MonoBehaviour
{
    public KeyCode mintransparentcube;
    public KeyCode plustransparentcube;
    public int health=3 ;
    public float trLevel = 0.5f;

    1 reference
   public void TakeDamage(int hit)
    {
        health =health- hit;

    }
    1 reference
    public int returnHealth() {
        return health;

    }
    0 references
    public void Update()
    {
        if (Input.GetKey(mintransparentcube))
        {
            GetComponent<Renderer>().enabled = false;
        }
        if (Input.GetKey(plustransparentcube))
        {
            GetComponent<Renderer>().enabled = true;
        }


    }


}
```

In addition to the 2 functions where they grab life and give it back we have added 2 buttons that make all but black cubes invisible we assume that the transparency you mention in the questions has to do with the black cubes and should help us find them every time .

We now return to our function.

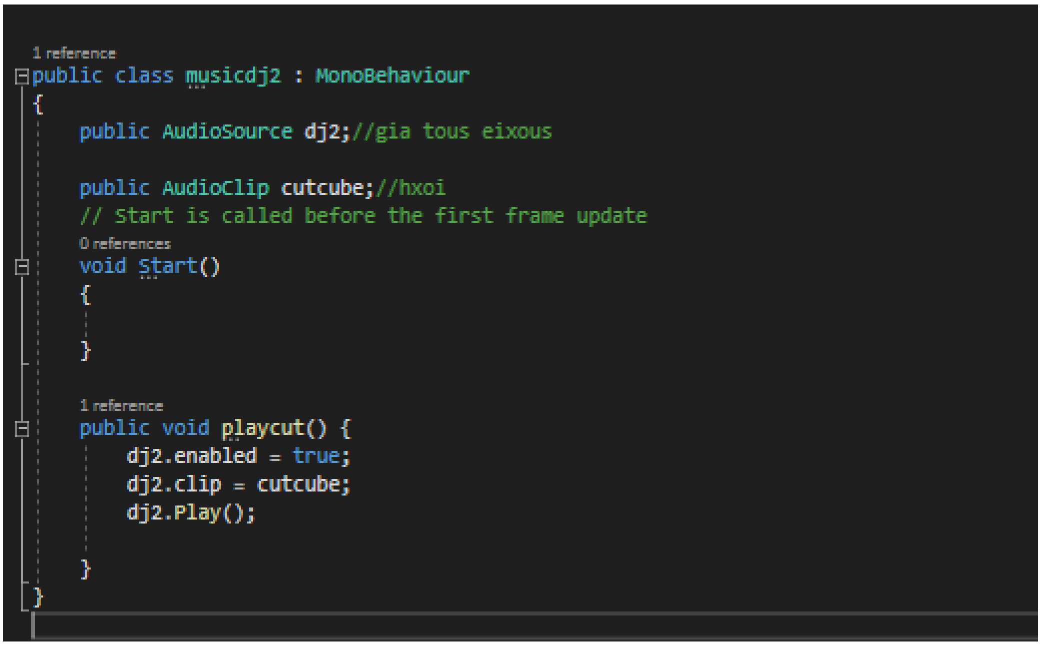
So after we set the cubehealth and we are in the if we hit, we must remove 1 unit from the life of the cube each time since each cube has 3 lives, so with 3 Hits the cube is deleted.

With each hit our hammer loses 10 Life The next 3 lines for weaponhealth numberofweapon hpforprint configure our parameters to pass correct values after each hit

Immediately after they get the correct values, we change the text so that they remove the new values.

The healthcube we said above will help us check if the cube should break whenever immediately afterwards we ask the script of each cube to send us back how much life it has if this life is 0 then we call dj2 to play its music.

dj2 also has a script which can be seen below.



```
1 reference
public class musicdj2 : MonoBehaviour
{
    public AudioSource dj2;//gia tous eixous

    public AudioClip cutcube;//hxoi
    // Start is called before the first frame update
    0 references
    void Start()
    {

    }

    1 reference
    public void playcut() {
        dj2.enabled = true;
        dj2.clip = cutcube;
        dj2.Play();

