

SHOOTNWORK 3D FPS

Oyun Hikayesi

Oyunumuzdaki Karakterimizin adı Veys'tir. Veys Marsa keşfe giderken yolculuk sırasında belirlenemeyen bir cisme çarpıp yere çakılmıştır. Uyandığında elinde sadece bir tabanca bulunan Veys uzay gemisini tamir etmek için onu arayışa çıkıyor. Karşısına çıkan düşmanlardan kaçmaya çalışırken kendisini labirent tarzı bir yerde buluyor. Bulunduğu platformdan çıkış yolları ararken onu bekleyen sürprizlere hazırlıksızdır. Bulunan portalları deneyerek bir çıkış yolu arayışına girer.

Karakterin adı: Veys

Mekan: Mars'ta bir yer

Zaman: 2023

Veys: Karakterimiz eski MIT ajanı olup Politik nedenlerden dolayı görevden ihraç edilmiştir. Bunun üzerine psikolojisi bozulan karakterimiz, dünyanın ona dar geldiğini hissetmiştir ve edindiği bilgiler üzerine Mars'ta bir yaşam arayışına girer.

Simge ve Kısaltmalar:

İmage: Crosshair

Columns: Platform üstündeki kolonlar

Rocks: Kayalar

Player: Oyuncu

TriggerBox: Portallar ile etkilişime geçilmesi için kullanıldı

Global Volume: Post Processing/Rötüş

CheckGround: Zemin temas için kullanıldı

Laser: Lazer

Platforms: Başlangıç ve bitiş zeminleri

Spawners: Karakter, Levellerin ve Dronların ortaya çıkması için kullanıldı

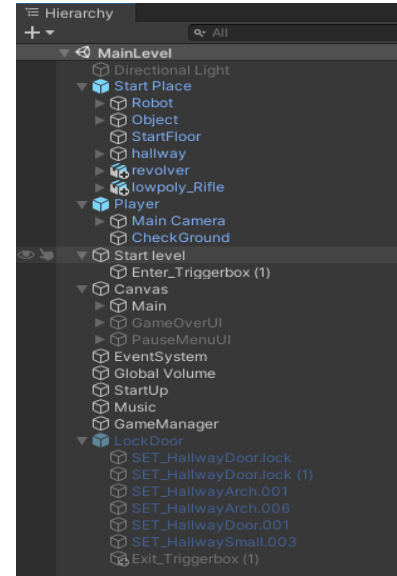
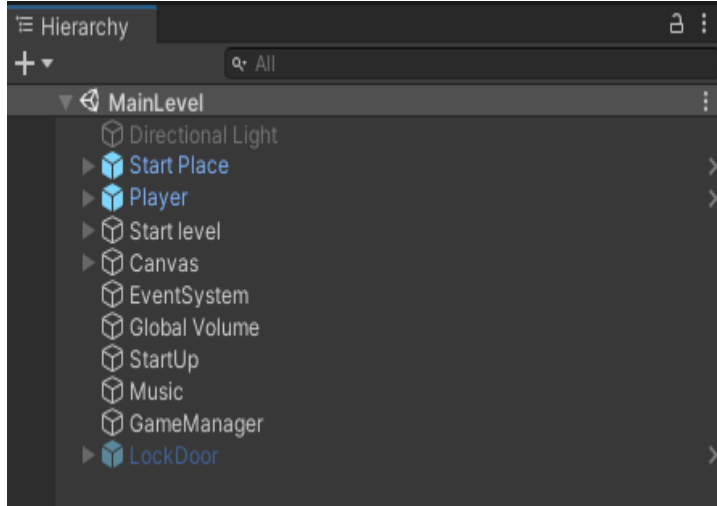
Lava: Lav, düştüğümüz yer

LockDoor: Levellere götüren kapımız.

