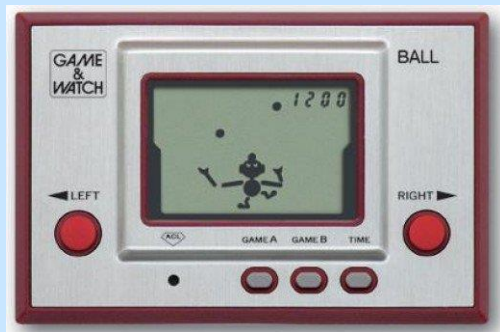


미니 게임 제작



**DELICIOUS
GAMES**

Mini Game Project



프로젝트 생성

Unity 2017.1.0f3

Projects Learn

NEW OPEN MY ACCOUNT

Project name*

MiniGame

Location*

C:\Users\tinywolf\Documents

Organization*

tinywolf3

3D 2D

Add Asset Package

ON Enable Unity Analytics ?

Cancel Create project

1

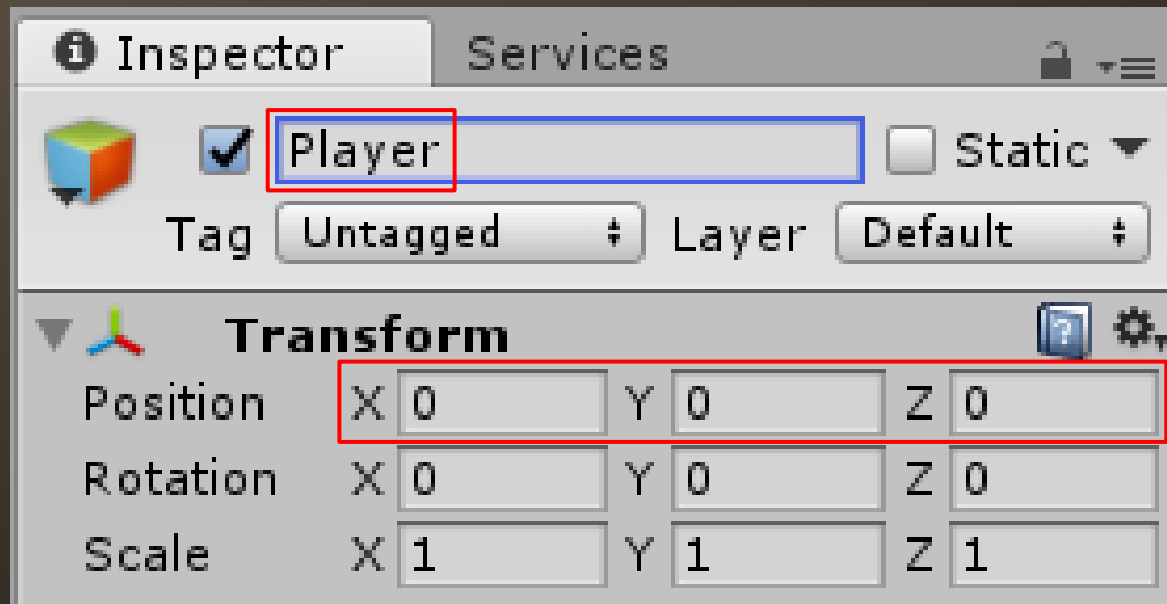
2

3



오브젝트 추가

1. GameObject > 3D Object > Cube



장애물



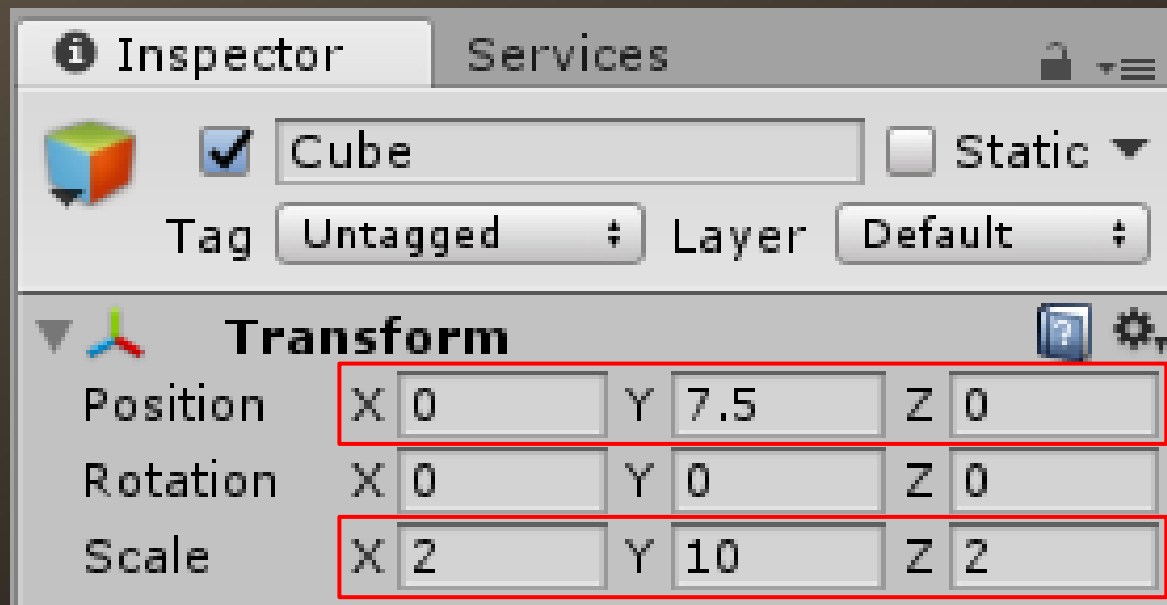
DELICIOUS
GAMES

Obstacles



장애물 벽 추가

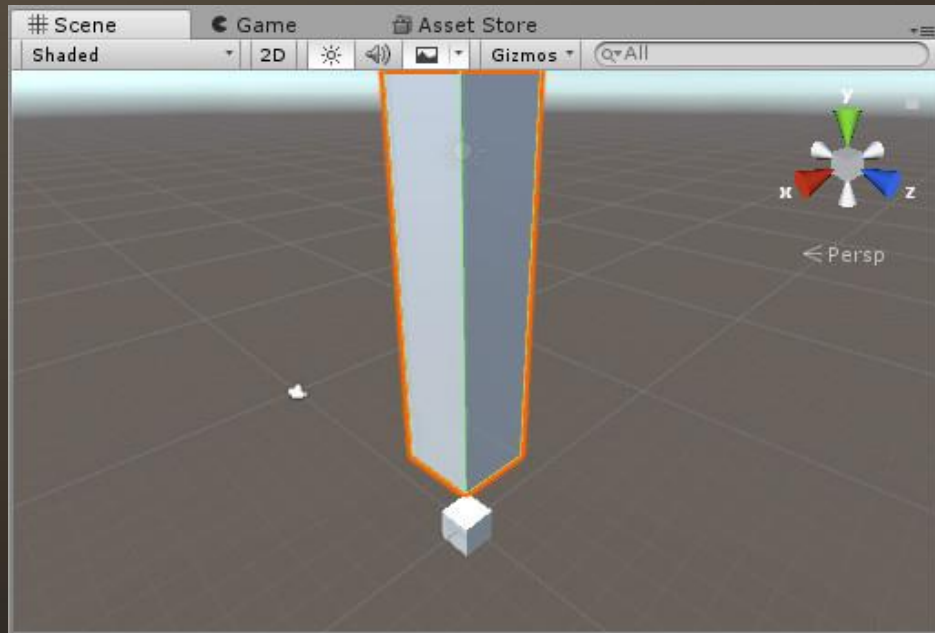
3. GameObject > 3D Object > Cube





장애물 벽 추가

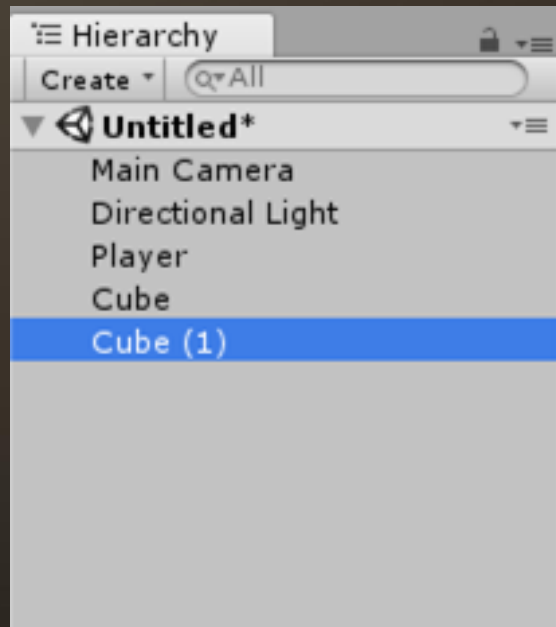
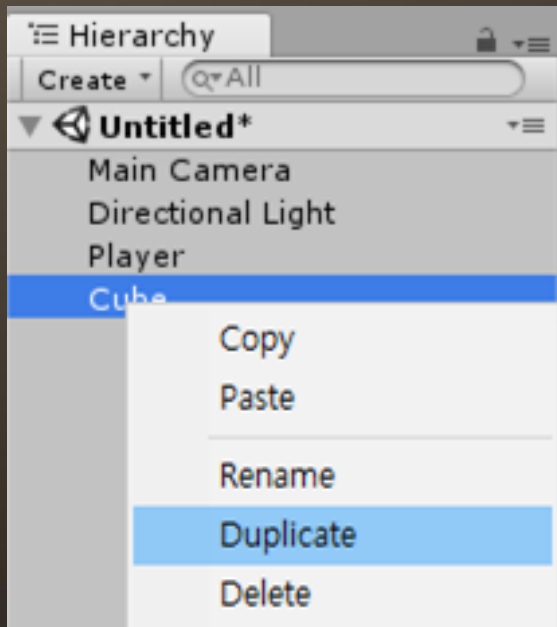
3. GameObject > 3D Object > Cube





벽 복제

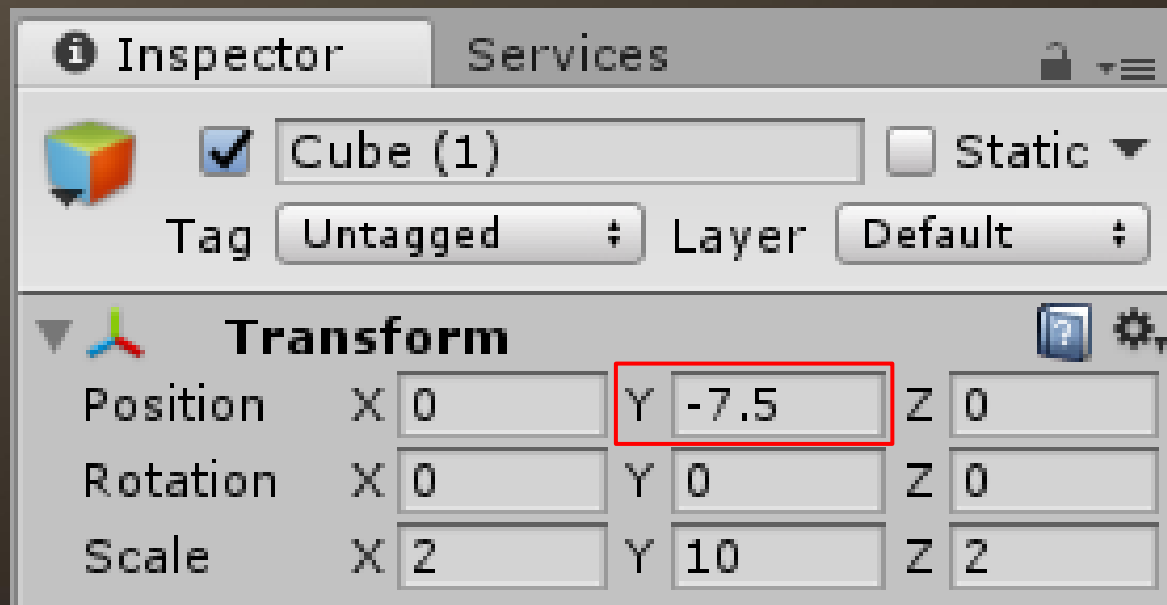
4. Cube > Duplicate





벽 배치

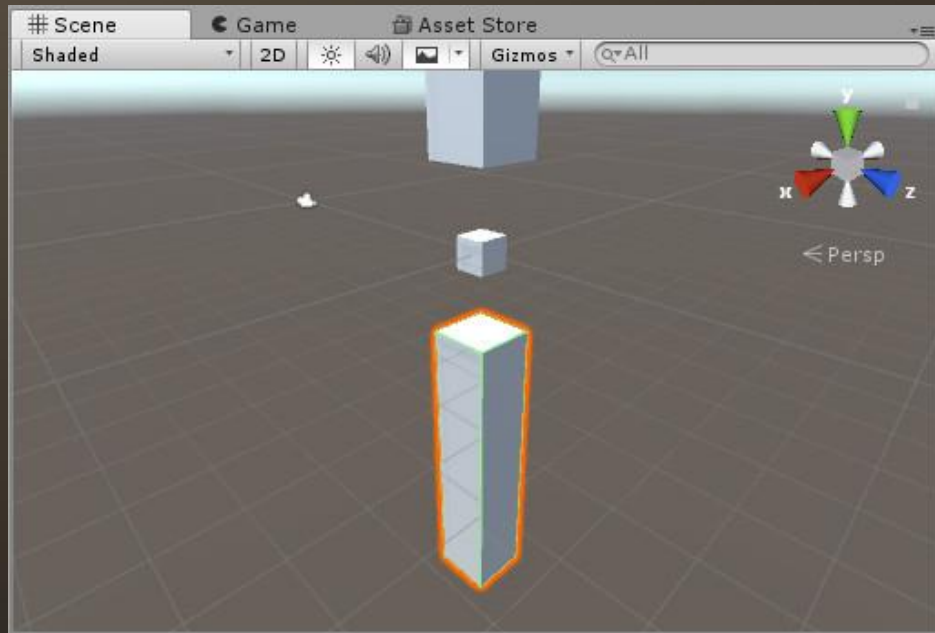
4. Cube > Duplicate





벽 배치

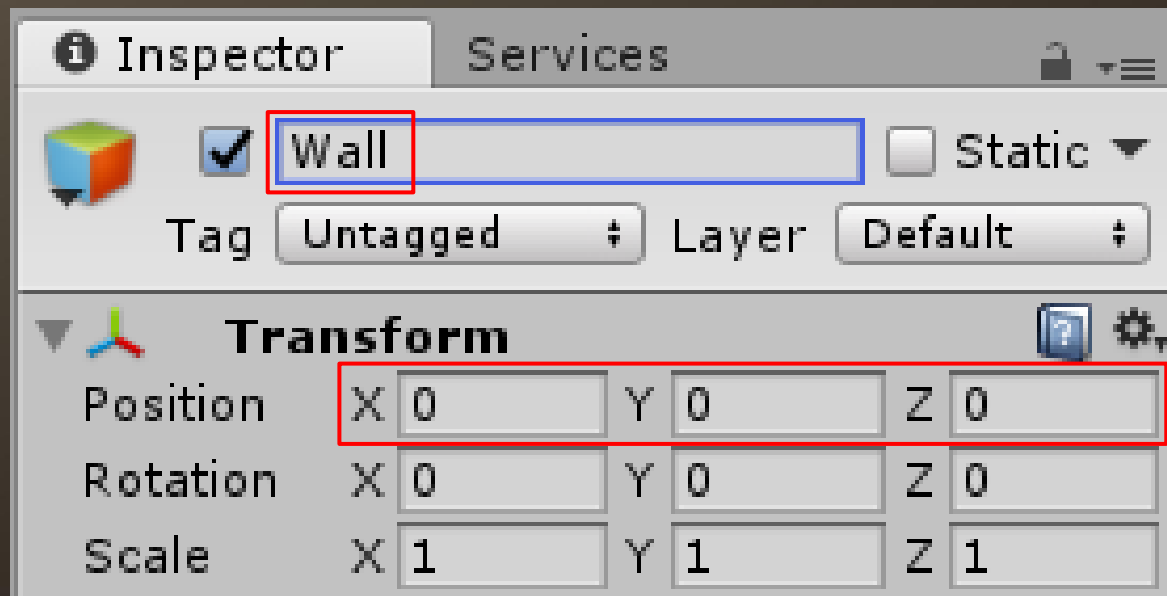
4. Cube > Duplicate





빈 오브젝트 추가

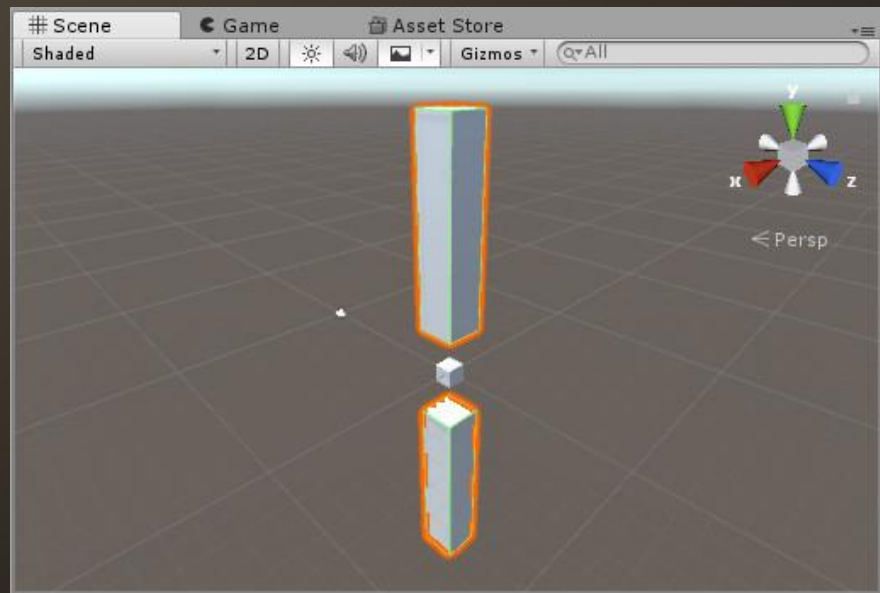
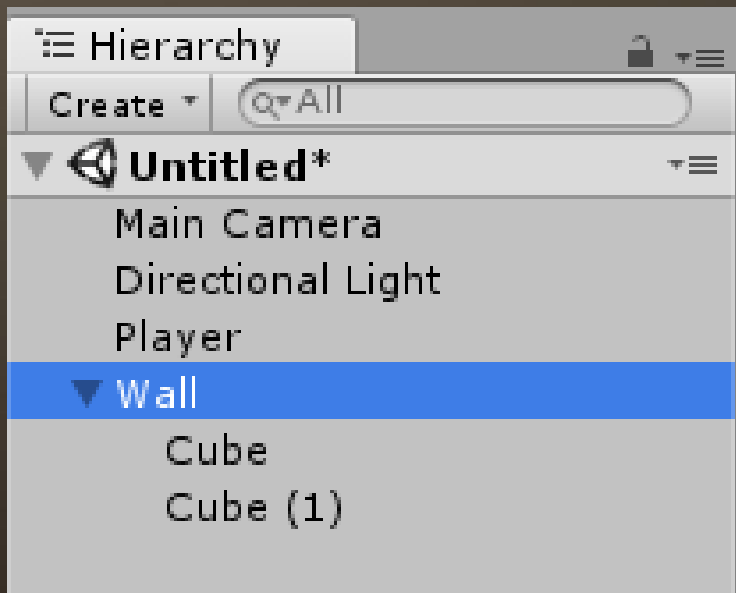
5. GameObject > Create Empty