    }
}
```

The use of several scripts in different GameObjects is for the smooth operation of the sound since only one source cannot play many sounds at the same time.

So the sound plays and immediately after that we disappear the cow

In a for we display in the specific position of the cube the one we have stored in newblockpostion, 8 little boxes litlecubes.

Then I create the luck depending on what number we gave to luckforaxes if for example it is 4 then we have a 25% chance if it is 3 we have 33% etc.

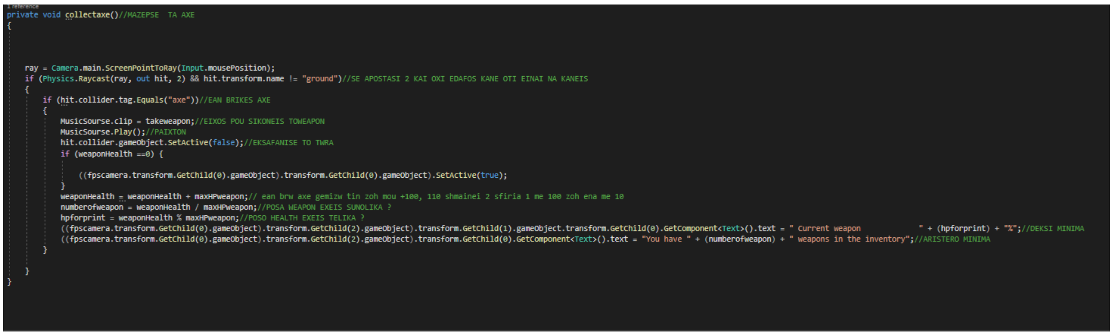
The probability of getting us 1 between the interval 0-Luckforaxes

So if it comes out 1 then we will also spin an ax.

Finally if the life of the weapon is 0 the total life what we mentioned as 400 becomes 0 then we have to disable the ax since there is no hammer.

The last if is for the editor for some tests we did to see that everything works smoothly and does not affect the game somewhere.

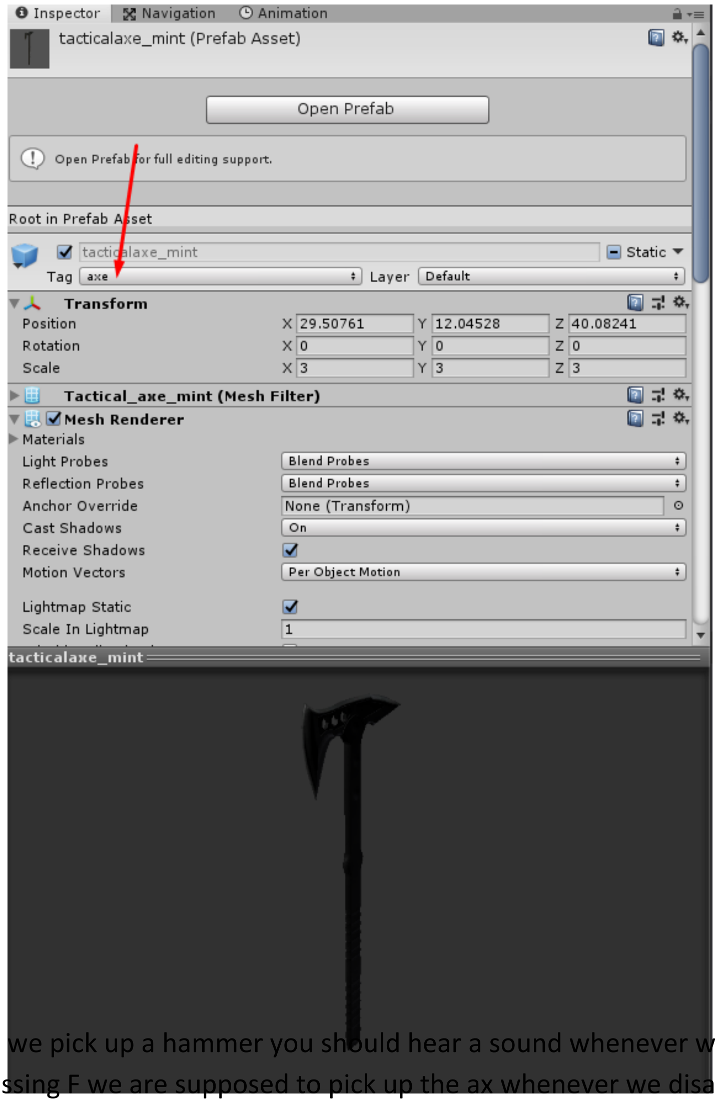
Finally, it's time to refer to the last function, collectaxe



```
1 reference
private void collectaxe()//MAZEPSE  TA AXE
{



    ray = Camera.main.ScreenPointToRay(Input.mousePosition);
    if (Physics.Raycast(ray, out hit, 2) && hit.transform.name != "ground")//SE APOSTASI 2 KAI OXI EDAFOS KANE OTI EINAI NA KANEIS
    {
        if (hit.collider.tag.Equals("axe"))//EAN BRIKES AXE
        {
            MusicSourse.clip = takeweapon;//EIXOS POU SIKONEIS TOWEAPON
            MusicSourse.Play();//PAIXTON
            hit.collider.gameObject.SetActive(false);//EKSAFANISE TO TWRA
            if (weaponHealth ==0) {