PROJE YAPISI

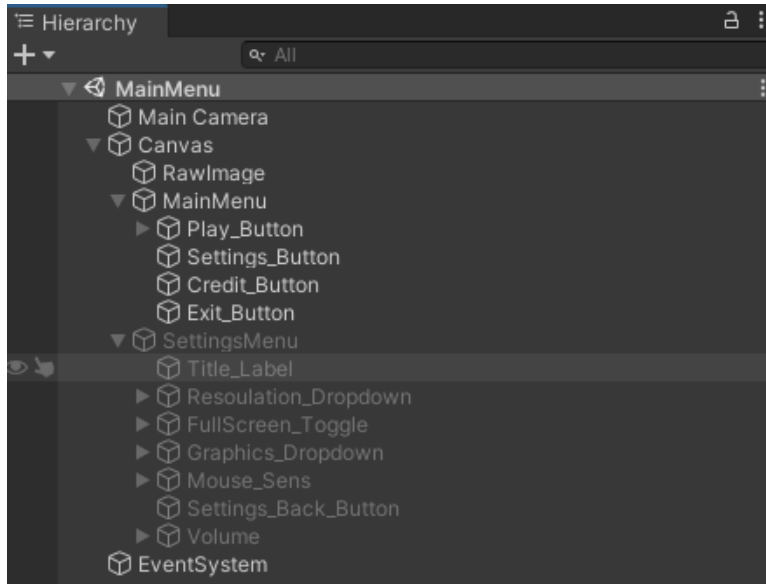
A.1 Main Level

A.1.1 Hiyerarşi Yapısı



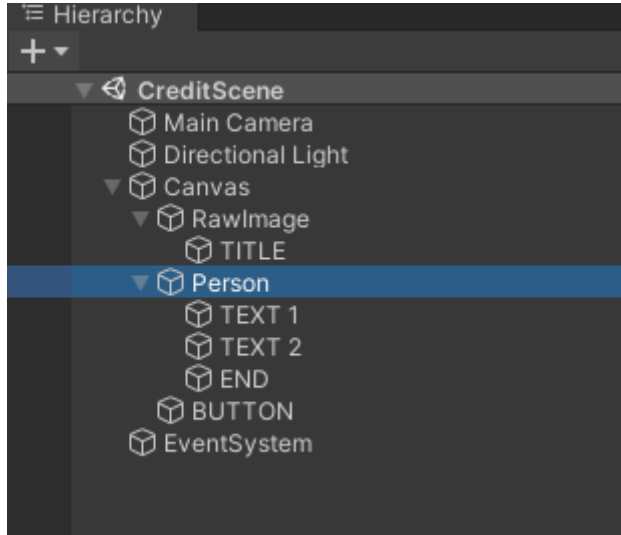
A.2 Main Menu

A.2.1 Hiyerarşi Yapısı

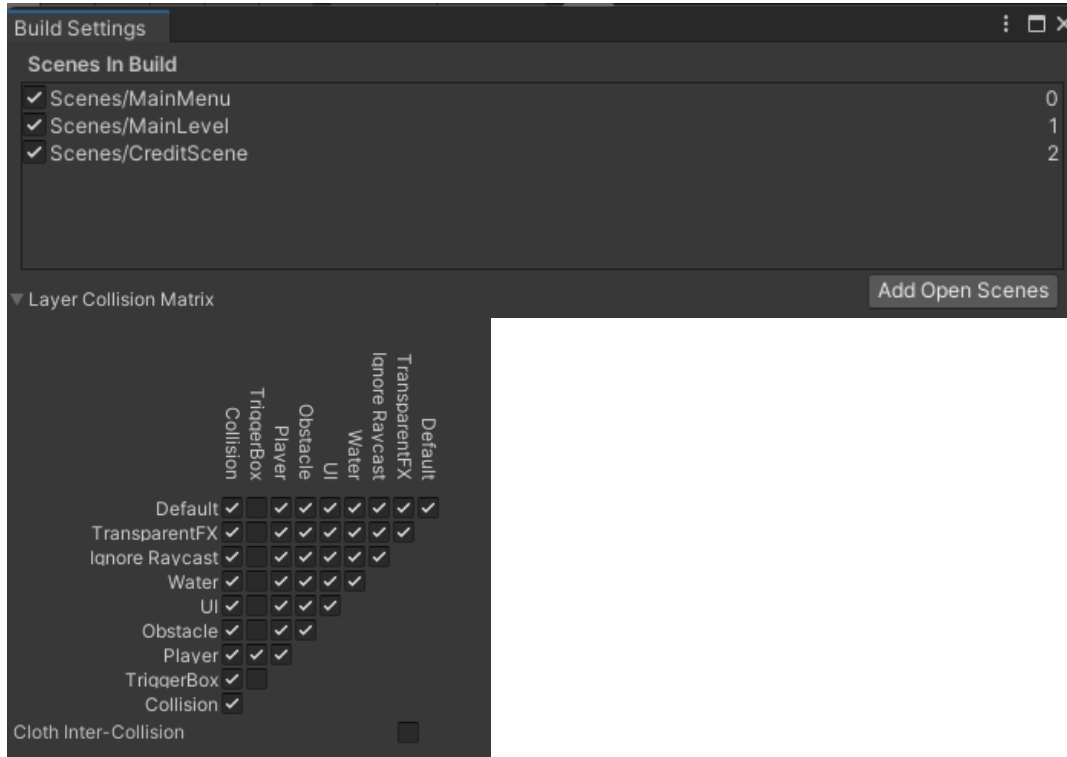


A.3 Credit Scene

A.3.1 Hiyerarşi Yapısı



Build yapısı ve Sahneler:



PROJEDE KULLANILAN ARAÇLAR

1.1 Visual Studio Code

Visual Studio Code, C# dosyalarını düzenlemek ve hata ayıklamak için Unity için harika bir yol arkadaşı olabilir. Tüm C# özellikleri ve daha fazlası desteklenir. 2019.2'den itibaren Visual Studio Code Editor paketinin kullanılması gerekmektedir. Unity'den komut dosyalarını açma ve oluşturma csproj ve sln oluşturulan dosyalar için yerleşik destek kaldırıldı.

1.2 Unity 2020.3.29f1

Unity, öncelikli olarak bilgisayarlar, konsollar ve mobil cihazlar için video oyunları ve simülasyonları geliştirmek için kullanılan ve Unity Technologies tarafından geliştirilen çapraz platform bir oyun motorudur.

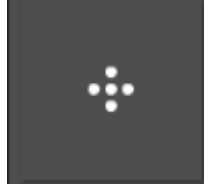
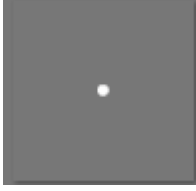
1.3 Github

GitHub, yazılım mühendisleri için önemli bir araç olarak kabul edilir ve popüleritesi rakipsizdir. Şu anda 25 milyondan fazla kullanıcıyı barındırmaktadır. Bu, iş akışı ve işbirliği iyileştirmeleri için GitHub'a yönelen çok sayıda profesyonel anlamına gelir. Grup çalışmaları için en güzel platformlardan biridir.

1.4 Blender

Blender, özgür bir üç boyutlu modelleme ve canlandırma uygulamasıdır. Oyun içerisindeki çizimlerin hepsi blender aracılığı ile çizilmiştir.

3.1 Sprites



Oyuncunun hedef alabilmesi için nişangah kullanılmıştır.

Crosshair olarak tanımlanmıştır

3.2 Sounds

Kullanıcı atış yaptığında ateş efektinin yanında kullanılması üzerine “gunshot” adında ses dosyası kullanılmıştır. Assets bölümünde “Sounds” kısmından ve ek dosyalar içerisinde ulaşabilirsiniz.

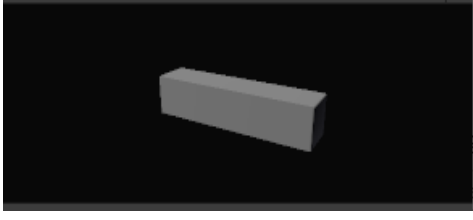
3.3 Meshs ve Prefabs

Blender ile çizilen objeler “.fbx” uzantısı olarak kaydedilip Assets kısmına atılmıştır.

Drone:

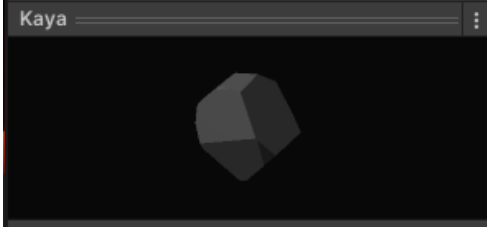


Column:



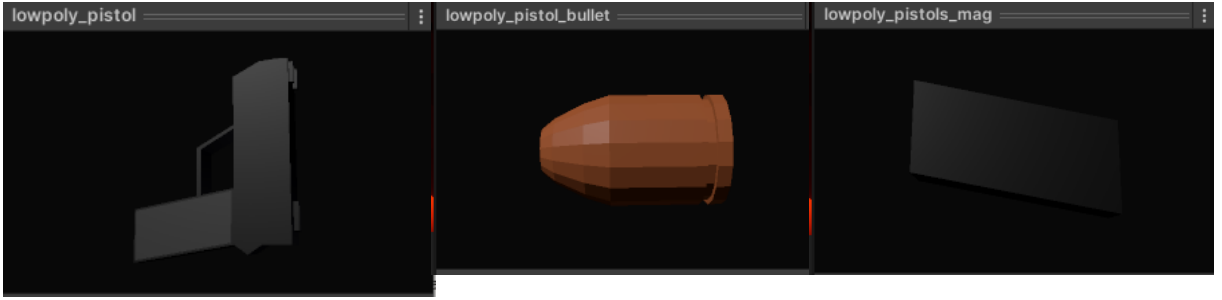
Kolon Blender programı ile çizilip oyun içerisinde yerleştirilmiştir. Lav üzerinde basamak olarak kullanıyoruz.