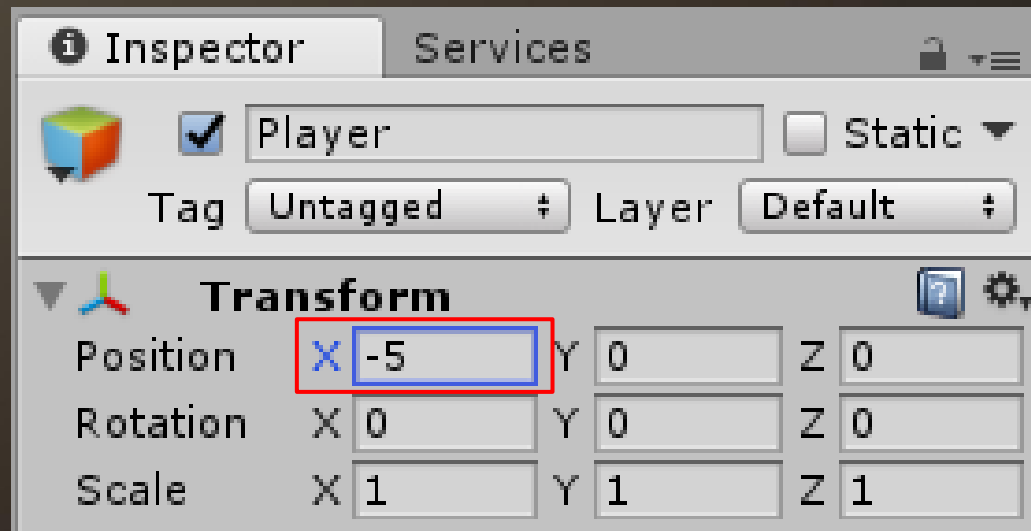
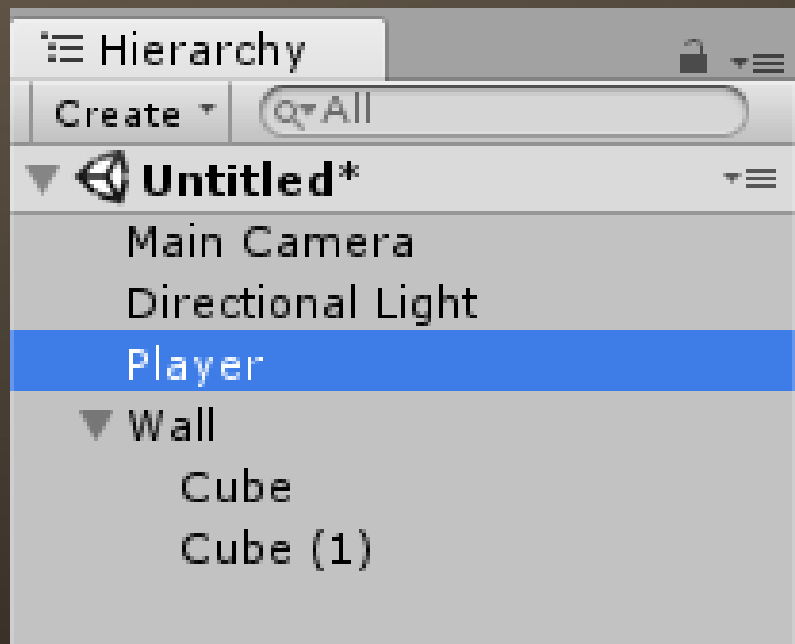
벽 오브젝트 조정

5. GameObject > Create Empty



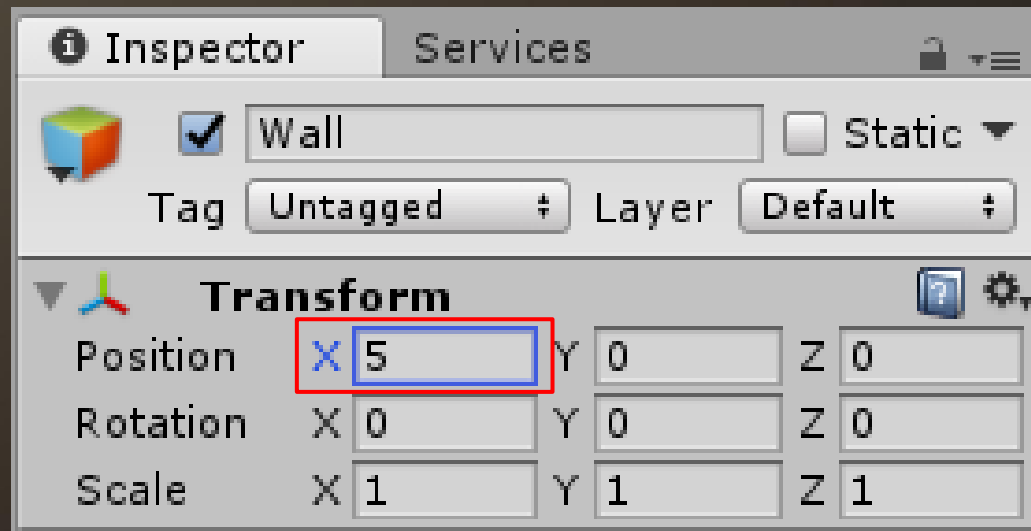
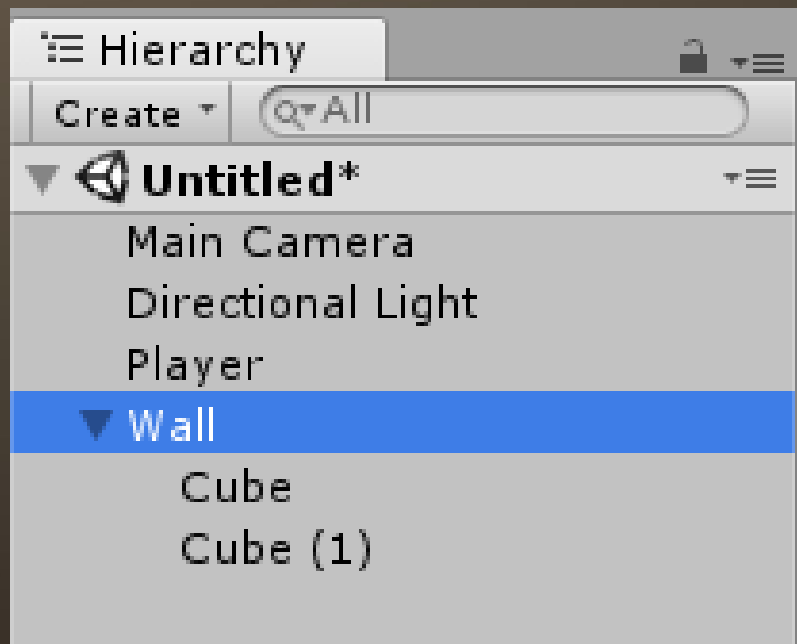


플레이어와 벽의 위치 조정



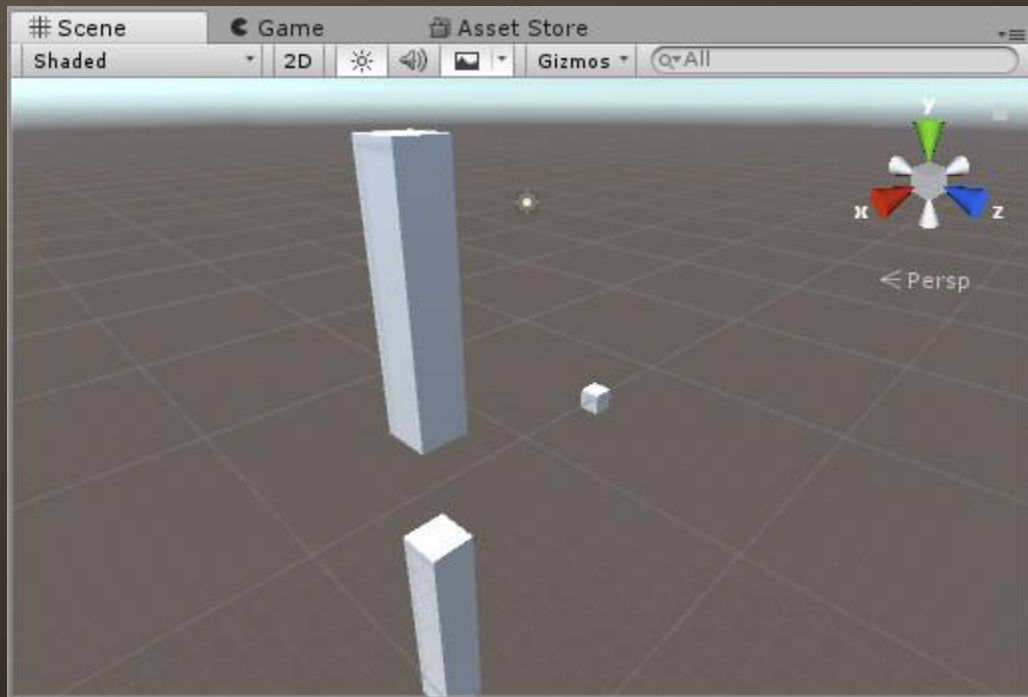


플레이어와 벽의 위치 조정



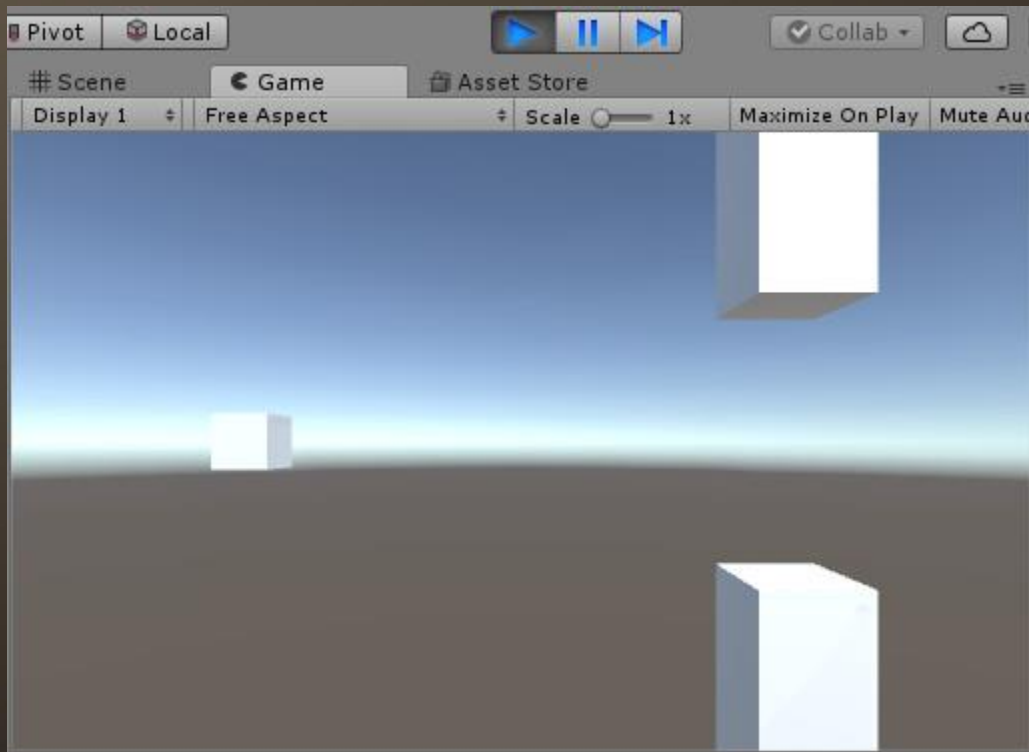


플레이어와 벽의 위치 조정



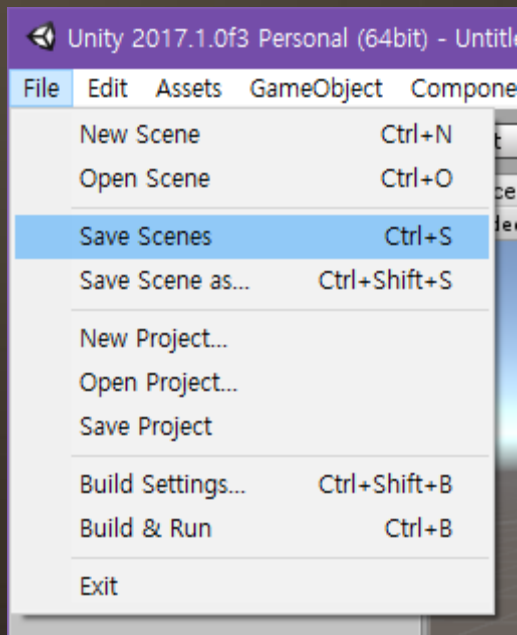


플레이



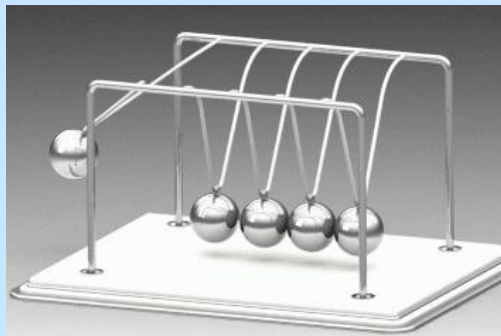


장면 저장



Menu: File > Save Scenes (Ctrl+S)