                ((fpscamera.transform.GetChild(0).gameObject).transform.GetChild(0).gameObject).SetActive(true);
            }
            weaponHealth = weaponHealth + maxHPweapon;// ean brw axe gemizw tin zoh mou +100, 110 shmainei 2 sfiria 1 me 100 zoh ena me 10
            numberofweapon = weaponHealth / maxHPweapon;//POSA WEAPON EXEIS SUNOLIKA ?
            hpforprint = weaponHealth % maxHPweapon;//POSO HEALTH EXEIS TELIKA ?
            ((fpscamera.transform.GetChild(0).gameObject).transform.GetChild(2).gameObject).transform.GetChild(1).gameObject.transform.GetChild(0).GetComponent<Text>().text = " Current weapon            " + (hpforprint) + "%";//DEKSI MINIMA
            ((fpscamera.transform.GetChild(0).gameObject).transform.GetChild(2).gameObject).transform.GetChild(0).GetComponent<Text>().text = "You have " + (numberofweapon) + " weapons in the inventory";//ARISTERO MINIMA
        }

    }
}
```

We redefine the ray something unnecessary just for some reason it was giving us a problem.

If it is at a distance of 2 and not the floor then we have to enter the next if the object we are looking at is an ax the tag of the hammers is shown below



Inspector | Navigation | Animation

tacticalaxe_mint (Prefab Asset)

Open Prefab

Open Prefab for full editing support.

Root in Prefab Asset

☑ tacticalaxe_mint — Static