Kaya:



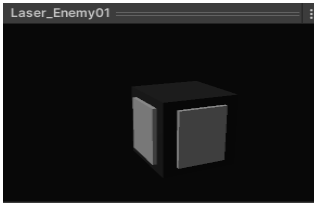
Kaya/Taş, Blender programı ile çizilip oyun içerisinde şekillendirilerek çoğaltılmıştır. Mağara tarzı labirentimizin dış katmanını oluşturuyor.

Pistol, Pistol Bullet, Pistol Mag:



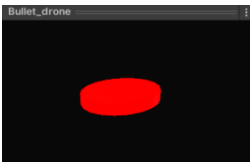
Kullanıcının kullandığı ekipmanlar ve mermisi.

Lazer:



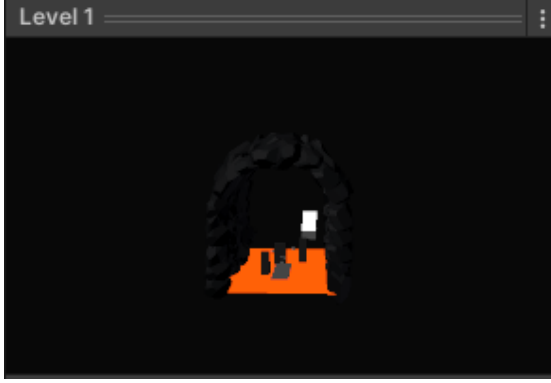
Oyun içerisindeki Lazer çıkaran küplerimiz.

Bullet Drone:

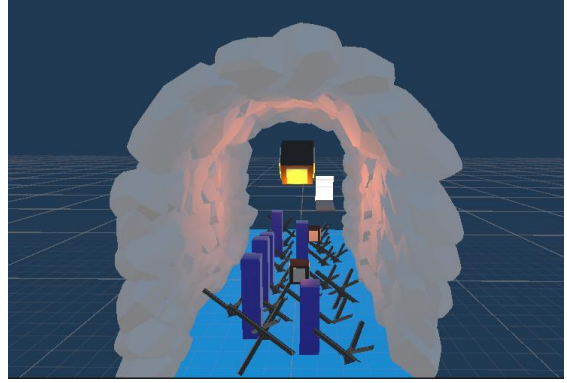


Dronların kullandığı mermi.

LEVEL 01:

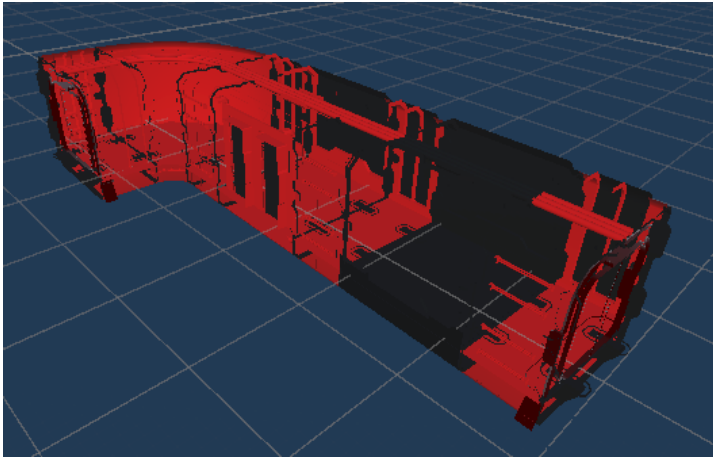


LEVEL 02:



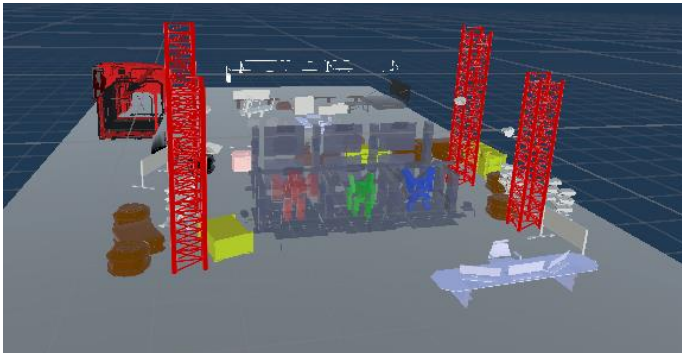
Level tasarımları 1.1-1.2 2.1.-2.2 Olarak gitmektedir her seviyede farklı zorluk ve tasarım vardır.

Hallway:



Başlangıç noktasında bulunan koridorumuz. Koridorun sonundaki gizli kapı bizi seviyeye taşımaktadır.

Başlangıç Noktamız:



Hem laboratuvar hem de başlangıç noktamız olarak kullanılan bölgenin tasarımı.

Lowpoly Rifle:

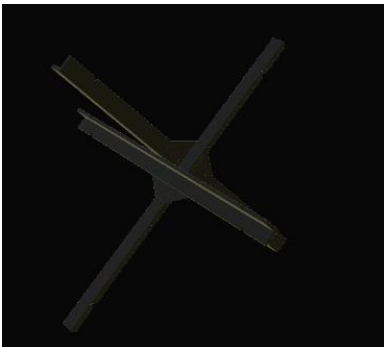
Oyun içerisinde ekipmanlarımız arasında bulunacak otomatik tüfeğimiz.

Lowpoly Revolver:

Oyun içerisinde isteğe bağlı olarak değiştirebileceğimiz diğer tabancamız.