물리 현상

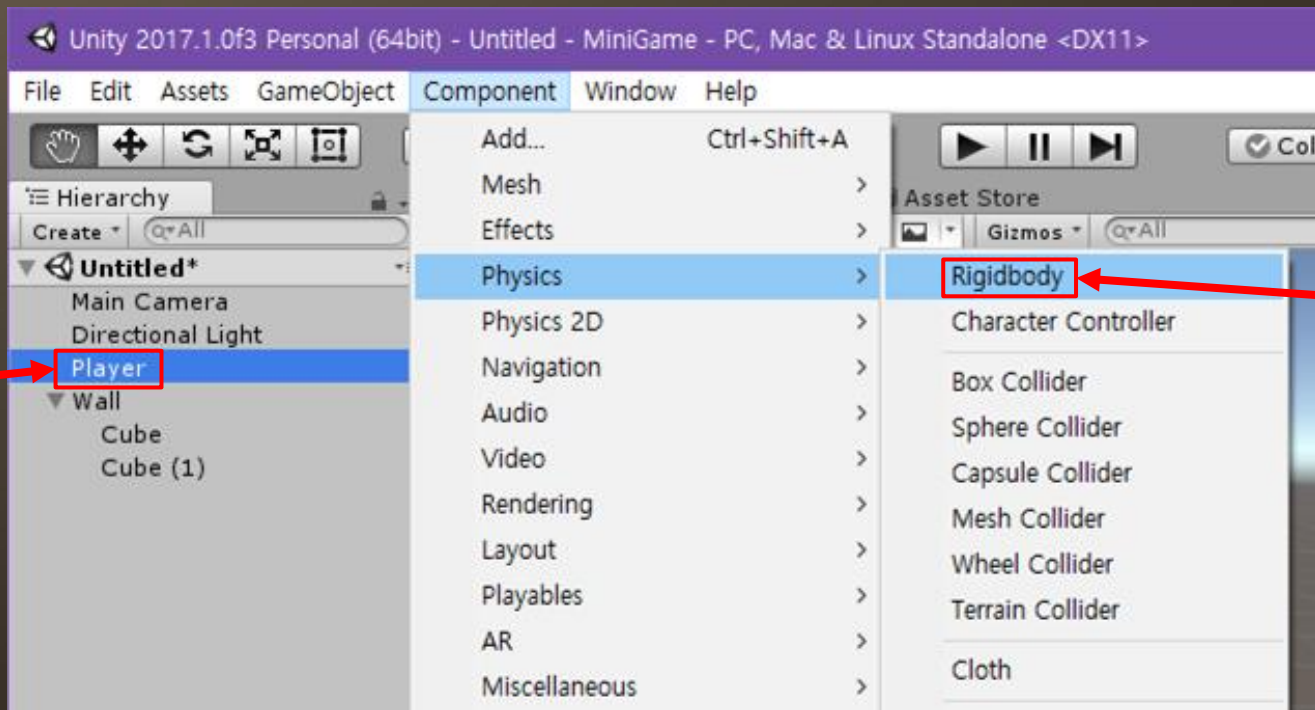


DELICIOUS
GAMES

Physics



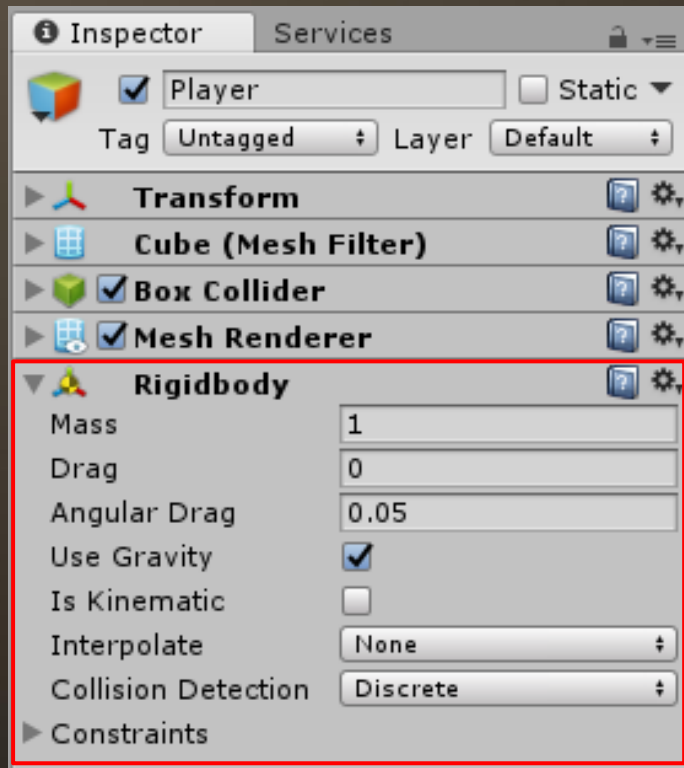
물체에 물리적 강체 요소 추가



Menu: Component > Physics > Rigidbody

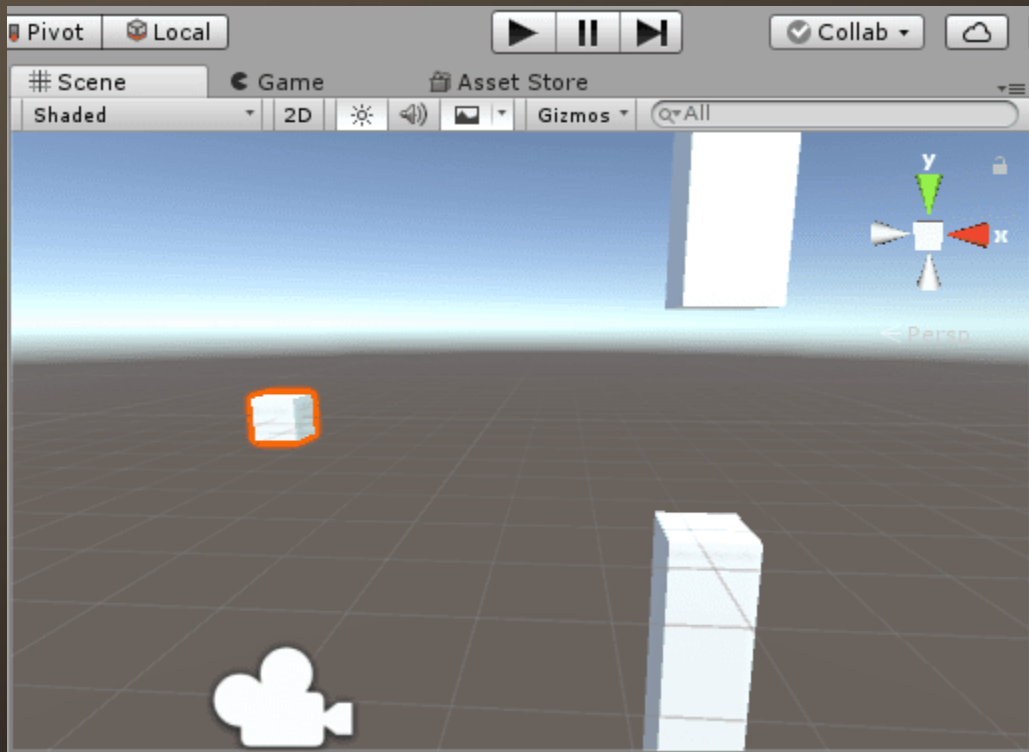


물체에 물리적 강체 요소 추가





플레이

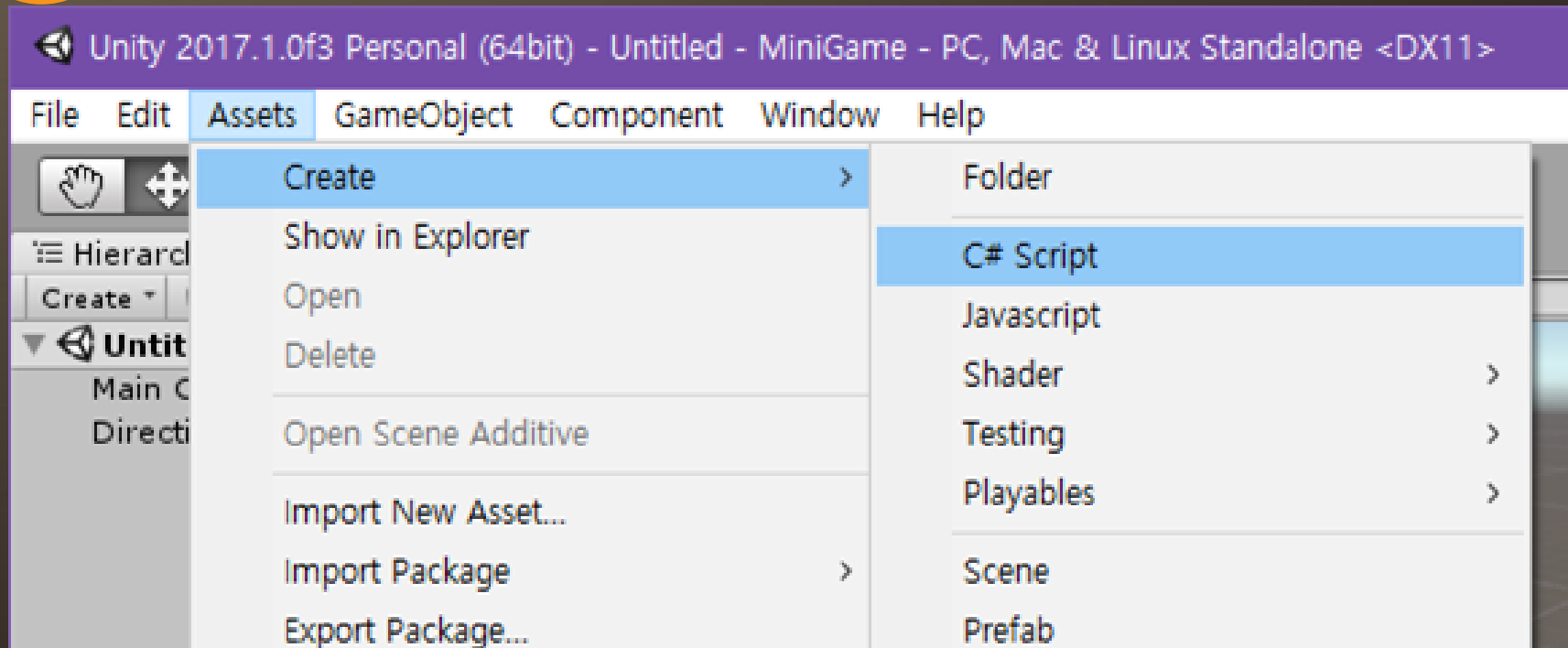


[illegible]

Scripts



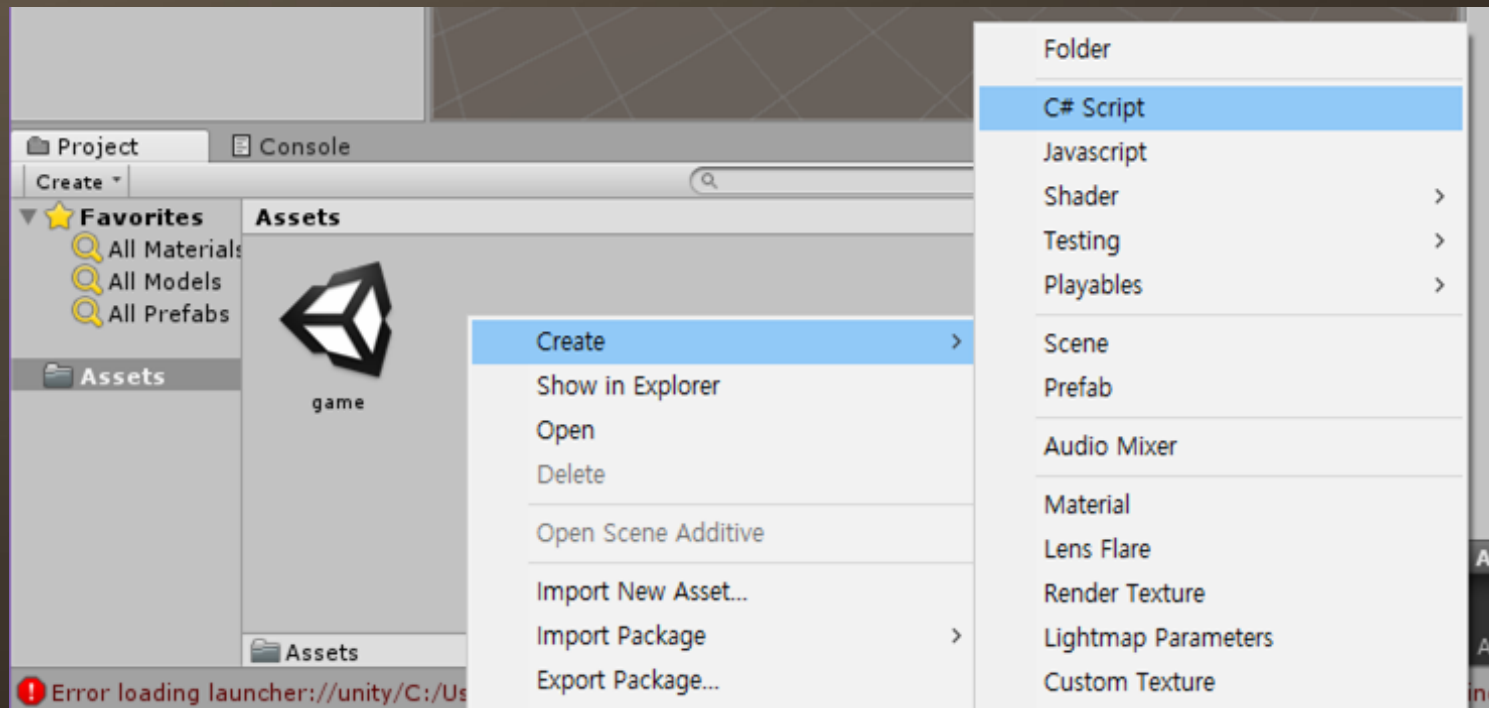
스크립트 추가



Menu: Assets > Create > C# Script



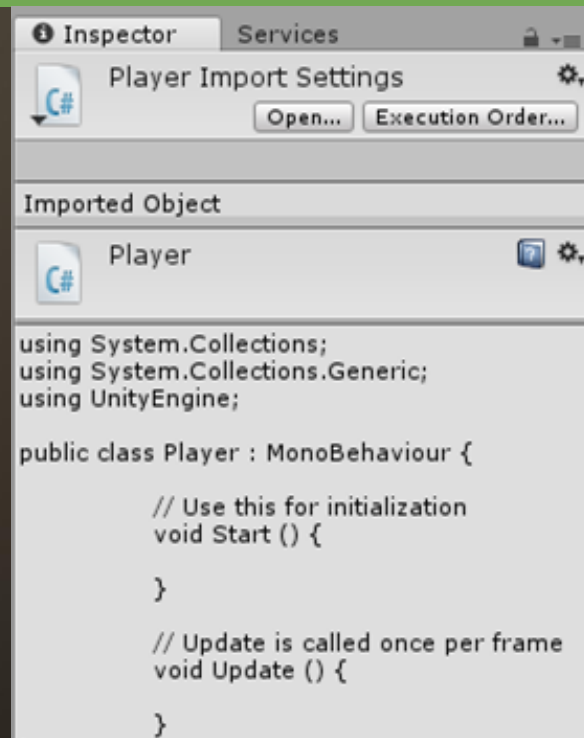
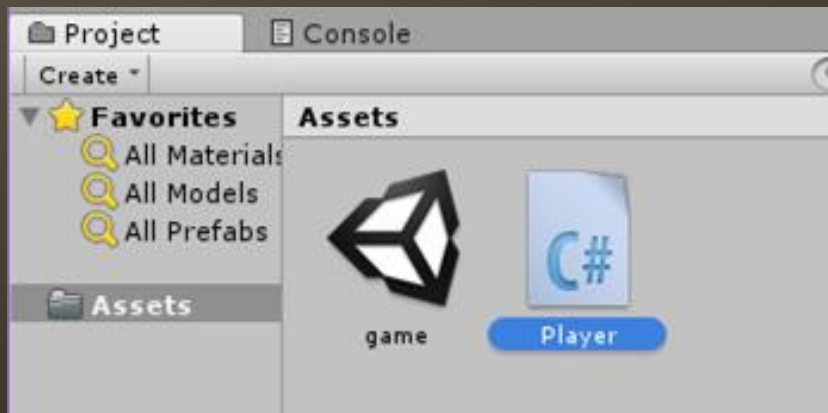
스크립트 추가



Menu: Assets > Create > C# Script



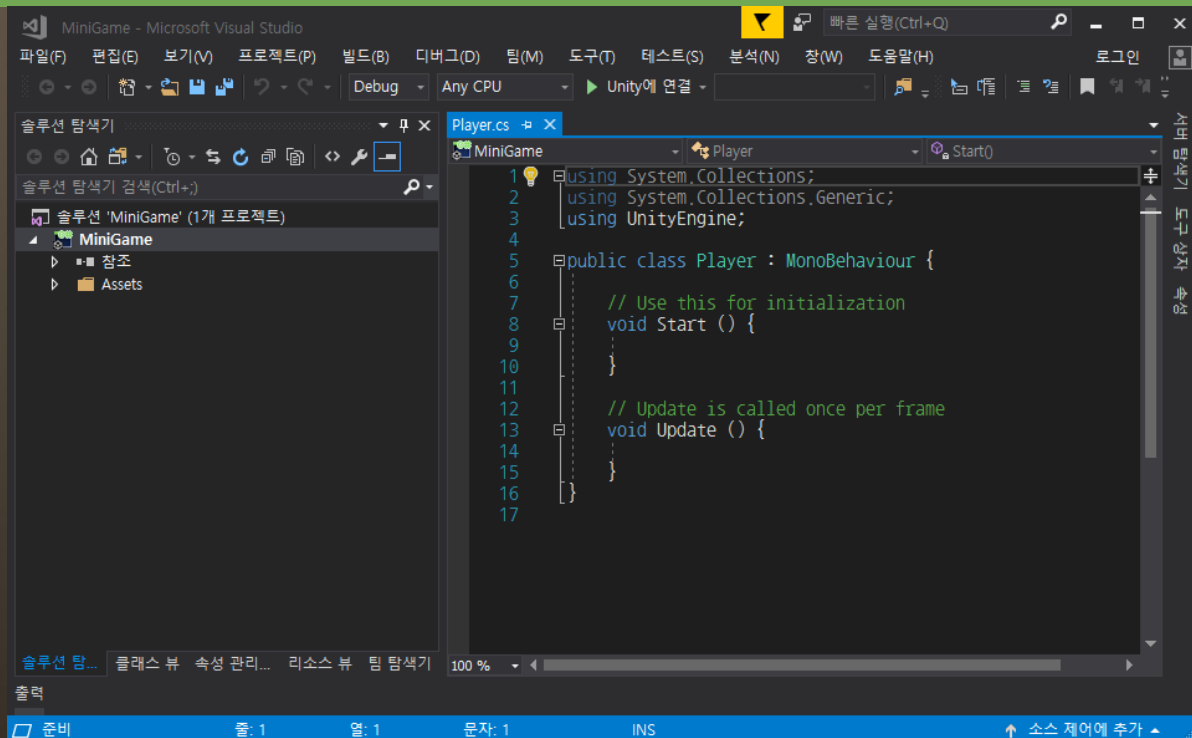
스크립트 추가



Class name: "Player"