Tag: axe — Layer: Default

Transform

Position X 29.50761 Y 12.04528 Z 40.08241

Rotation X 0 Y 0 Z 0

Scale X 3 Y 3 Z 3

Tactical_axe_mint (Mesh Filter)

☑ **Mesh Renderer**

Materials

Light Probes: Blend Probes

Reflection Probes: Blend Probes

Anchor Override: None (Transform)

Cast Shadows: On

Receive Shadows: ☑

Motion Vectors: Per Object Motion

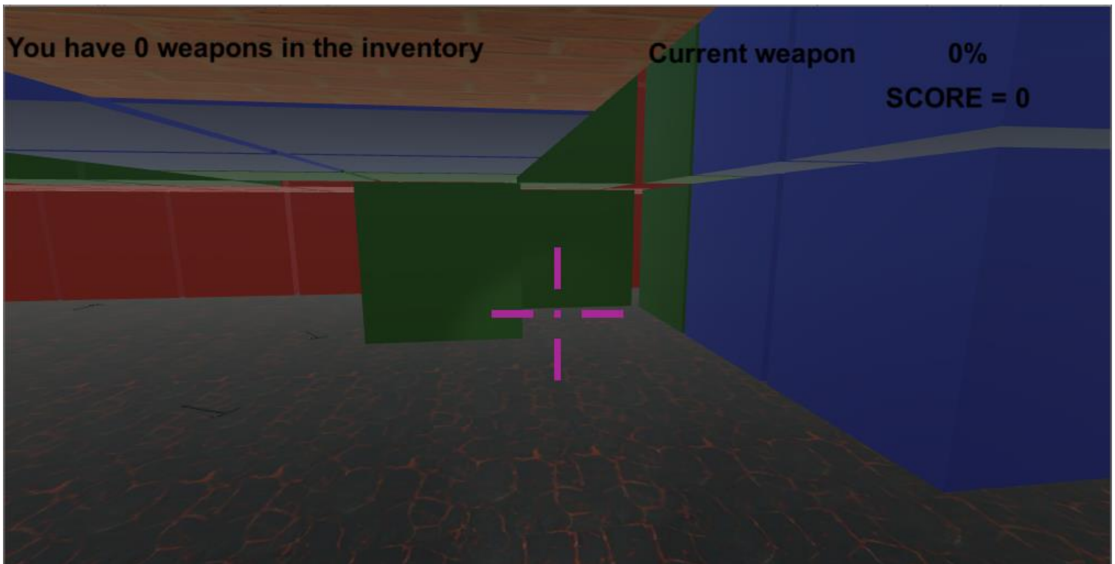
Lightmap Static: ☑

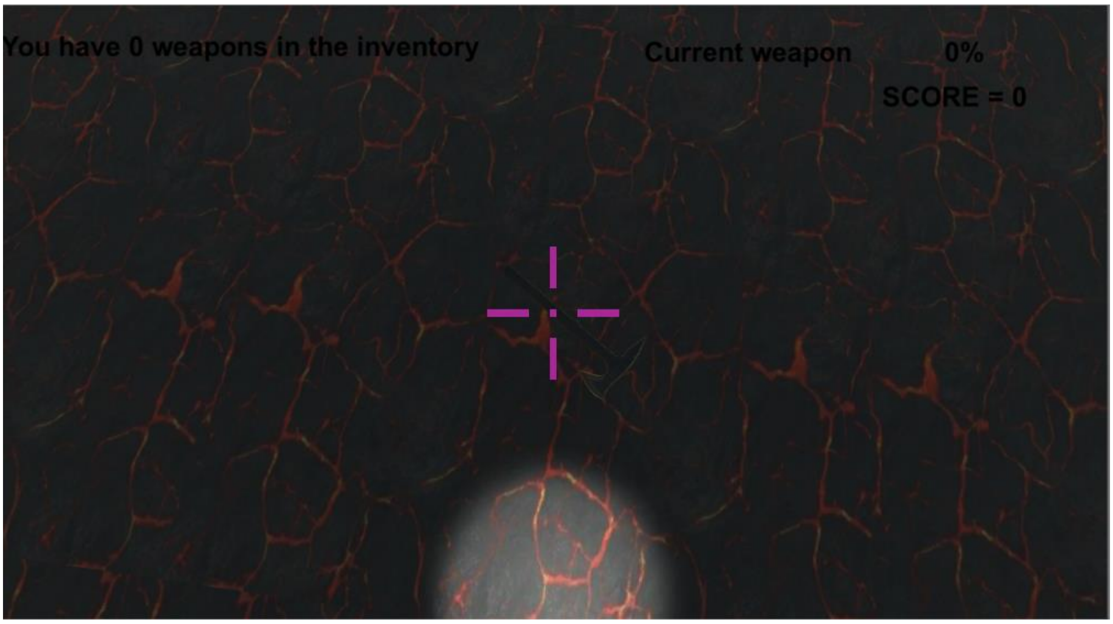
Scale In Lightmap: 1

tacticalaxe_mint

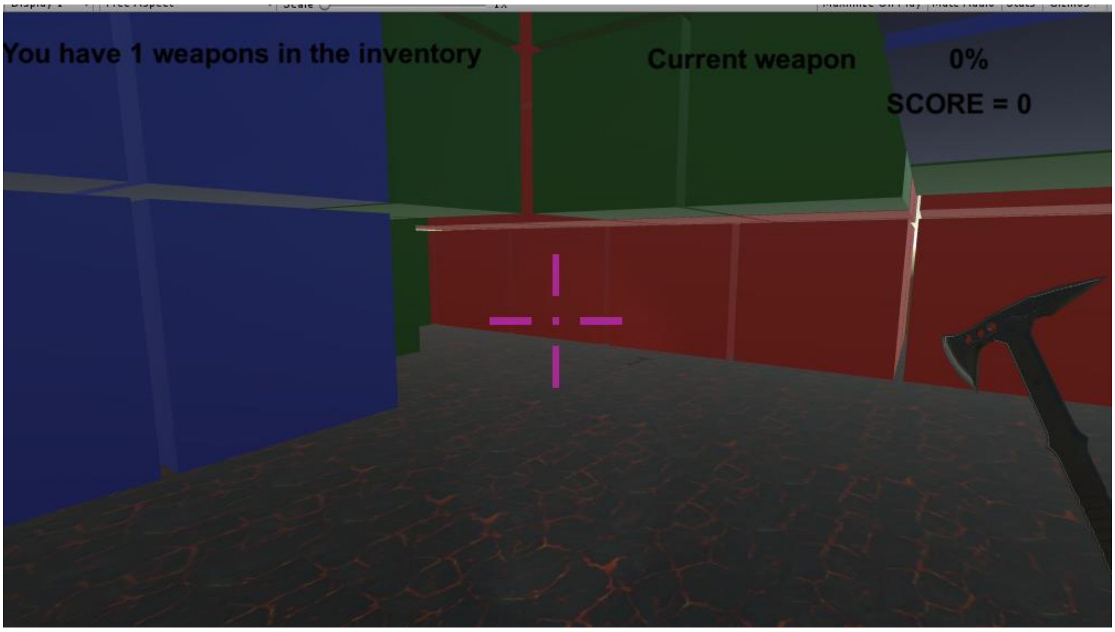
Every time we pick up a hammer you should hear a sound whenever we set it and then play it after pressing F we are supposed to pick up the ax whenever we disappear the hammer from the floor.