LockDoor:

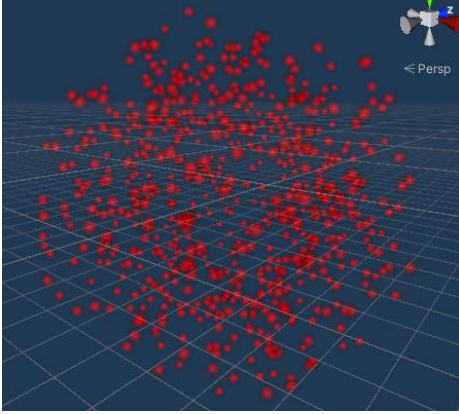
Bizi bölümlerimize götüren gizli geçit kapısı. Küçük bir animasyonla başlangıç noktasından Bölümün başlangıcına götürür.

TankTrap:

Level 2 de kullanılan tank tuzaklarımız.

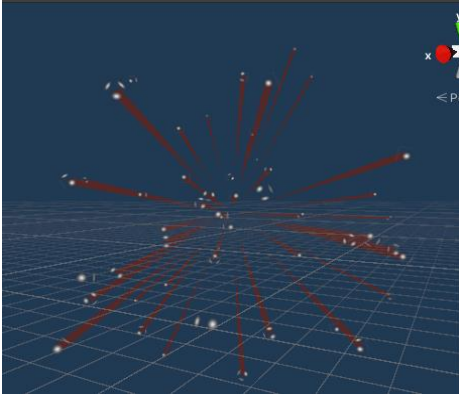
3.4 Particle

DeathEffect:



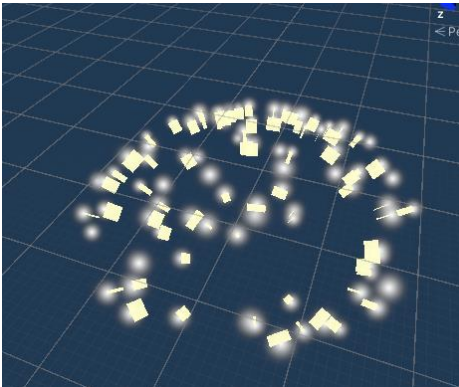
Karakterimiz öldüğünde ortaya çıkan efektimiz.

EnemyDestroy:



Düşman dronlar patladığında çıkan efekt. İçerisinde ek olarak trail-renderer bulundurur.

Hit_Effect:



Karakterimizin atışı herhangi bir nesneye çarptığında çıkan efekt. Ek olarak trails içerir.

3.5 Scripts

Bullets:

```
Assets > Scripts > Bullets > Bullet.cs
1 using System.Collections;
2 using System.Collections.Generic;
3 using UnityEngine;

4
5 0 references
6 public class Bullet : MonoBehaviour
7 {
8     1 reference
9     public float speed=10f;
10
11     1 reference
12     public float lifetime=5f;
13
14     1 reference
15     public bool enemy_bullet=false;
16
17     1 reference
18     public float enemy_bullet_radius=0.5f;
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20     1 reference
21     public LayerMask player_layer;
22
23     1 reference
24     public GameObject hit_effect;
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```

PlayerMovement:

```
PlayerMovement.cs
Assets > Scripts > PlayerMovement > PlayerMovement > Update()
1 using System.Collections;
2 using System.Collections.Generic;
3 using UnityEngine;
4
5 0 references
6 public class PlayerMovement : MonoBehaviour
7 {
8     //Movement
9     3 references
10     private CharacterController controller;
11     public float speed=1f;
12     //Camera controller
13     private float xRotation=0f; //mouse acisi ile max
14     2 references
15     public float mouseSens=100f;
16     //Jump gravity
17     3 references
18     private Vector3 velocity;
19     2 references
20     private float gravity = -10f;
21     3 references
22     private bool isGround;
23     1 reference
24     public float jumpSpeed=50;
25     1 reference
26     public float jump=10f;
27     1 reference
28     public Transform groundChecker; //ziplama kontrol
29     1 reference
30     public float groundCheckerRadius;
31     1 reference
32     public LayerMask obstacleLayer; //checkground kontrol
33     0 references
34     private void Awake(){
35         controller = GetComponent<CharacterController>();
36         //Cursor mouse iletici gizleme ve esitleme
37         Cursor.visible=false;
38         Cursor.lockState=CursorLockMode.Locked;
39     }
40     0 references
41     private void Update(){
42         //Check ground
43         isGround=Physics.CheckSphere(groundChecker.position,groundCheckerRadius, obstacleLayer);
44         Vector3 moveInputs = Input.GetAxis("Horizontal")*transform.right + Input.GetAxis("Vertical")*transform.forward;
45         Vector3 moveVelocity=moveInputs * Time.deltaTime * speed;
46         controller.Move(moveVelocity); //Alinon vekturun hareketi
47         //Camera Controller Mouse Hassasiyeti
48         transform.Rotate(0, Input.GetAxis("Mouse X")*Time.deltaTime*mouseSens,0);
49         xRotation -=Input.GetAxis("Mouse Y")*Time.deltaTime*mouseSens;
50         xRotation=Mathf.Clamp(xRotation,-90f,90f); //y aziminde max tur donmesi icin
51         Camera.main.transform.localRotation=Quaternion.Euler(xRotation,0,0);
52         // print(isGround);
53         //Jump / Gravity
54         if(!isGround){
55             velocity.y += gravity*Time.deltaTime; //asagi duserken hizlanmasi icin
56             speed =jumpSpeed;
57         }
58         else {
59             //velocity.y=-0.85f; yere sabiti kaldirdik.
60             speed=1;
61         }
62         if(Input.GetKeyDown(KeyCode.Space) && isGround){
63             //Bug fix
64             velocity.y=Mathf.Sqrt(jump * -2f * gravity/**Time.deltaTime/ ); //ziplama gucu
65             print("basarili");
66         }
67         controller.Move(velocity*Time.deltaTime);
68         //print(velocity);
69     }
70 }
```

Drone:

```
Drone.cs
Assets > Scripts > Drones > Drone > FollowPlayer()
1 1 reference
2 public class Drone : MonoBehaviour
3 {
4     4 references
5     private Transform player;
6     2 references
7     private float cooldown=1f;
8     2 references
9     public float speed =10f;
10    1 reference
11    public float follow_distance=10f;
12    1 reference
13    public Vector3 offset;
14    1 reference
15    public GameObject mesh;
16    1 reference
17    public GameObject bullet_drone;
18    1 reference
19    public Vector3 bullet_offset;
20    2 references
21    public float health=100f;
22    1 reference
23    public GameObject death_effect_drone;
24    0 references
25    private void Awake()
26    {
27        player=GameObject.FindWithTag("Player").transform;
28    }
29    1 reference
30    private void Update()
31    {
32        FollowPlayer();
33        Shot();
34        Death();
35    }
36    1 reference
37    private void FollowPlayer()
38    {
39        //Look to player
40        transform.LookAt(player.position);
41        transform.rotation*=Quaternion.Euler(offset);
42        //Move to player
43        if(Vector3.Distance(transform.position, player.position)>follow_distance)
44        {
45            transform.Translate(transform.forward*1*Time.deltaTime*speed);
46        }
47        else
48        {
49            transform.RotateAround(player.position,transform.forward,Time.deltaTime*speed*Random.Range(4f,3f));
50        }
51    }
52    1 reference
53    private void Shot()
54    {
55        if(cooldown>0){
56            cooldown-=Time.deltaTime;
57        }
58        else {
59            cooldown=1f;
60            //Shot
61            mesh.GetComponent<Animator>().SetTrigger("shot");
62            Instantiate(bullet_drone, transform.position,transform.rotation * Quaternion.Euler(bullet_offset));
63        }
64    }
65    1 reference
66    private void Death()
67    {
68        if(health>0){
69            //spawn particle drone
70            Instantiate(death_effect_drone,transform.position,Quaternion.identity);
71            Destroy(this.gameObject);
72        }
73    }
74 }
```

LevelManager:

```
LevelManager.cs
Assets > Scripts > LevelManager > LevelManager > SpawnLevel()
1 using System.Collections;
2 using System.Collections.Generic;
3 using UnityEngine;
4
5 2 references
6 public class LevelManager : MonoBehaviour
7 {
8     //Player level control
9     1 reference 12 references
10    public bool player_enter, player_exit;
11    //Drone Spawn
12    2 references
13    public Transform [] drone_spawners;
14    1 reference
15    public bool Spawned=false;
16    1 reference
17    public GameObject drone;
18    //Level Spawn
19    1 reference
20    public GameObject level;
21    3 references
22    public GameObject destroy_level;
23    0 references
24    private void Awake(){
25        player_enter=false;
26        Spawned=false;
27    }
28    0 references
29    private void Update(){
30        if(!Spawned)
31        {
32            if(player_enter)
33            {
34                //Drone Spawn
35                for(int i=0; i<drone_spawners.Length; i++)
36                {
37                    Instantiate(drone,drone_spawners[i].position,Quaternion.identity);
38                }
39                //Level Spawn
40                SpawnLevel();
41                Spawned=true;
42            }
43            //Destroy level
44            if(player_exit)
45            {
46                if(destroy_level!=null){
47                    DestroyLevel();
48                }
49            }
50        }
51    }
52    1 reference
53    private void SpawnLevel()
54    {
55        Vector3 pos=new Vector3(transform.position.x,transform.position.y,transform.position.z+175);
56        GameObject obj= Instantiate(level,pos, Quaternion.identity);
57        obj.GetComponent<LevelManager>().destroy_level=this.gameObject;
58    }
59    1 reference
60    private void DestroyLevel(){
61        Destroy(destroy_level);
62    }
63 }
```

LaserEnemy:

```
LaserEnemy.cs
Assets > Scripts > LaserEnemy > LaserEnemy > Update()
1 using System.Collections;
2 using System.Collections.Generic;
3 using UnityEngine;
4
5 0 references
6 public class LaserEnemy : MonoBehaviour
7 {
8     1 reference 1 reference
9     public LayerMask obstacle,player_layer;
10    4 references
11    RaycastHit hit;
12    0 references
13    public GameObject death_Effect;
14    3 references
15    private bool hit_laser;
16    2 references
17    public float range=100f;
18
19    0 references
20    void Update()
21    {
22        //Line Renderer
23        if(Physics.Raycast(transform.position, transform.forward, out hit, range, obstacle))
24        {
25            GetComponent<LineRenderer>().enabled=true;
26            hit_laser=true;
27            GetComponent<LineRenderer>().SetPosition(0, transform.position);
28            GetComponent<LineRenderer>().SetPosition(1, hit.point);
29
30            GetComponent<LineRenderer>().startWidth=0.1f + Mathf.Sin(Time.time)/60;
31            //Sin grafigine gore yariyadi 1,-1 arasindaki degeri icin time alindi
32        }
33        else{
34            GetComponent<LineRenderer>().enabled=false;
35            hit_laser=false;
36        }
37    }
38    //Kill Player
39    if(Physics.Raycast(transform.position, transform.forward, out hit, range, player_layer))
40    {
41        if(hit_laser)
42        {
43            hit.transform.gameObject.GetComponent<PlayerManager>().Death();
44        }
45    }
46 }
```

Column:

```
Column.cs X
Assets > Scripts > Column.cs > Column > Update()
1 using System.Collections;
2 using System.Collections.Generic;
3 using UnityEngine;
4
5 0 references
6 public class Column : MonoBehaviour
7 {
8     1 reference
9     public Transform checker;
10    1 reference
11    public LayerMask player_layer;
12    2 references
13    public float radius;
14
15    2 references
16    public Vector3 velocity;
17
18    2 references
19    private bool broke=false;
20
21    0 references
22    private void Update(){
23        17
24        if(Physics.CheckBox(checker.position, new Vector3(radius,2,radius), Quaternion.identity, player_layer)){
25            broke=true;
26            //print("basarili");
27        }
28
29        if(broke){ //Kirildiysa asagi dusmesi velocity=hiz
30            velocity.z-=Time.deltaTime/200;
31            transform.Translate(velocity);
32        }
33    }
34 }
```

Start-Up:

```
public class StartUp : MonoBehaviour
{
    public Slider MouseSensSlider;

    public void Awake(){
        //Set Mouse Sens Prefs
        GameObject.FindGameObjectWithTag("Player").GetComponent<PlayerMovement>().
        mouseSens=PlayerPrefs.GetFloat("MouseSensitivity",100);

        MouseSensSlider.value=PlayerPrefs.GetFloat("MouseSensitivity",100);
    }
}
```

Weapon Change-Hide:

```
if(Input.GetKeyDown(KeyCode.X) && pistolAktif){
    pistolFalse();
}
if(Input.GetKeyDown(KeyCode.C) && !pistolAktif){
    pistolTrue();
}

private void pistolFalse(){
    Debug.Log("Kapalı");
    pistol_hand.SetActive(false);
    pistolAktif=false;
}
private void pistolTrue(){
    Debug.Log("Açık");
    pistol_hand.SetActive(true);
    pistolAktif=true;
}
```

GameOver UI:

```
public class GameOverUI : MonoBehaviour
{
    public void Restart_Button(){
        SceneManager.LoadScene("MainLevel");
    }

    public void MainMenu_Button(){
        SceneManager.LoadScene("MainMenu");
    }

    public void Exit_Button(){
        Application.Quit();
    }
}
```

MainMenu UI:

```
public class MainMenuUI : MonoBehaviour
{
    public void Start(){
        Time.timeScale=1;
    }
    public void Play_Main(){
        SceneManager.LoadScene("MainLevel");
        Time.timeScale=1;
    }

    public void Exit_Main(){
        Application.Quit();
    }
    public void Credit_Scene(){
        SceneManager.LoadScene("CreditScene");
    }
}
```

OpenMenu:

```
public class OpenMenu : MonoBehaviour
{
    public GameObject open_menu, close_menu;

    public void Menu(){
        open_menu.SetActive(true);
        close_menu.SetActive(false);
    }
}
```

Pause Menu:

```
public class PauseMenu : MonoBehaviour
{
    private bool isGamePaused=false;
    public GameObject pauseMenu_obj;
    public bool isGameOver=false;
    public GameObject player,pistol;
    public AudioSource music;

    public void Update (){
        if(Input.GetKeyDown(KeyCode.Escape)&&!isGameOver){
            if(!isGamePaused){
                PauseGame();
            }
            else{
                ResumeGame();
            }
        }
    }

    private void PauseGame(){
        Time.timeScale=0;

        //Pause music
        music.Pause();

        //Pause Menu
        pauseMenu_obj.SetActive(true);

        //SetCursor
        Cursor.visible=true;
        Cursor.lockState=CursorLockMode.None;

        //Disable PlayerMovement
        player.GetComponent<PlayerMovement>().enabled=false;
        pistol.GetComponent<WeaponControl>().enabled=false;
        isGamePaused=true;
    }

    private void ResumeGame(){
        Time.timeScale=1;
        music.UnPause();

        pauseMenu_obj.SetActive(false);

        //SetCursor
        Cursor.visible=true;
        Cursor.lockState=CursorLockMode.Locked;

        //Enable PlayerMovement
        player.GetComponent<PlayerMovement>().enabled=true;
        pistol.GetComponent<WeaponControl>().enabled=true;

        //Pause Menu
        isGamePaused=false;
    }

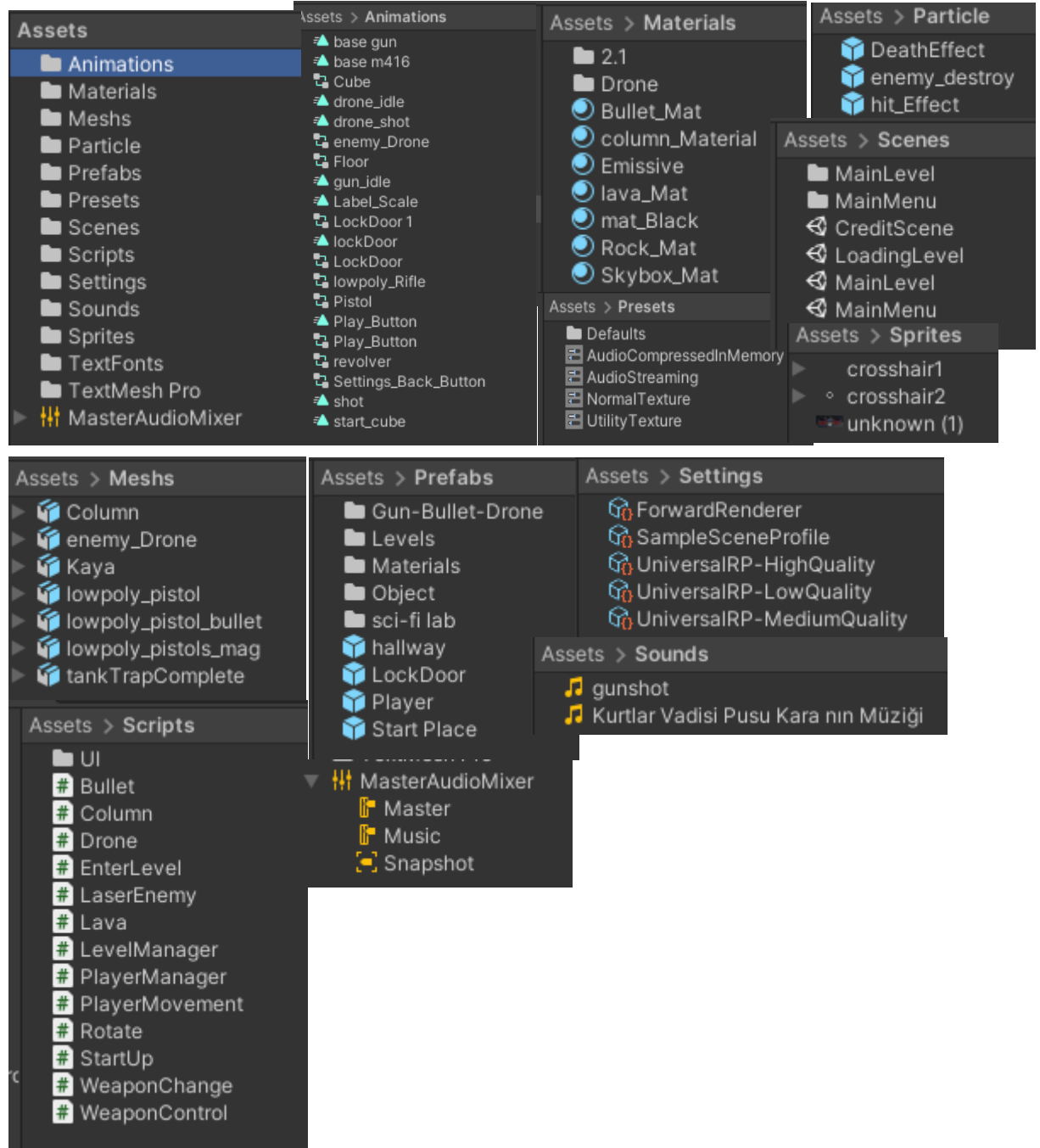
    public void ExitGame(){
        Application.Quit();
    }