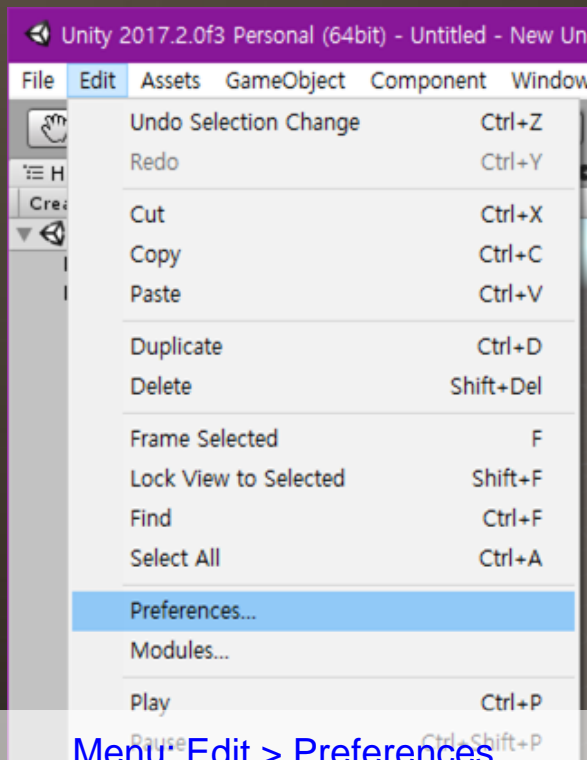
스크립트 편집



스크립트를 더블 클릭하면 비주얼 스튜디오 실행



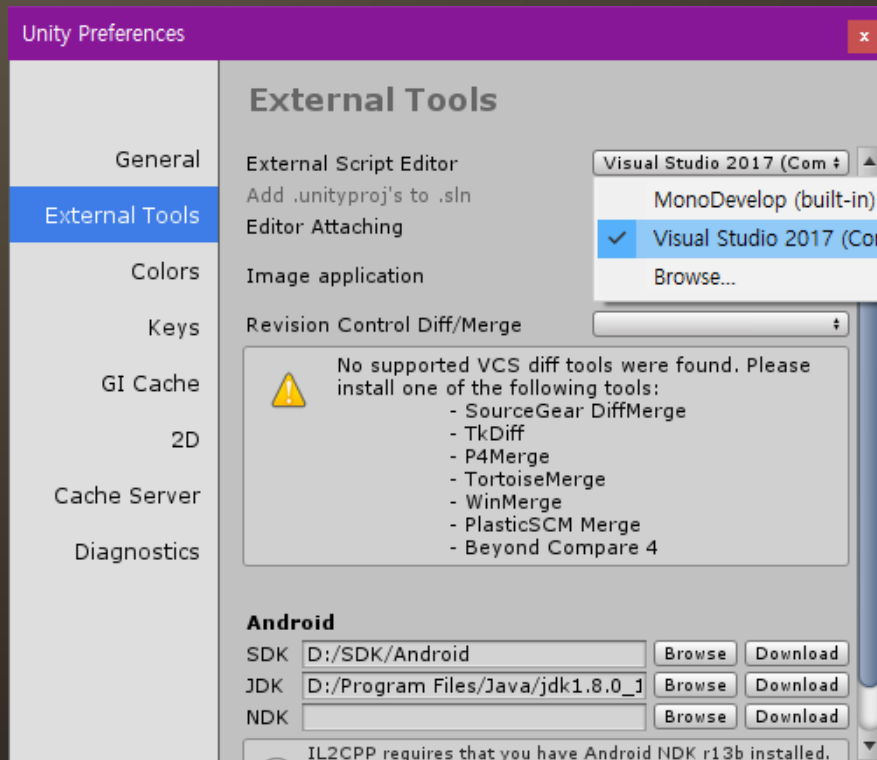
스크립트 편집기 선택



Menu: Edit > Preferences...



스크립트 편집기 선택



모노디벨롭과
비주얼스튜디오
둘 중 하나로 선택 가능



점프 기능 추가

Player.cs

MiniGame

Player

Update()

```
public class Player : MonoBehaviour {
```

```
    public float jumpPower = 5;
```

```
    // Use this for initialization
```

```
    void Start () {
```

```
    }
```

```
    // Update is called once per frame
```

```
    void Update () {
```

```
        if (Input.GetButtonDown("Jump"))
```

```
            GetComponent<Rigidbody>().velocity = new Vector3(0,
```

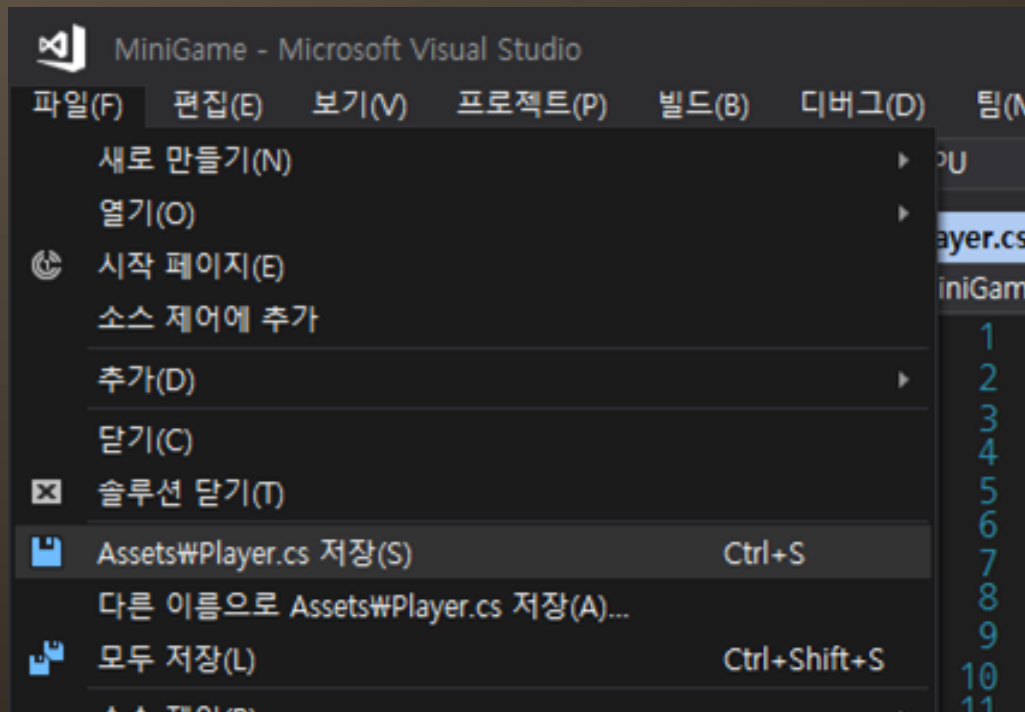
```
            jumpPower, 0);
```

```
    }
```

```
}
```



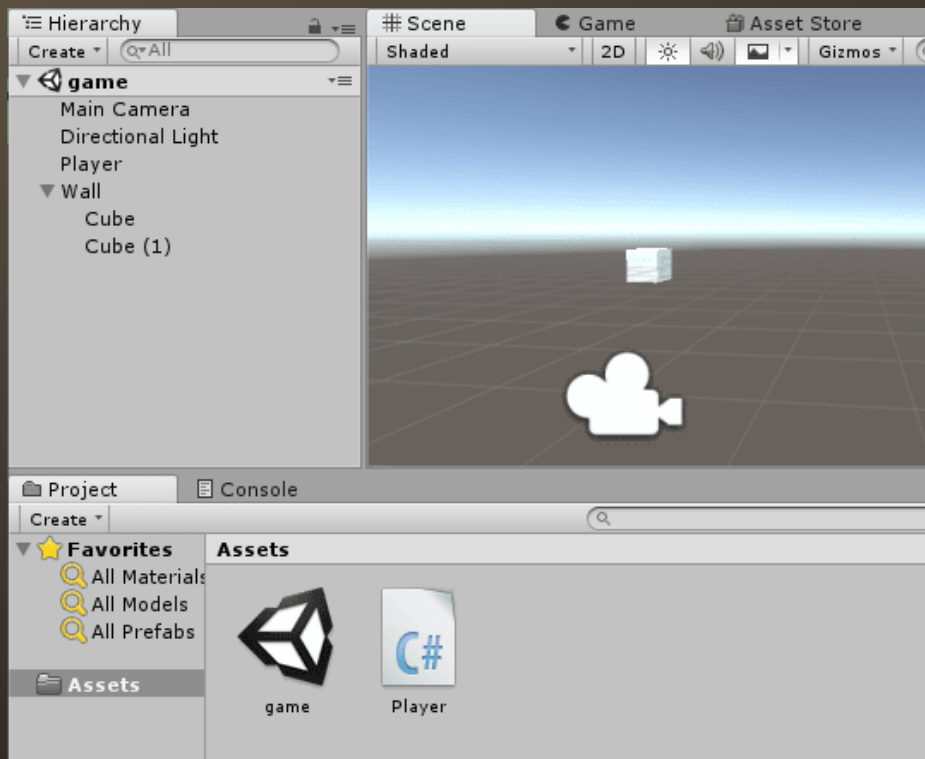
스크립트 저장



Menu: File > Save (Ctrl+S)

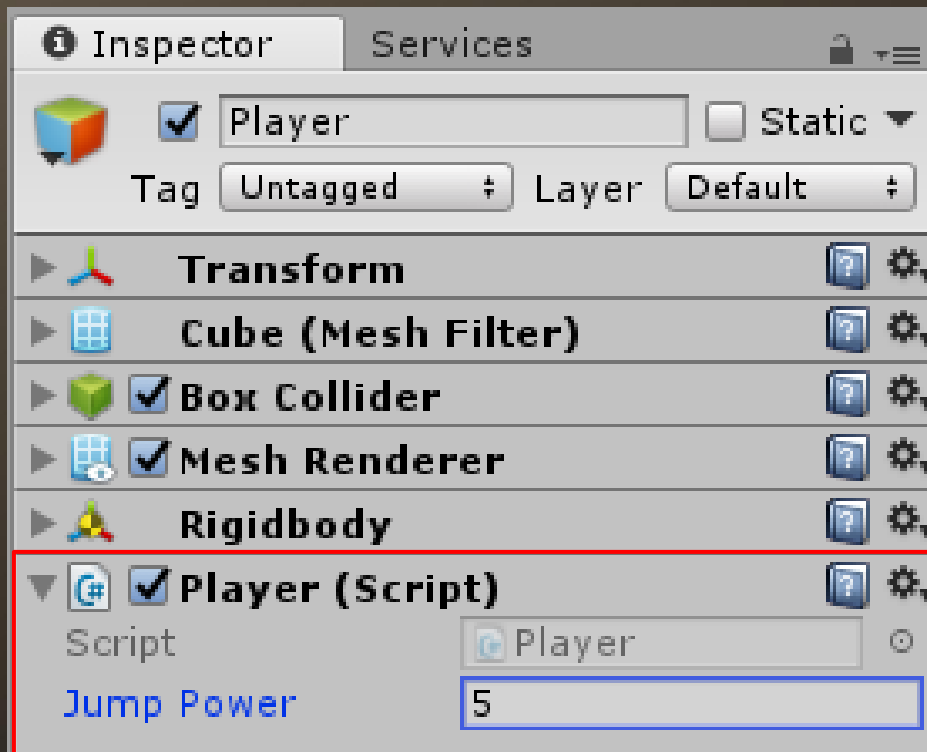


스크립트 연결



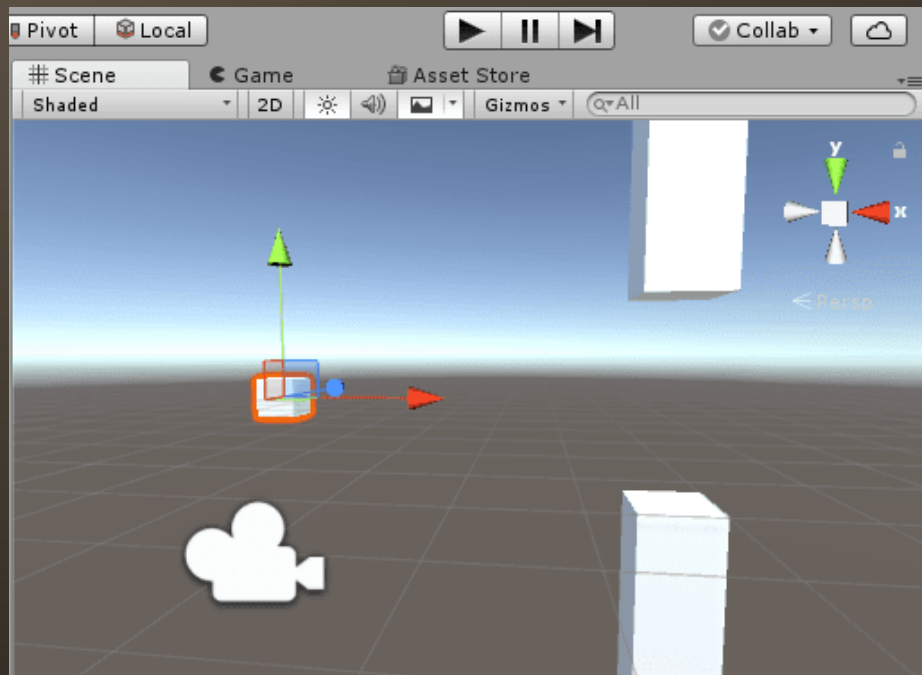


스크립트 연결





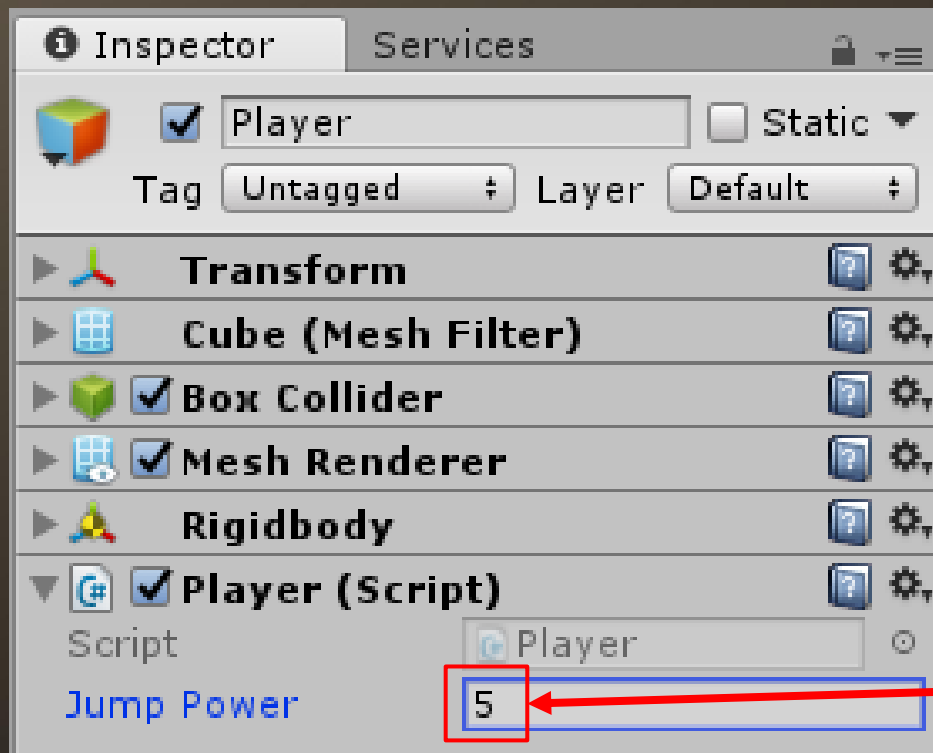
플레이



Space 키로 점프 확인



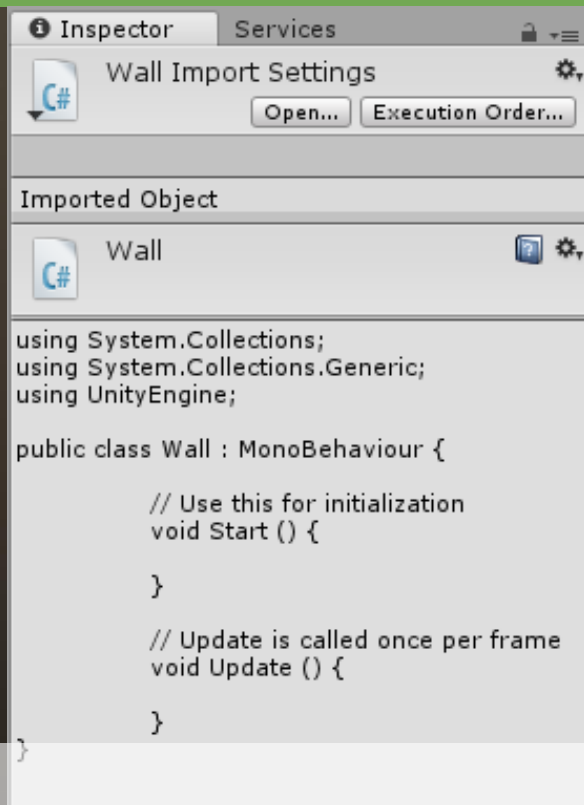
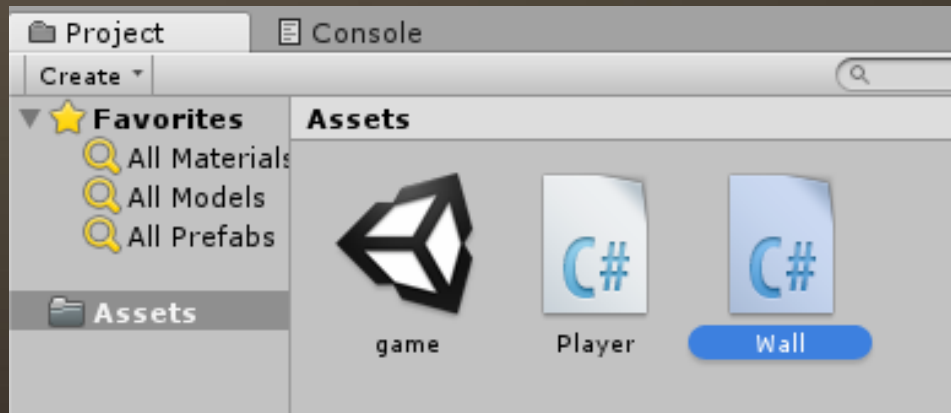
스크립트 연결