If the axes life total was 0 it means I didn't have an ax and it wouldn't appear to be holding anything now I have to show it again



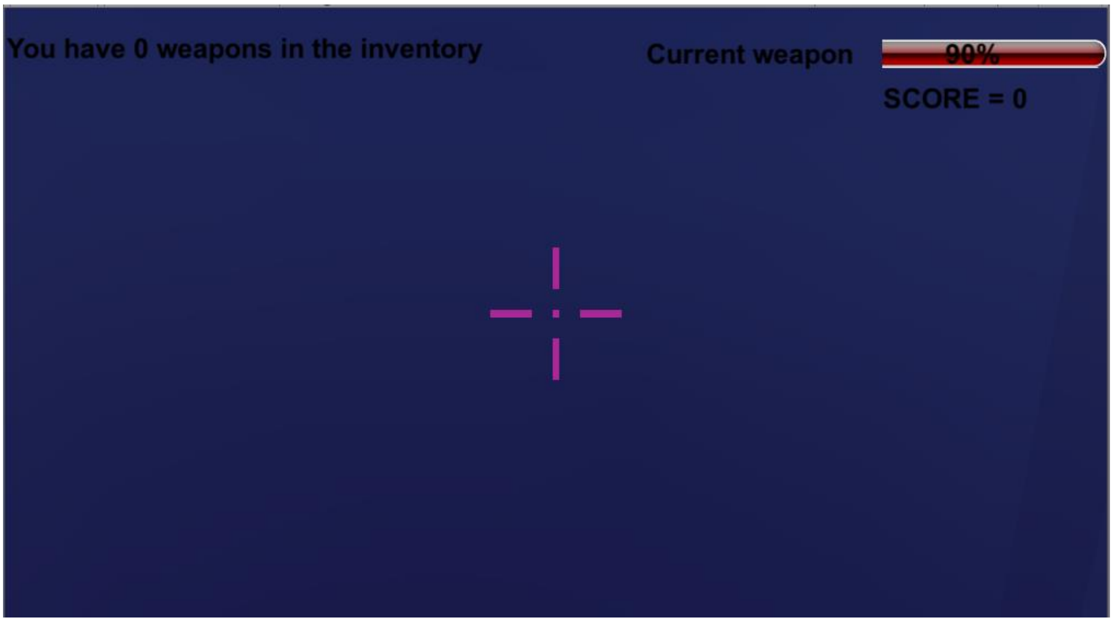


You have 0 weapons in the inventory
Current weapon
0%
SCORE = 0



You have 1 weapons in the inventory
Current weapon
0%
SCORE = 0

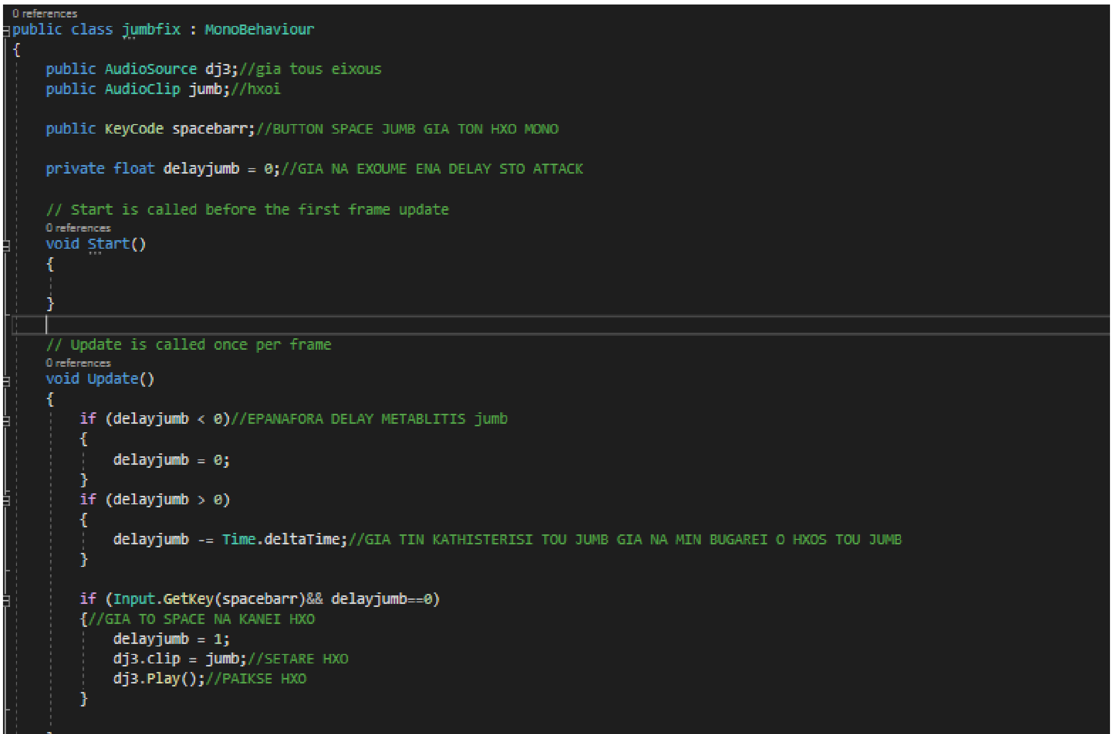
And with my first Hit in a cube



Then again the variables weaponhealth numberofweapon hpforprint are set and we format the texts on the right and left.

At this point we are done with the Main code.

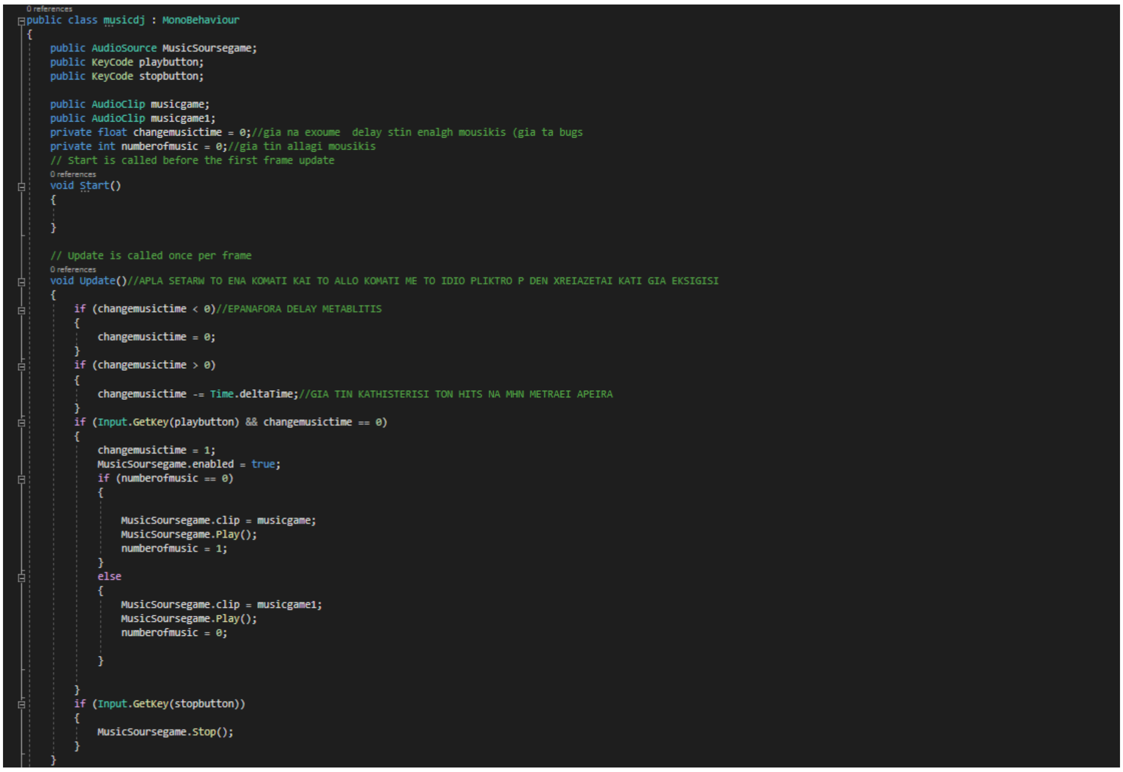
There is still if script in d3fixjumb