    public void OpenMainMenu(){
        SceneManager.LoadScene("MainMenu");
    }
}
```

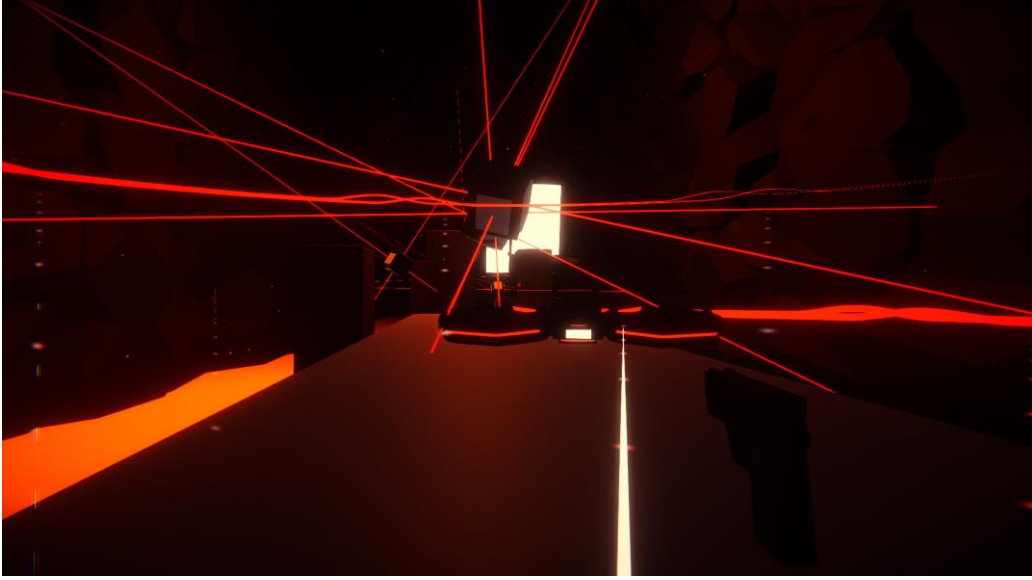
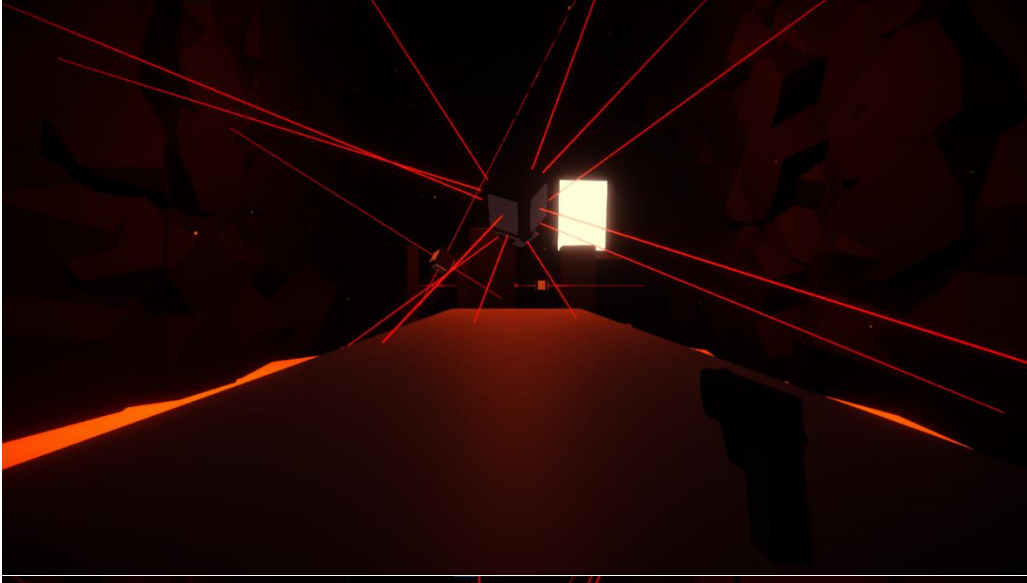
Settings Menu UI:

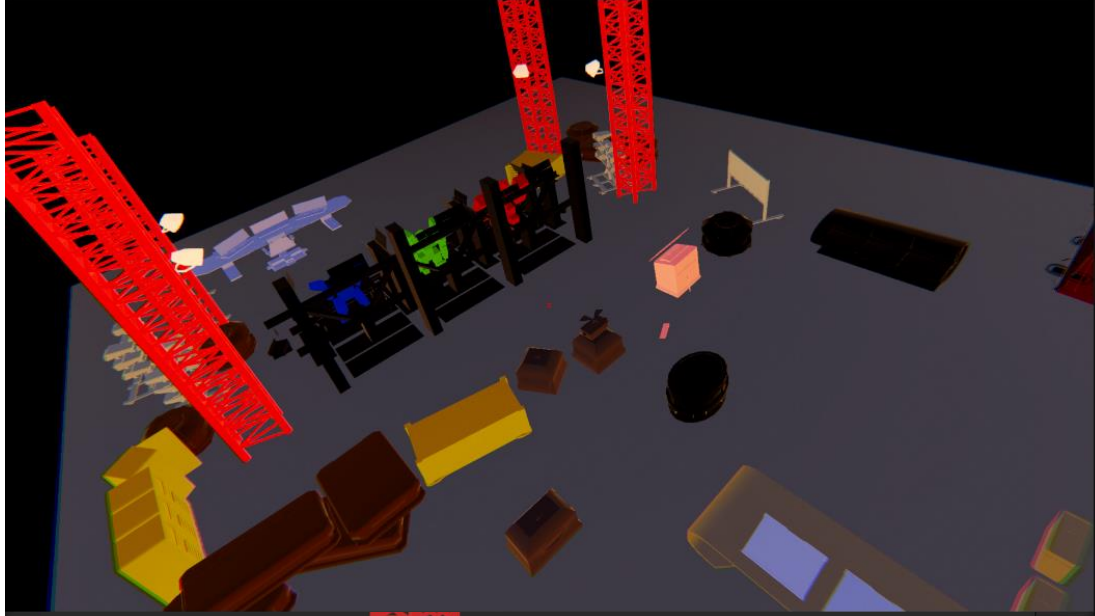
```
7 public class SettingsMenu : MonoBehaviour
8 {
9     public AudioManager audioMix;
10    private bool isFullScreen=true;
11
12    public void SetResolution(int index){
13        if(index==0){
14            Screen.SetResolution(1920,1080,isFullScreen);
15        }else if(index==1){
16            Screen.SetResolution(1280,1024,isFullScreen);
17        }else if(index==2){
18            Screen.SetResolution(1024,768,isFullScreen);
19        }else if(index==3){
20            Screen.SetResolution(800,600,isFullScreen);
21        }
22    }
23
24
25    public void SetQuality(int qualityIndex){
26        QualitySettings.SetQualityLevel(qualityIndex); //index numarasına göre kalite ayarlandı
27    }
28
29    public void SetFullScreen(bool fullScreen){
30        Screen.fullScreen=fullScreen;
31        isFullScreen=fullScreen;
32    }
33
34    public void SetMouseSensitivity(float value){
35        PlayerPrefs.SetFloat("MouseSensitivity",value);
36
37        if(GameObject.FindGameObjectWithTag("Player") !=null){