수치를 바꿔가며 확인



스크립트 추가



Class name: "Wall"



벽 이동 추가

```
public class Wall : MonoBehaviour {
```

```
    public float speed = -5;
```

```
    // Use this for initialization
```

```
    void Start () {
```

```
}
```

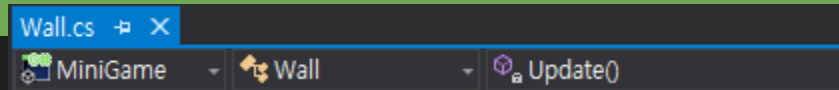
```
    // Update is called once per frame
```

```
    void Update () {
```

```
        transform.Translate(speed * Time.deltaTime, 0, 0);
```

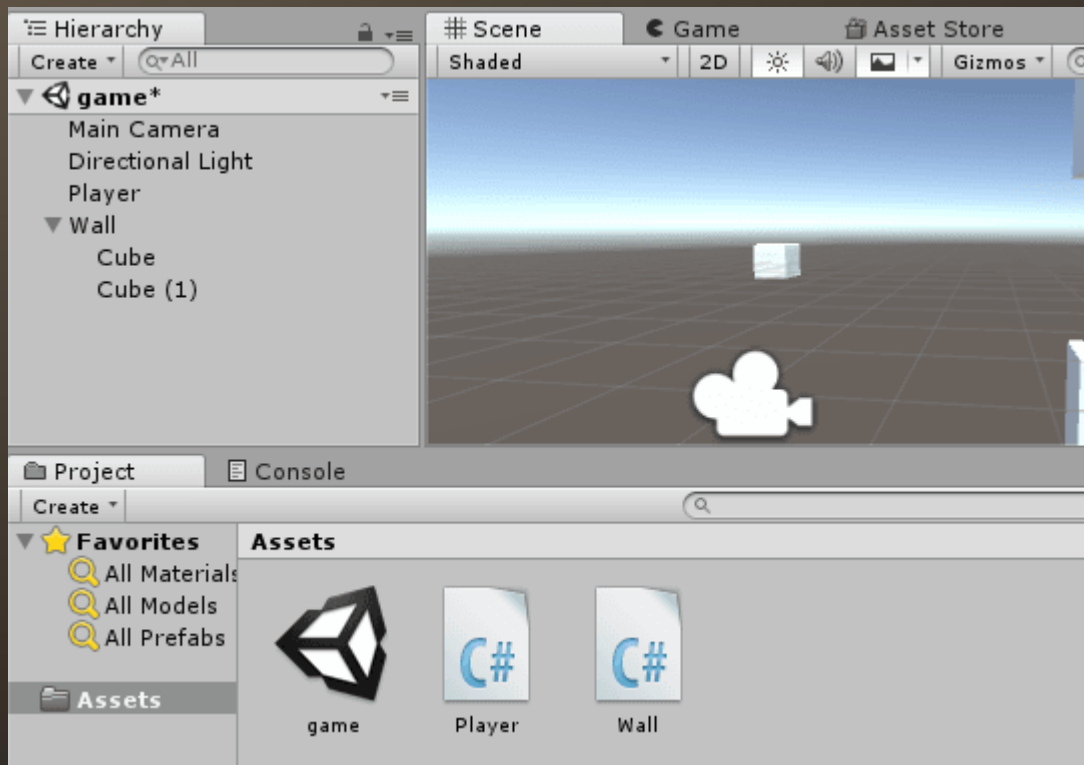
```
}
```

```
}
```



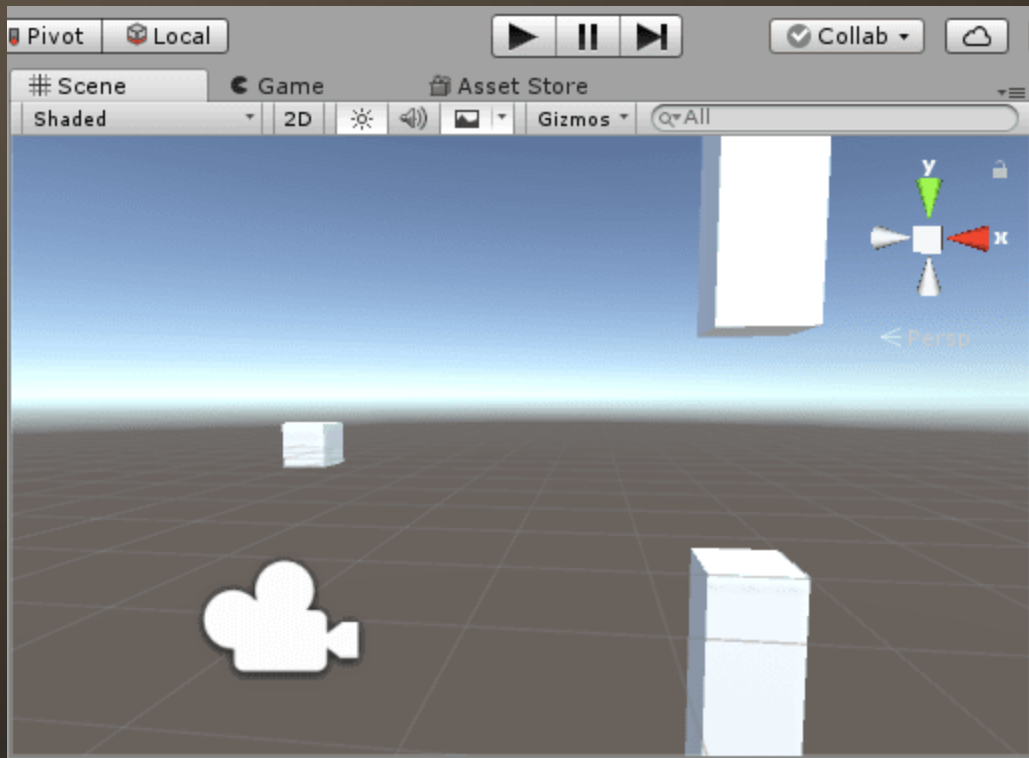


스크립트 연결



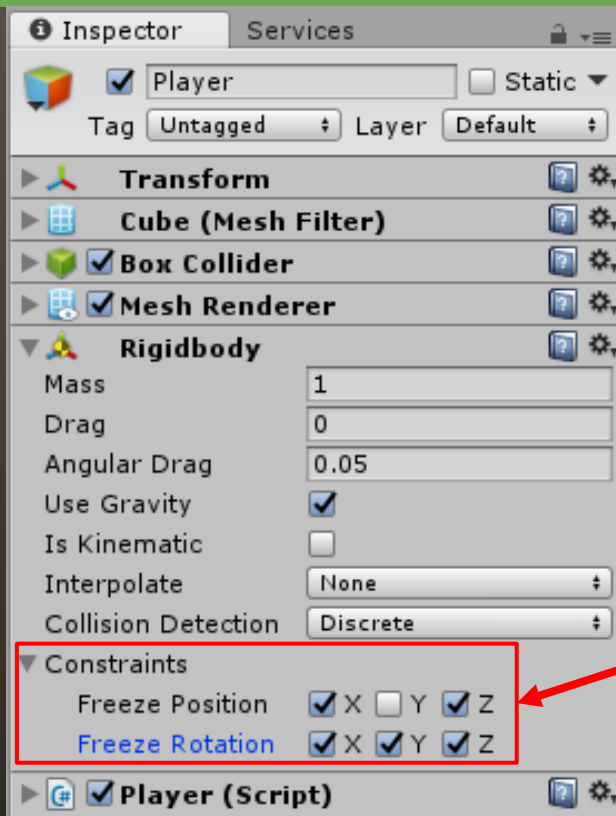


플레이





플레이어 큐브 고정시키기



Y축 위치 이동을 제외하고
전부 변화가 없도록 고정



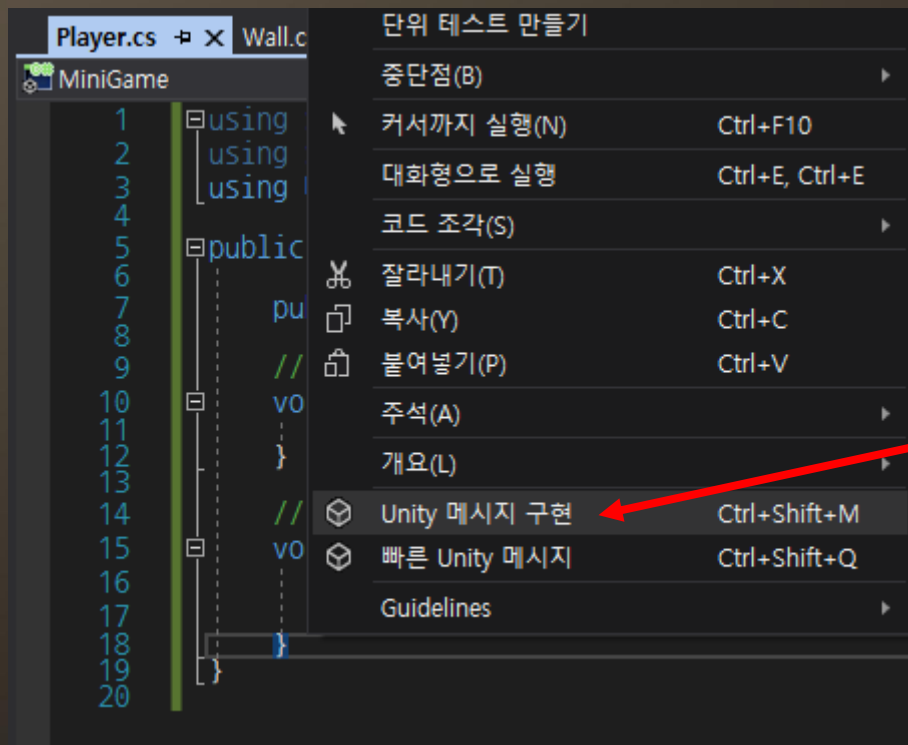
충돌 처리 추가

● Player.cs 스크립트 수정

- 플레이어가 벽에 충돌하면 처음부터 다시 시작하기
- Visual Studio 편집 화면에서 오른쪽 클릭
- Unity 메시지 구현 메뉴를 실행



충돌 처리 추가





충돌 처리 추가

OnCollisionEnter
메세지 체크

Unity 메시지 구현

만들 방법 선택:

onc

☐ OnCollisionGroupChanged()
☒ OnCollisionEnter(Collision)
☐ OnCollisionEnter2D(Collision2D)
☐ OnCollisionExit(Collision)
☐ OnCollisionExit2D(Collision2D)
☐ OnCollisionStay(Collision)
☐ OnCollisionStay2D(Collision2D)
☐ OnConnectedToServer()
☐ OnControllerColliderHit(ControllerColliderHit)

삽입 지점:

@ 커서

API 버전:

5.4

☐ 메서드 주석 생성

1/67 선택(2 이미 구현됨)

확인
취소



스크립트 편집

```
5 public class Player : MonoBehaviour {
6
7     public float jumpPower = 5;
8
9     // Use this for initialization
10    void Start () {
11
12    }
13
14    // Update is called once per frame
15    void Update () {
16        if (Input.GetButtonDown("Jump"))
17            GetComponent<Rigidbody>().velocity = new Vector3(0, jumpPower, 0);
18    }
19
20    private void OnCollisionEnter(Collision collision)
21    {
22    }
23
24 }
25
```

전구 아이콘으로 using을 자동으로 추가하고, Tab 키를 활용하여 코드 자동 완성



새로 로딩 추가

Player.cs

MiniGame

Player

OnCollisionEnter(Collision col

```
private void OnCollisionEnter(Collision collision)
```

```
{
```

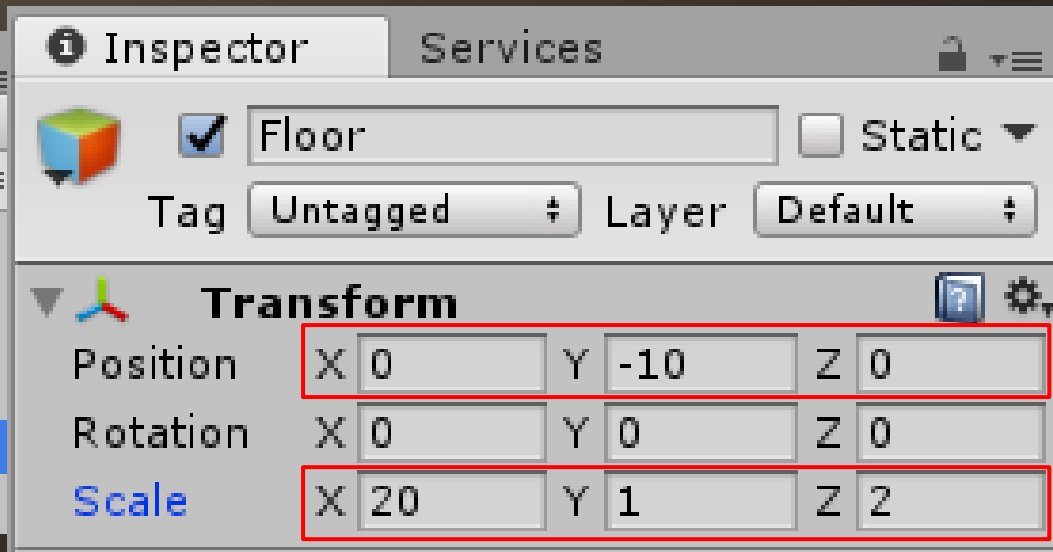
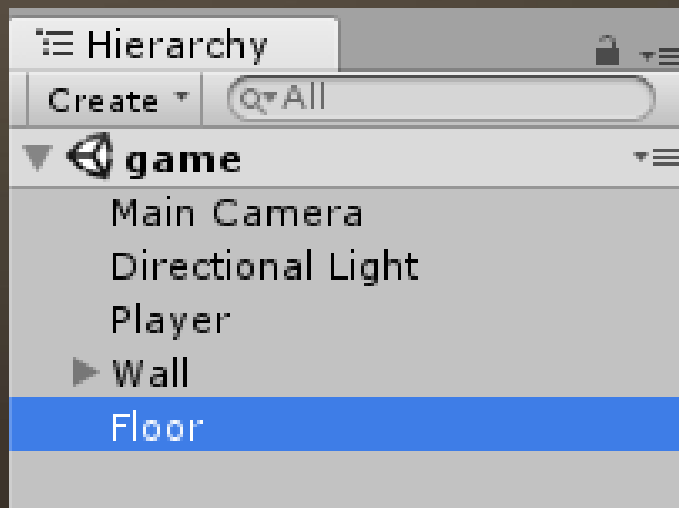
```
SceneManager.LoadScene(SceneManager.GetActiveScene().name);
```

```
}
```