```
0 references
public class jumbfix : MonoBehaviour
{
    public AudioSource dj3;//gia tous eixous
    public AudioClip jumb;//hxoi

    public KeyCode spacebarr;//BUTTON SPACE JUMB GIA TON HXO MONO

    private float delayjumb = 0;//GIA NA EXOUME ENA DELAY STO ATTACK

    // Start is called before the first frame update
    0 references
    void Start()
    {

    }

    // Update is called once per frame
    0 references
    void Update()
    {
        if (delayjumb < 0)//EPANAFORA DELAY METABLITIS jumb
        {
            delayjumb = 0;
        }
        if (delayjumb > 0)
        {
            delayjumb -= Time.deltaTime;//GIA TIN KATHISTERISI TOU JUMB GIA NA MIN BUGAREI O HXOS TOU JUMB
        }

        if (Input.GetKey(spacebarr)&& delayjumb==0)
        {//GIA TO SPACE NA KANEI HXO
            delayjumb = 1;
            dj3.clip = jumb;//SETARE HXO
            dj3.Play();//PAIKSE HXO
        }
```

Which, like the text, we fix the sound that we have given to Jump, that is, we give a delay to the jumb so that the sound does not stick by pressing the space, it never caught a double jumb and the sound was not the right one.

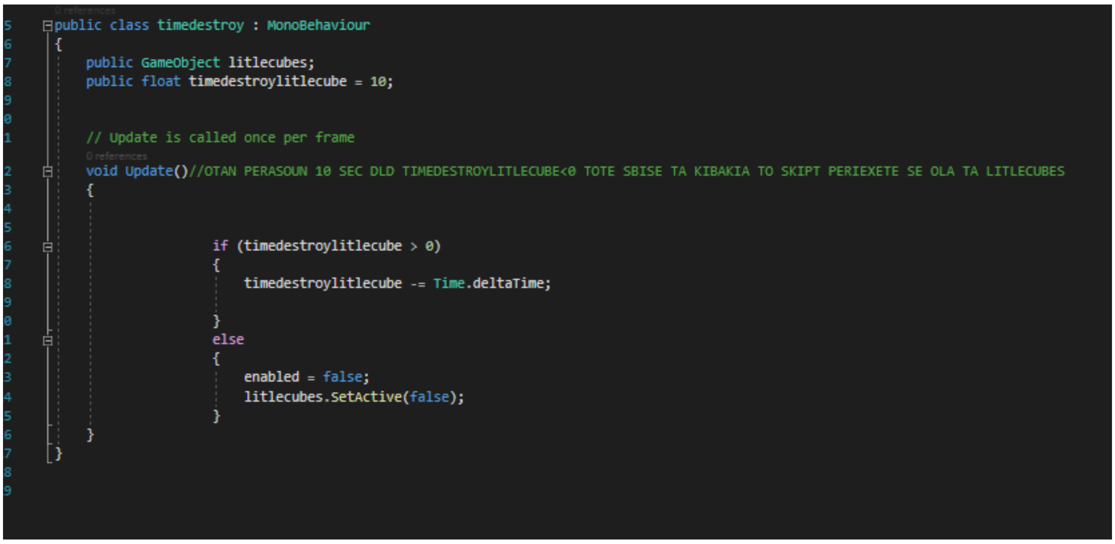
Additionally we have added dj1 which during the game allows us to play music and is shown below.



```
0 references
public class musicdj : MonoBehaviour
{
    public AudioSource MusicSoursegame;
    public KeyCode playbutton;
    public KeyCode stopbutton;

    public AudioClip musicgame;
    public AudioClip musicgame1;
    private float changemusictime = 0;//gia na exoume  delay stin enalgh mousikis (gia ta bugs
    private int numberofmusic = 0;//gia tin allagi mousikis
    // Start is called before the first frame update
    0 references
    void Start()
    {

    }

    // Update is called once per frame
    0 references
    void Update()//APLA SETARW TO ENA KOMATI KAI TO ALLO KOMATI ME TO IDIO PLIKTRO P DEN XREIAZETAI KATI GIA EKSIGISI
    {
        if (changemusictime < 0)//EPANAFORA DELAY METABLITIS
        {
            changemusictime = 0;
        }
        if (changemusictime > 0)
        {
            changemusictime -= Time.deltaTime;//GIA TIN KATHISTERISI TON HITS NA MHN METRAEI APEIRA
        }
        if (Input.GetKey(playbutton) && changemusictime == 0)
        {
            changemusictime = 1;
            MusicSoursegame.enabled = true;
            if (numberofmusic == 0)
            {

                MusicSoursegame.clip = musicgame;
                MusicSoursegame.Play();
                numberofmusic = 1;
            }
            else
            {
                MusicSoursegame.clip = musicgame1;
                MusicSoursegame.Play();
                numberofmusic = 0;