38            GameObject.FindGameObjectWithTag("Player").GetComponent<PlayerMovement>().mouseSens=value;
39        }
40    }
41
42    public void SetMasterVolume(float value){
43        audioMix.SetFloat("MasterVolume",value);
44    }
45
46    public void SetMusicVolume(float value){
47        audioMix.SetFloat("MusicVolume",value);
48    }
49 }
50
```

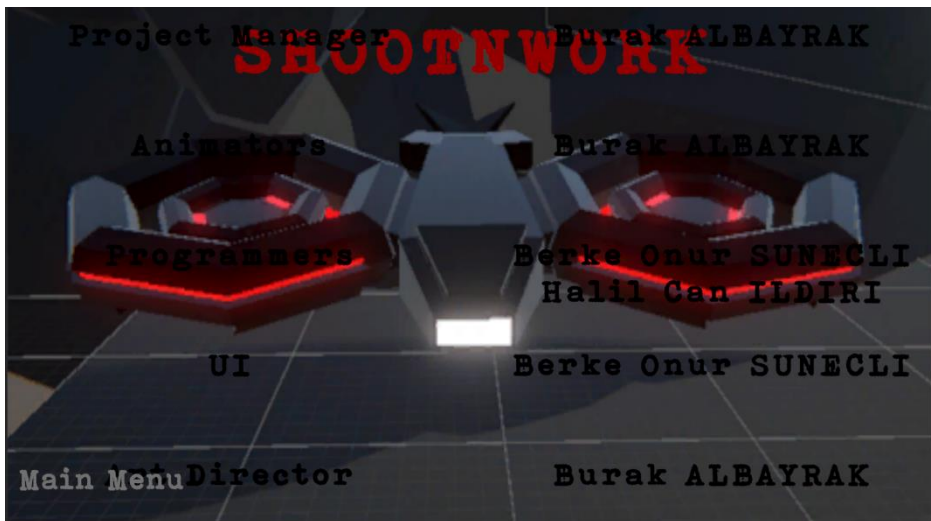
3.6 Assets Yapılandırılması

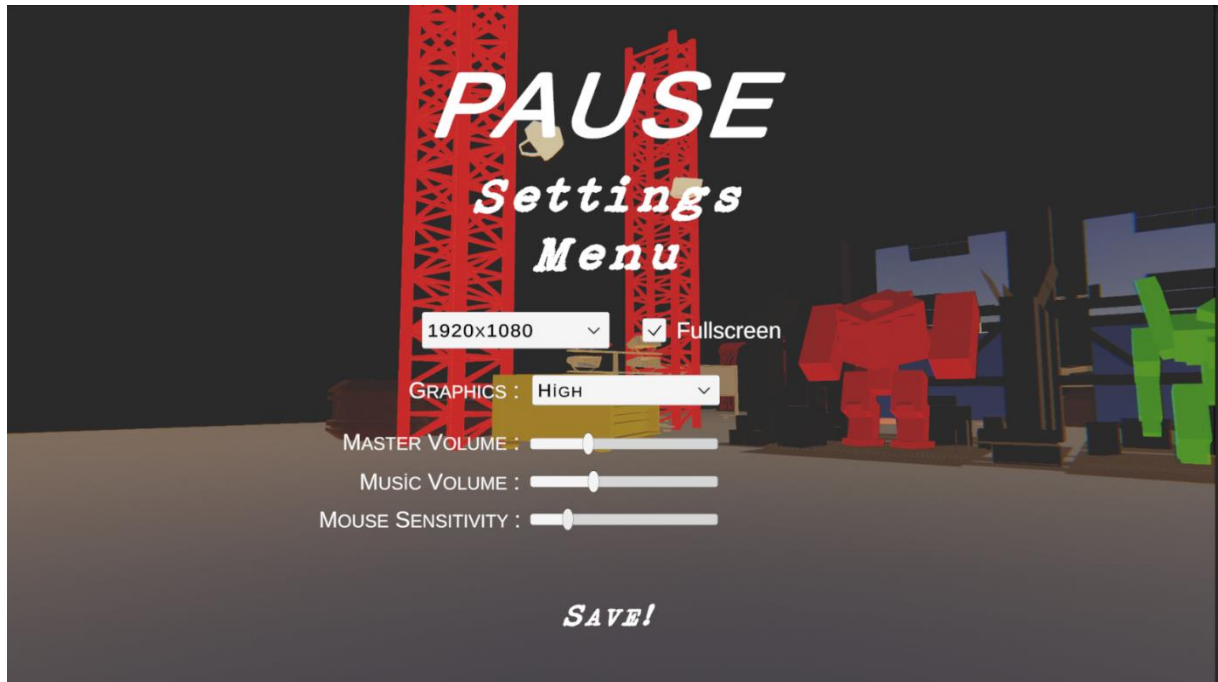


OYUN İÇİ GÖRSELLER









- [1] [Blender](#)
- [2] [Unity 2020.29f1](#)
- [3] <https://www.udemy.com/>
- [4] <https://www.kenney.nl/assets/crosshair-pack>
- [5*] https://drive.google.com/file/d/19-_ZevjXZQmJO9N6DH5hnMjZg0TSfT2q/view?usp=sharing
- [6**] https://drive.google.com/file/d/1T4fbs1NexUUgV_88niVM7_r8NnnPPzJh/view?usp=sharing
- [7***] https://drive.google.com/drive/folders/1h0YhAZZbhSzQeAYRh-xhb0hZqihjw_HJ?usp=sharing

Notlar:

*Oyunun Unity dosyalarını bağlantıdan indirebilirsiniz.

**Oyunun Demo versiyonunu bağlantıdan indirip test edebilirsiniz.

***Oyunun hızlandırılmış demo-yapım videosunu inceleyebilirsiniz.

**Oyun planlanan proje çizelgesine göre bitmiş olup testlerden
%82 başarı ile geçmiştir.**