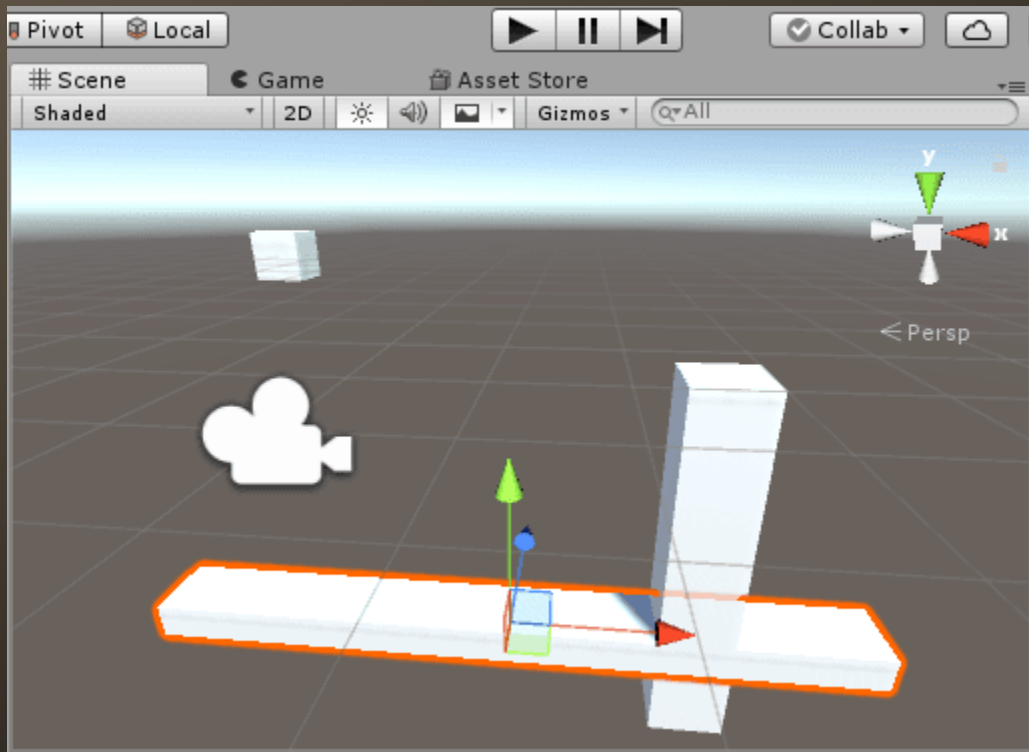
바닥 추가

6. GameObject > 3D Object > Cube





플레이



프리팸

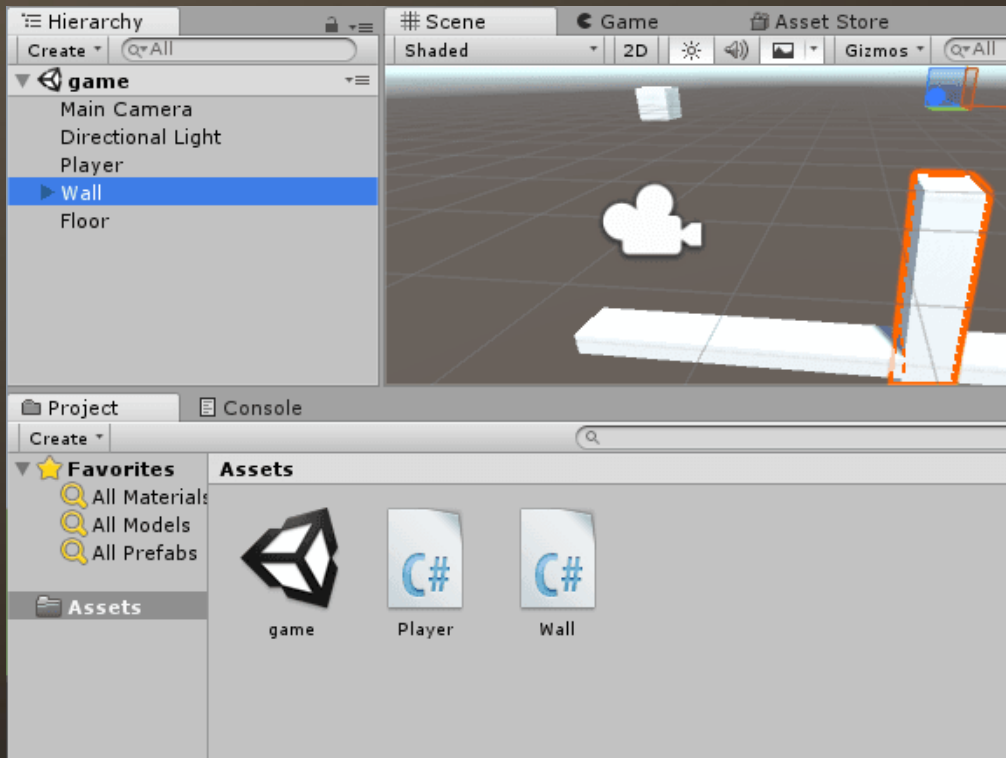


DELICIOUS
GAMES

Prefabs



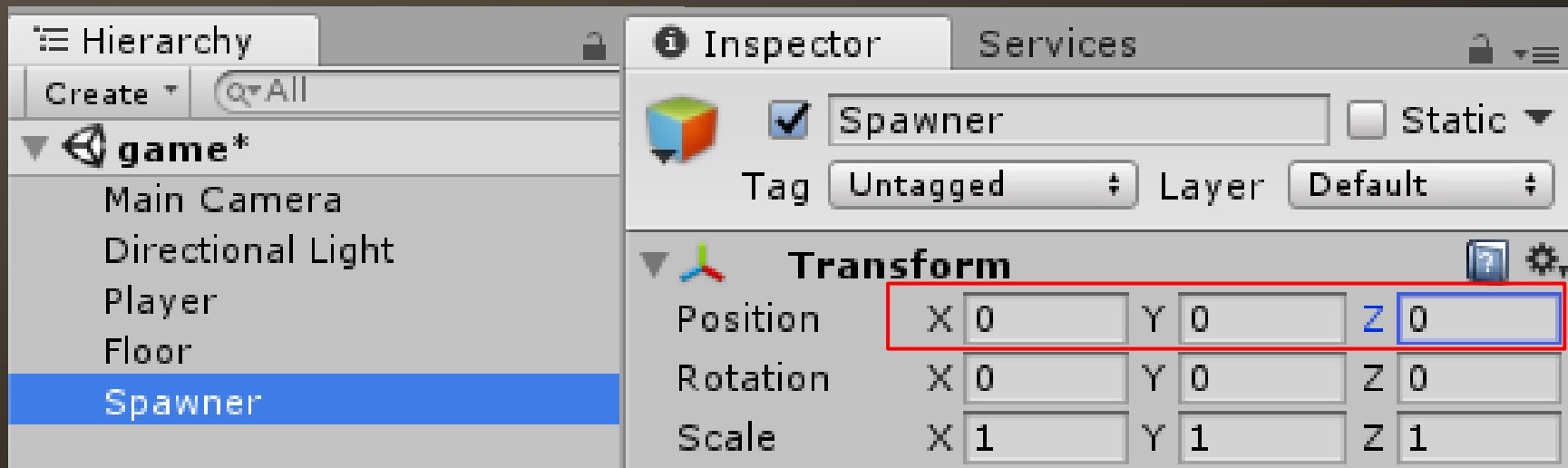
벽 프리팹 만들기





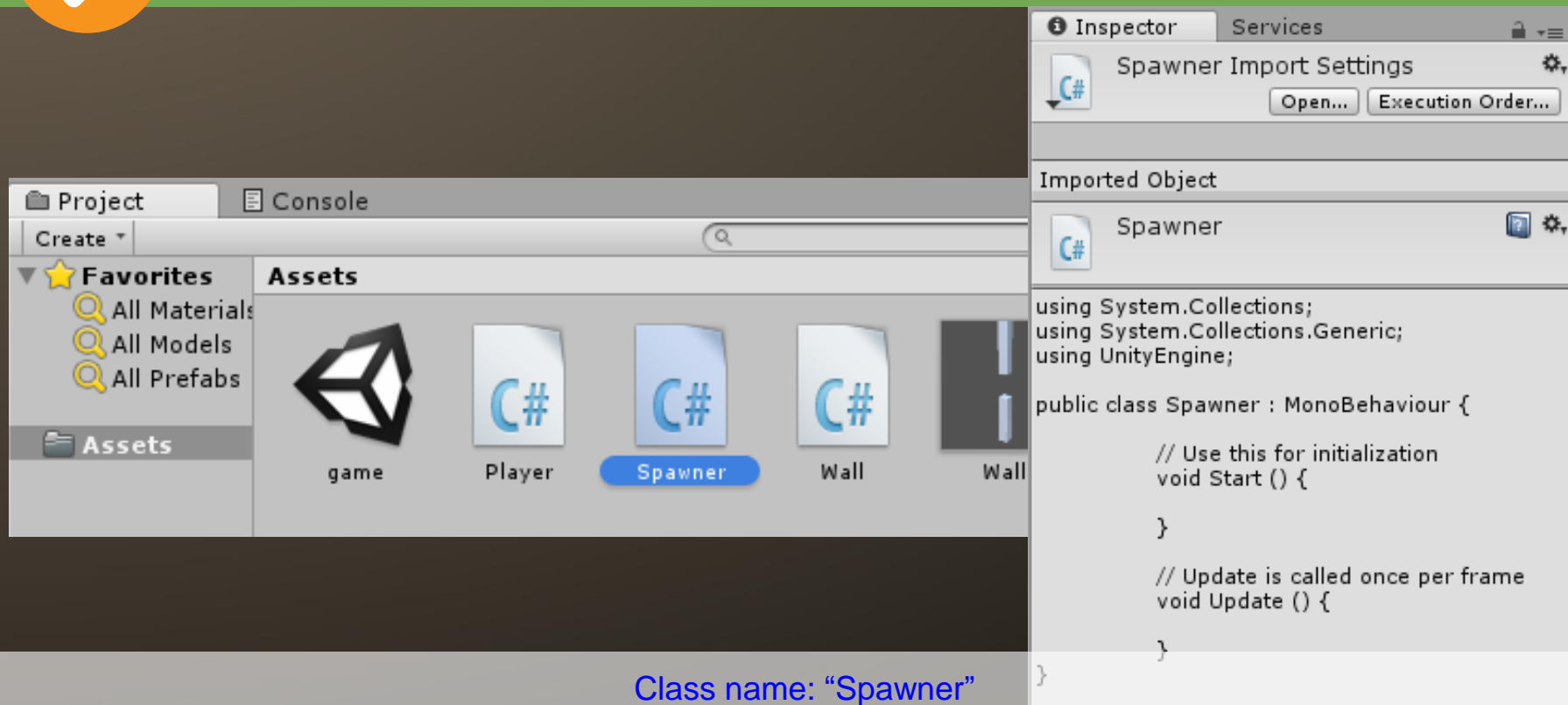
스크립트 실행용 빈 오브젝트 생성

7. GameObject > Create Empty





스크립트 추가



The screenshot displays the Unity interface. On the left, the 'Project' panel shows the 'Assets' folder. The 'Assets' panel lists several assets: a 'game' object (a cube), a 'Player' script, a 'Spawner' script (highlighted with a blue bar), and two 'Wall' objects. The 'Inspector' panel on the right shows the 'Spawner' script. The script code is as follows:

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

public class Spawner : MonoBehaviour {

    // Use this for initialization
    void Start () {

    }

    // Update is called once per frame
    void Update () {

    }

}
```

Class name: "Spawner"



일정 시간마다 프리팹 생성

Spawner.cs

MiniGame

Spawner

Start()

```
public class Spawner : MonoBehaviour {
```

```
    public GameObject wallPrefab;
```

```
    public float interval = 1.5f; // 일정 시간마다
```

```
    float term;
```

```
    // Use this for initialization
```

```
    void Start () {
```

```
        term = interval; // 시작부터 벽이 하나 나오기 위해
```

```
    }
```



일정 시간마다 프리팹 생성

Spawner.cs

MiniGame

Spawner

Update()

```
// Update is called once per frame
```

```
void Update () {
```

```
    term += Time.deltaTime;
```

```
    if (term >= interval)
```

```
// 일정 시간이 지나면
```

```
{
```

```
        Instantiate(wallPrefab, transform.position
```

```
, transform.rotation);
```

```
        term -= interval;
```

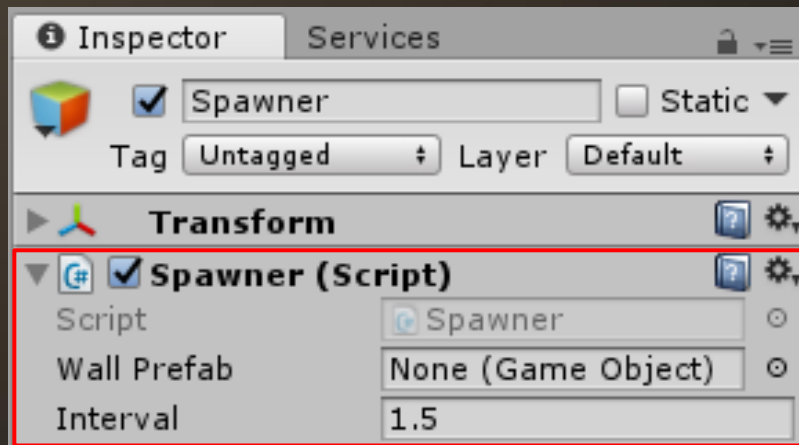
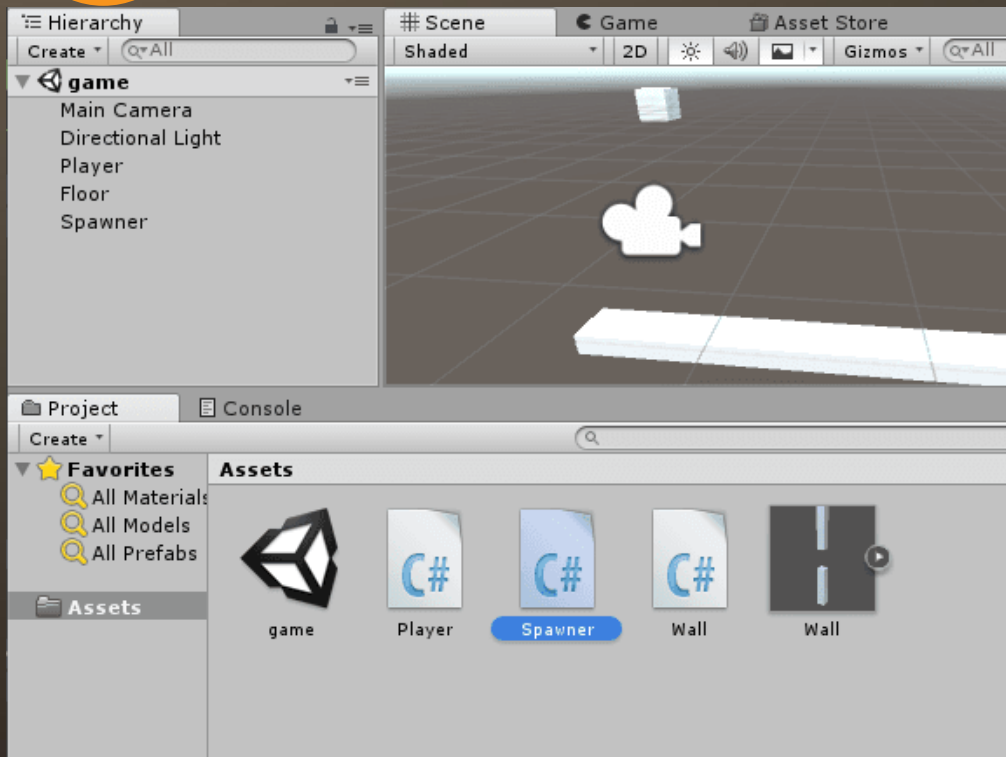
```
}
```