            }

        }
        if (Input.GetKey(stopbutton))
        {
            MusicSoursegame.Stop();
        }
    }
```

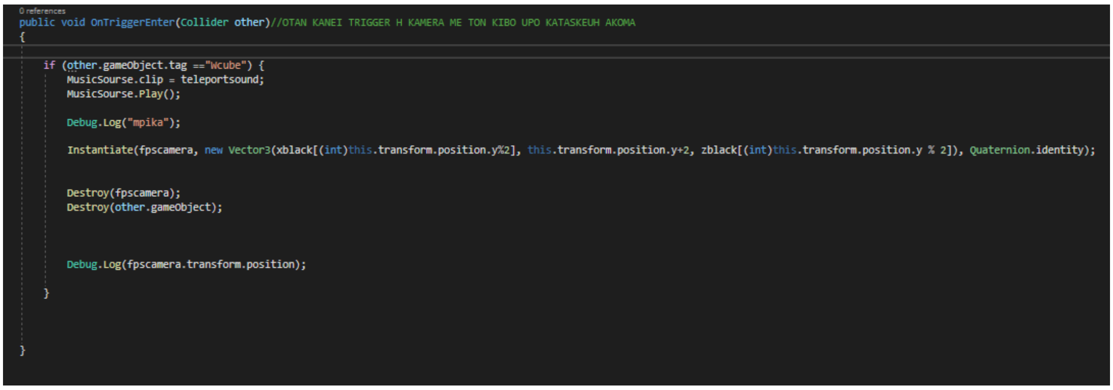
Here we have a flag that we alternate every time we press the button where it signals the start of the music in the game so that each time the track is set and played so we alternate the 2 pieces of music we have put as well as we have added a delay time so that it does not it gets stuck pressing the music button and it plays the same track again, never pressing P it played the same track because it caught it as if we press P 3 times some for one and some for 2 whenever with the delay we fixed this problem.

We have added to each litlecube a script so that every time after their appearance they are destroyed, this can be seen in the image below, the operation is simple, there is a delay time that when this time passes, then we disappear the cubes



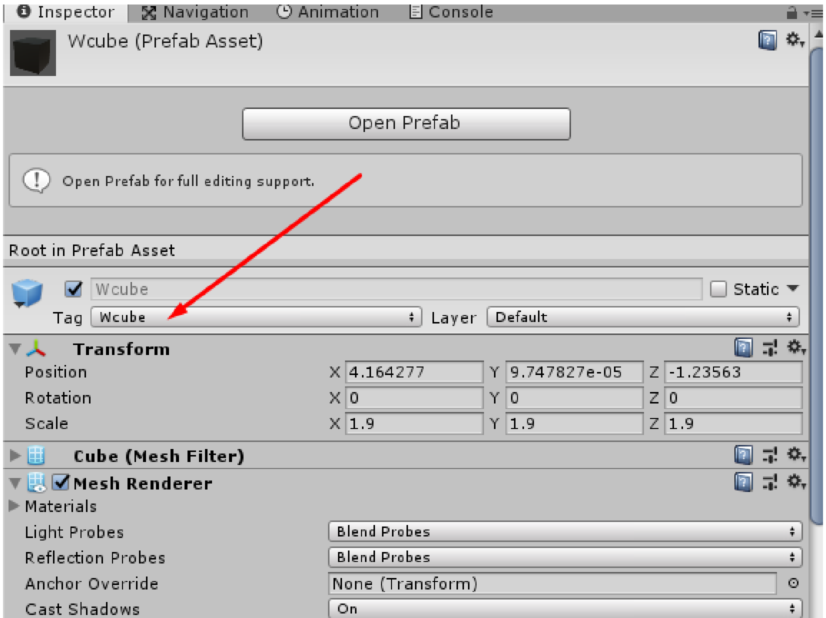
```
0 references
public class timedestroy : MonoBehaviour
{

    public GameObject litlecubes;
    public float timedestroylitlecube = 10;


    // Update is called once per frame
    0 references
    void Update()//OTAN PERASOUN 10 SEC DLD TIMEDESTROYLITLECUBE<0 TOTE SBISE TA KIBAKIA TO SKIPT PERIEXETE SE OLA TA LITLECUBES
    {


                if (timedestroylitlecube > 0)
                {
                    timedestroylitlecube -= Time.deltaTime;

                }
                else
                {
                    enabled = false;
                    litlecubes.SetActive(false);
                }
    }
}
```

Finally, there is the teleport that you implement through OnTriggerEnter.



```
0 references
public void OnTriggerEnter(Collider other)//OTAN KANEI TRIGGER H KAMERA ME TON KIBO UPO KATASKEUH AKOMA
{

    if (other.gameObject.tag =="Wcube") {
        MusicSourse.clip = teleportsound;
        MusicSourse.Play();

        Debug.Log("mpika");

        Instantiate(fpscamera, new Vector3(xblack[(int)this.transform.position.y%2], this.transform.position.y+2, zblack[(int)this.transform.position.y % 2]), Quaternion.identity);


        Destroy(fpscamera);
        Destroy(other.gameObject);



        Debug.Log(fpscamera.transform.position);

    }



}
```

Here we check if the other, i.e. the object that was triggered, has a Wcube tag



Wcube (Prefab Asset)

Open Prefab

Open Prefab for full editing support.

Root in Prefab Asset

☑ Wcube □ Static

Tag Wcube Layer Default

Transform

Position	X	4.164277	Y	9.747827e-05	Z	-1.23563
Rotation	X	0	Y	0	Z	0
Scale	X	1.9	Y	1.9	Z	1.9

Cube (Mesh Filter)

☑ Mesh Renderer

Materials

Light Probes	Blend Probes
Reflection Probes	Blend Probes
Anchor Override	None (Transform)
Cast Shadows	On

In this case we will set the teleport sound, play it and place the camera at the base of the xblack and zblack table. To get the position of the table which will give us the coordinates of each black cube we use this strange (int)this.transform.position.y%2 . The logic is as follows, int simply converts it to integer what we want and this.transform.position.y returns what y the camera has whenever for example if it has 1 the result 1%2 gives us 1 so we will go to cell 1 i.e. the second position of the table which essentially contains the 2nd cube which is where we actually want to teleport.

Then we destroy the old camera and we also destroy the cube we want to teleport. Typically cubes act as gates

(2 cubes = a gate)

If the player enters a cube they are destroyed in other words 2 .

All the questions have been implemented as well as all the Bonuses. There are also extensions to the code that were not requested by the speech.

END OF REPORT

Club :

Vasilis Mylonas 2777

Andreas Theofilopoulos 2701