```
}
```

```
}
```

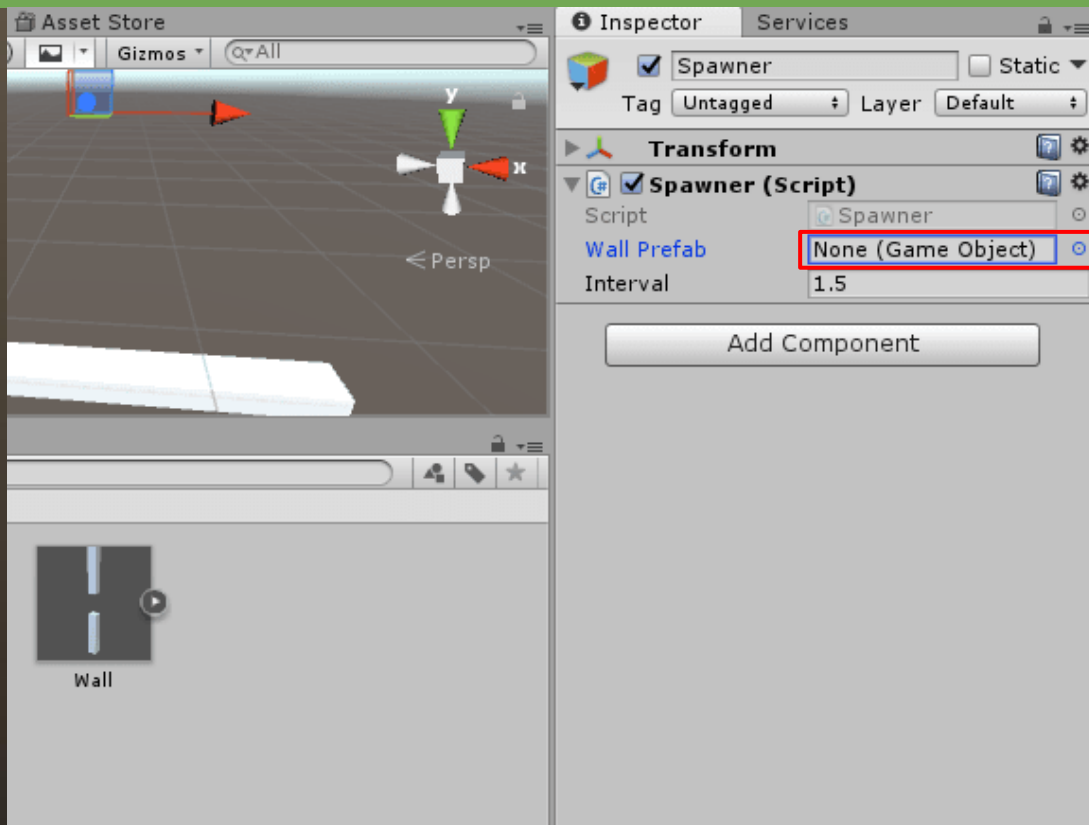


스크립트 연결



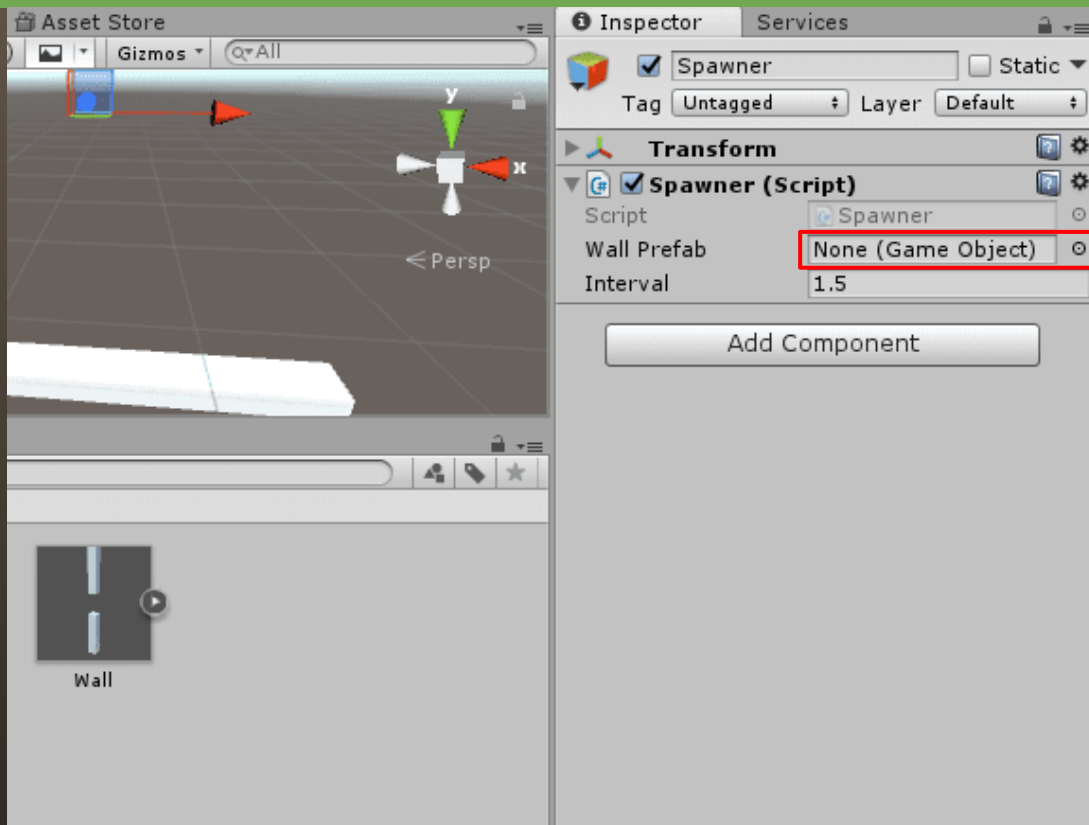


프리팹 연결 (선택 방식)



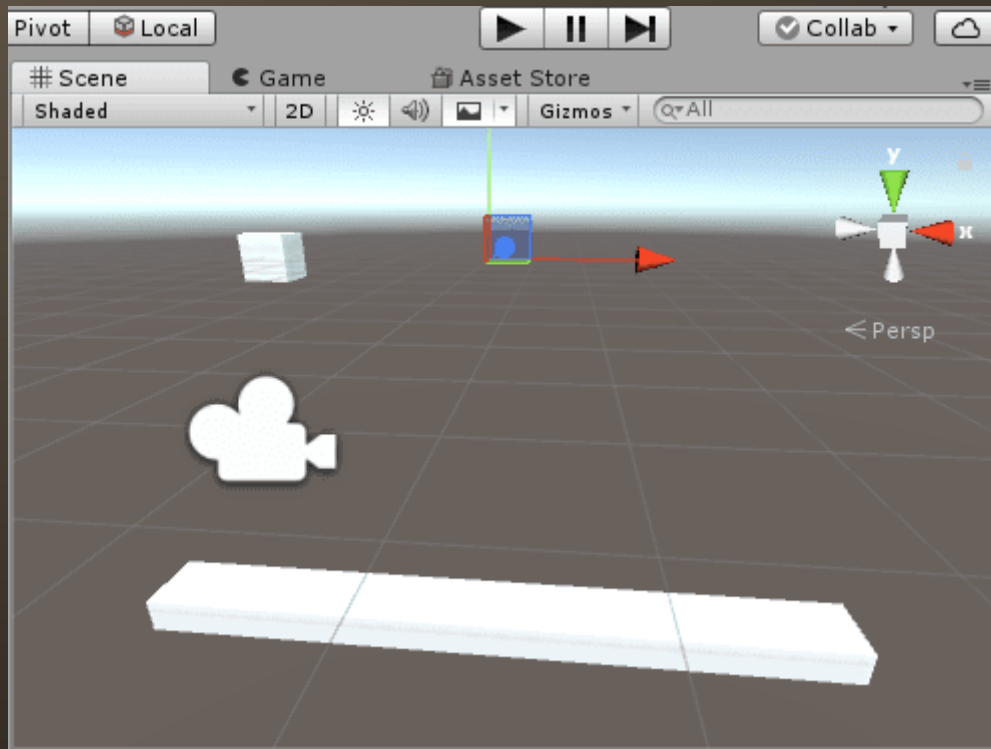


프리팹 연결 (드래그&드롭 방식)



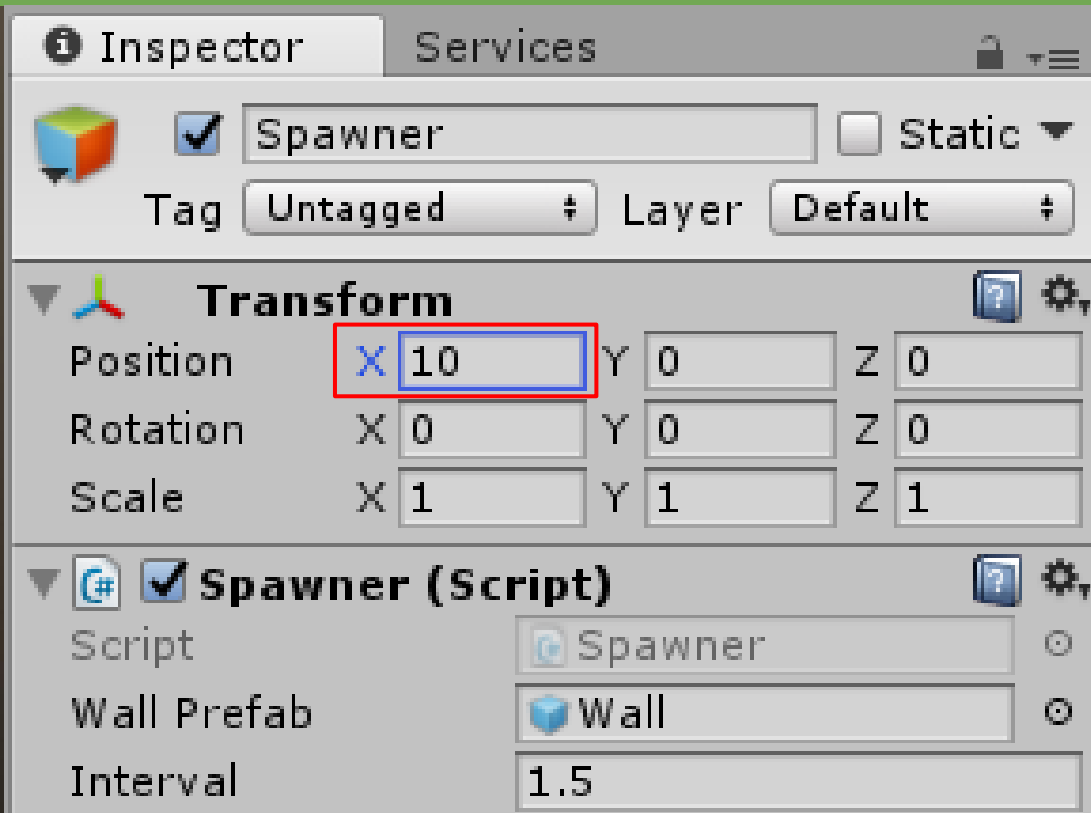


플레이



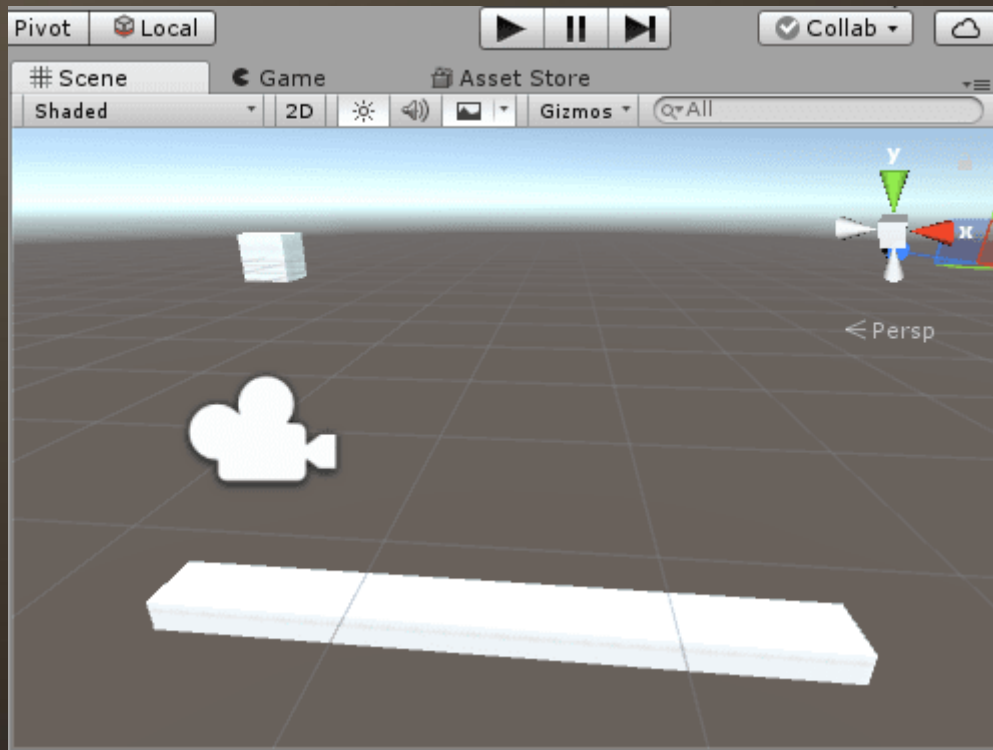


스폰 위치 조정





플레이





벽의 높이 조정

Spawner.cs

MiniGame

Spawner

Start()

```
public class Spawner : MonoBehaviour {
```

```
    public GameObject wallPrefab;
```

```
    public float interval = 1.5f;
```

```
    public float range = 3;
```

```
    float term;
```

```
    // Use this for initialization
```

```
    void Start () {
```

```
        term = interval;
```

```
}
```



벽의 높이 조정

```
// Update is called once per frame
```

```
void Update () {
```

```
    term += Time.deltaTime;
```

```
    if (term >= interval)
```

```
    {
```

```
        Vector3 pos = transform.position;
```

```
        pos.y += Random.Range(-range, range);
```

```
        Instantiate(wallPrefab, pos,
```

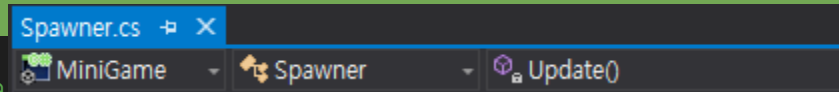
```
        transform.rotation);
```

```
        term -= interval;
```

```
    }
```

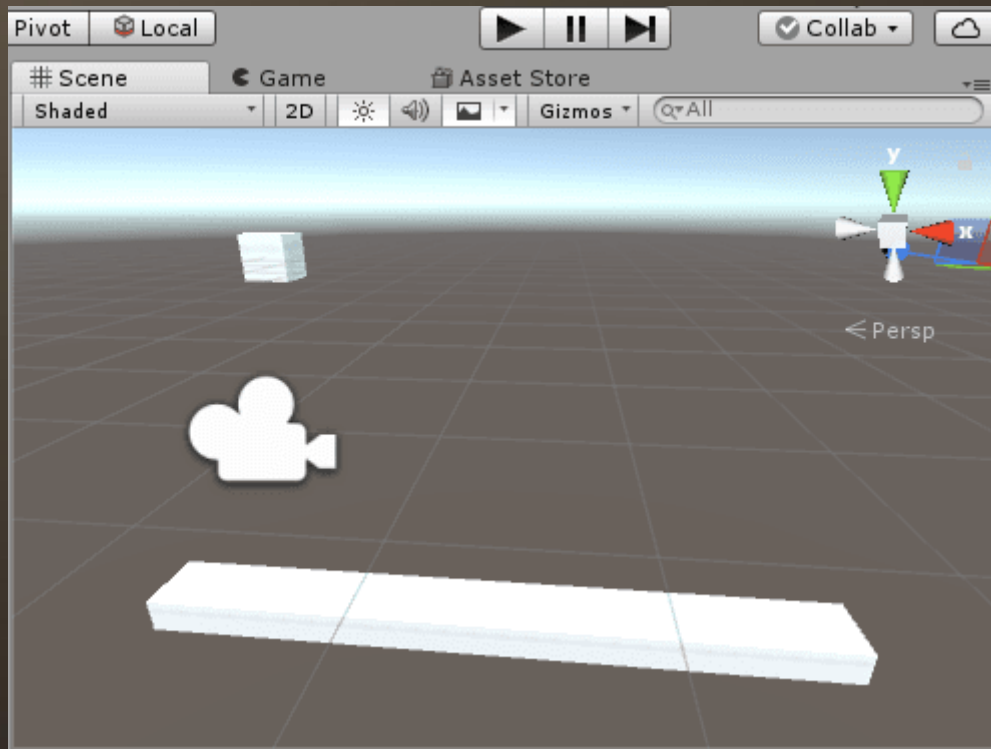
```
}
```

```
}
```



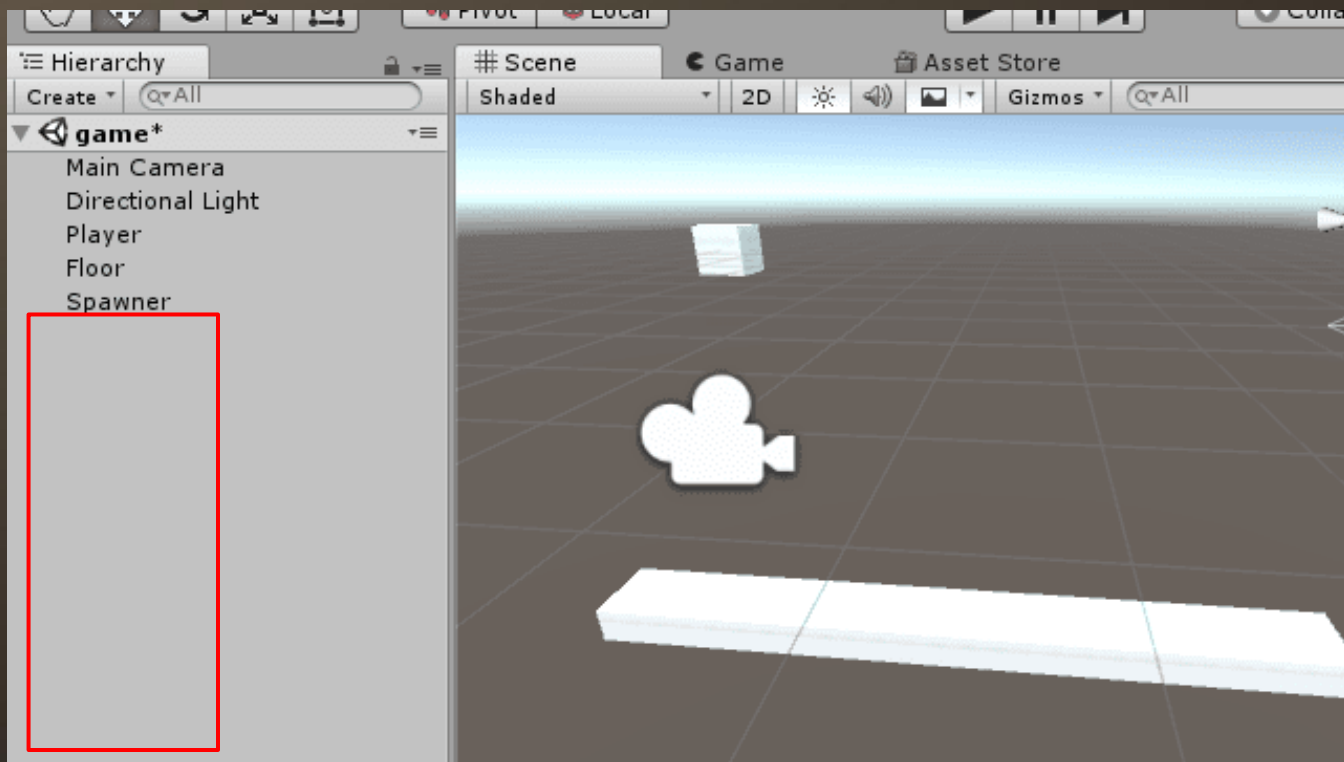


플레이





플레이





벽이 자동으로 사라지게

Wall.cs

MiniGame

Wall

Update()

```
public class Wall : MonoBehaviour {
```

```
    public float speed = -5;
```

```
    // Use this for initialization  
    void Start () {
```

```
    }
```

```
    // Update is called once per frame
```

```
    void Update () {
```

```
        transform.Translate(speed * Time.deltaTime, 0, 0);
```

```
        if (transform.position.x < -10)
```

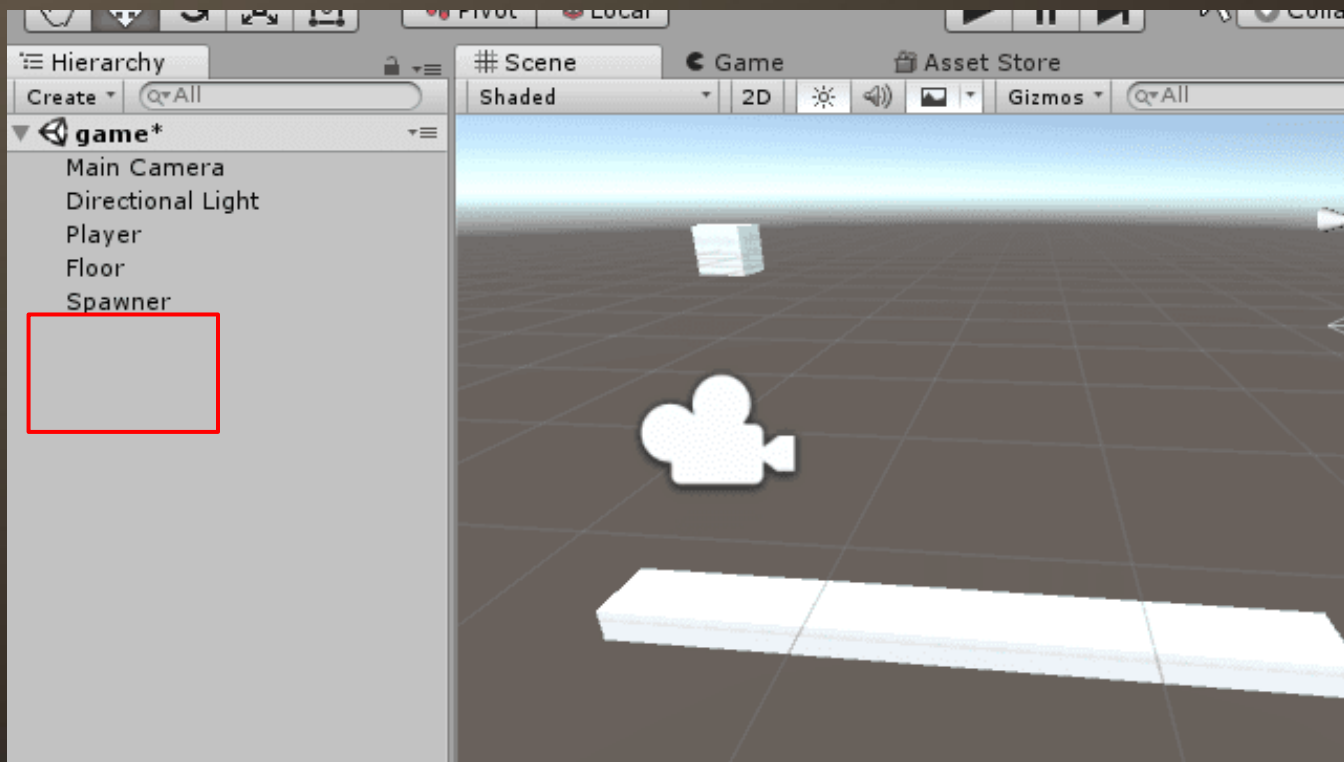
```
            Destroy(gameObject);
```

```
    }
```

```
}
```

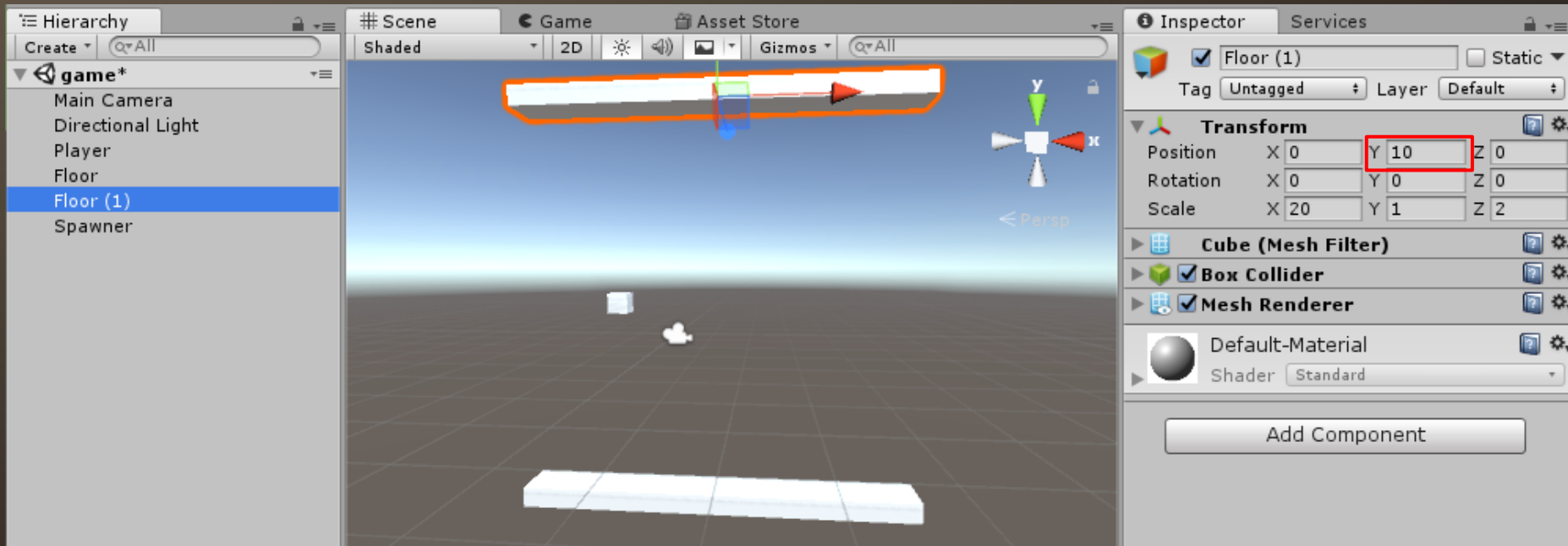


플레이



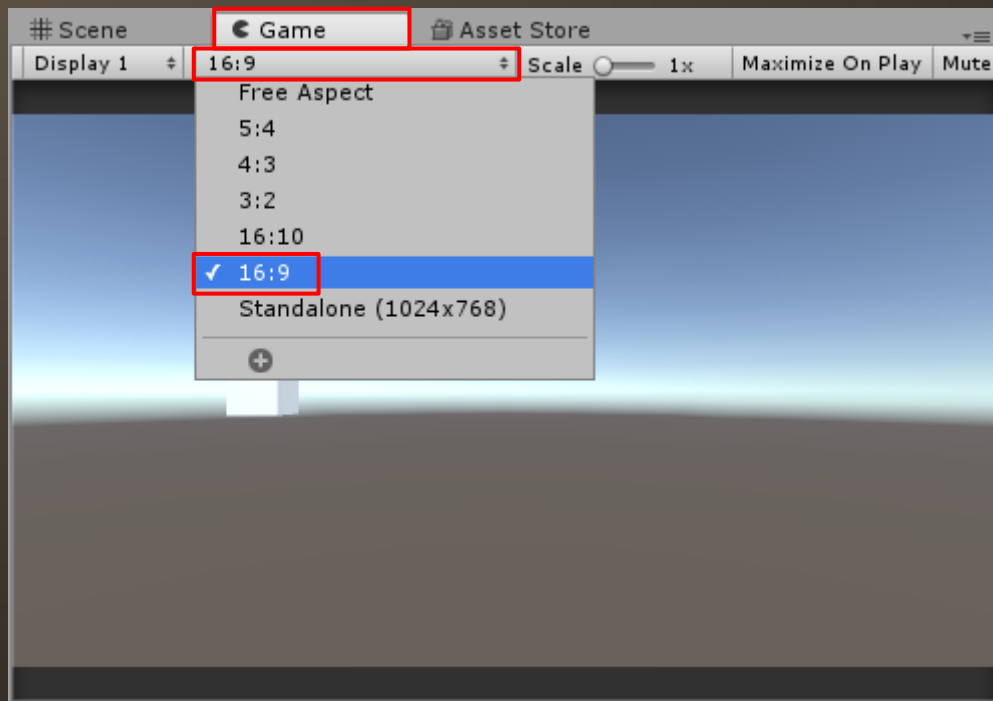


천정 추가하기



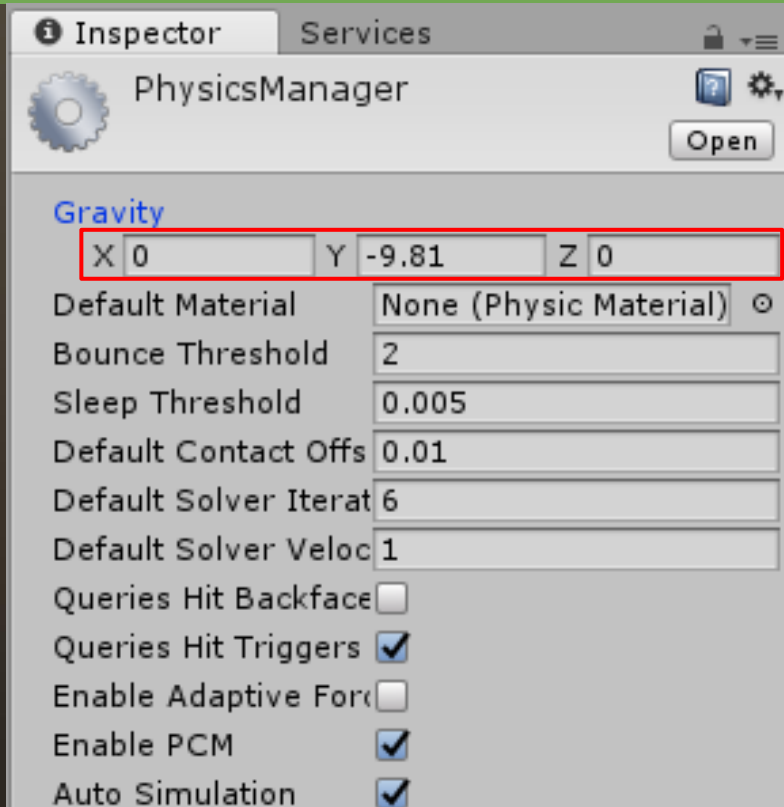
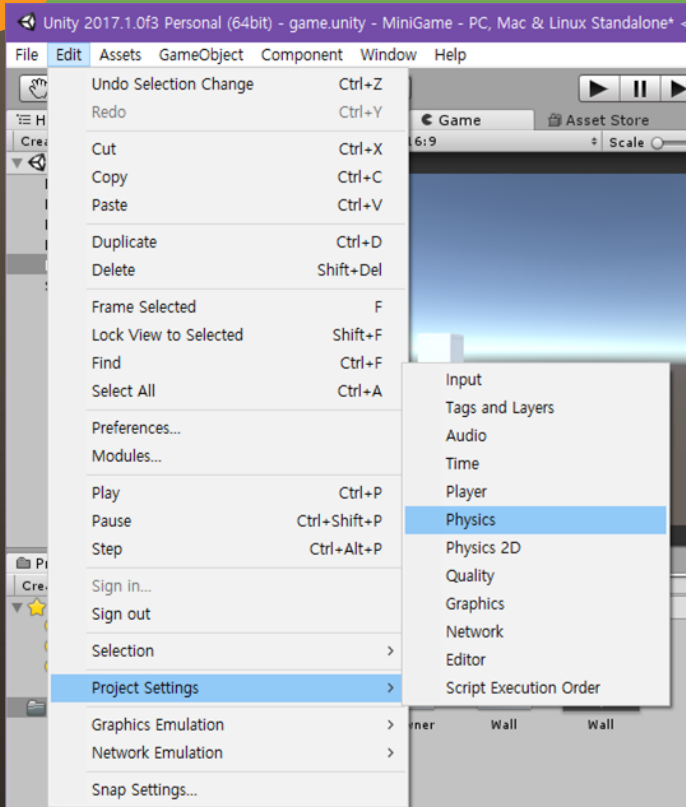


화면 비율 고정하기





중력 변경하기





그 밖의 여러가지 변경해 보기

- 중력
- 점프력 (Player의 Jump Power)
- 벽의 속도 (Wall 프리팹의 Speed)
- 벽의 간격 (Spawner의 Interval)
- 벽의 높이 차이 (Spawner의 Range)
- 플레이어의 모델, 장애물의 모델

다양한 시도

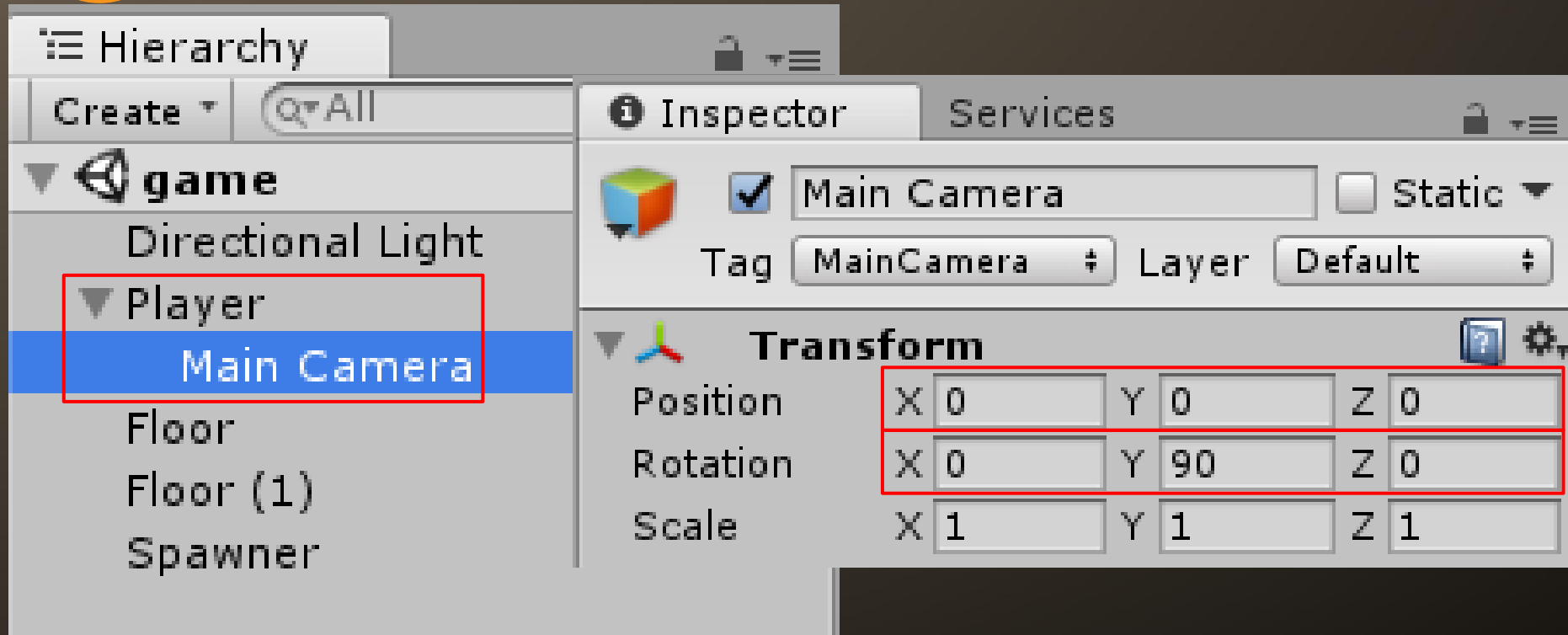


**DELICIOUS
GAMES**

Variations

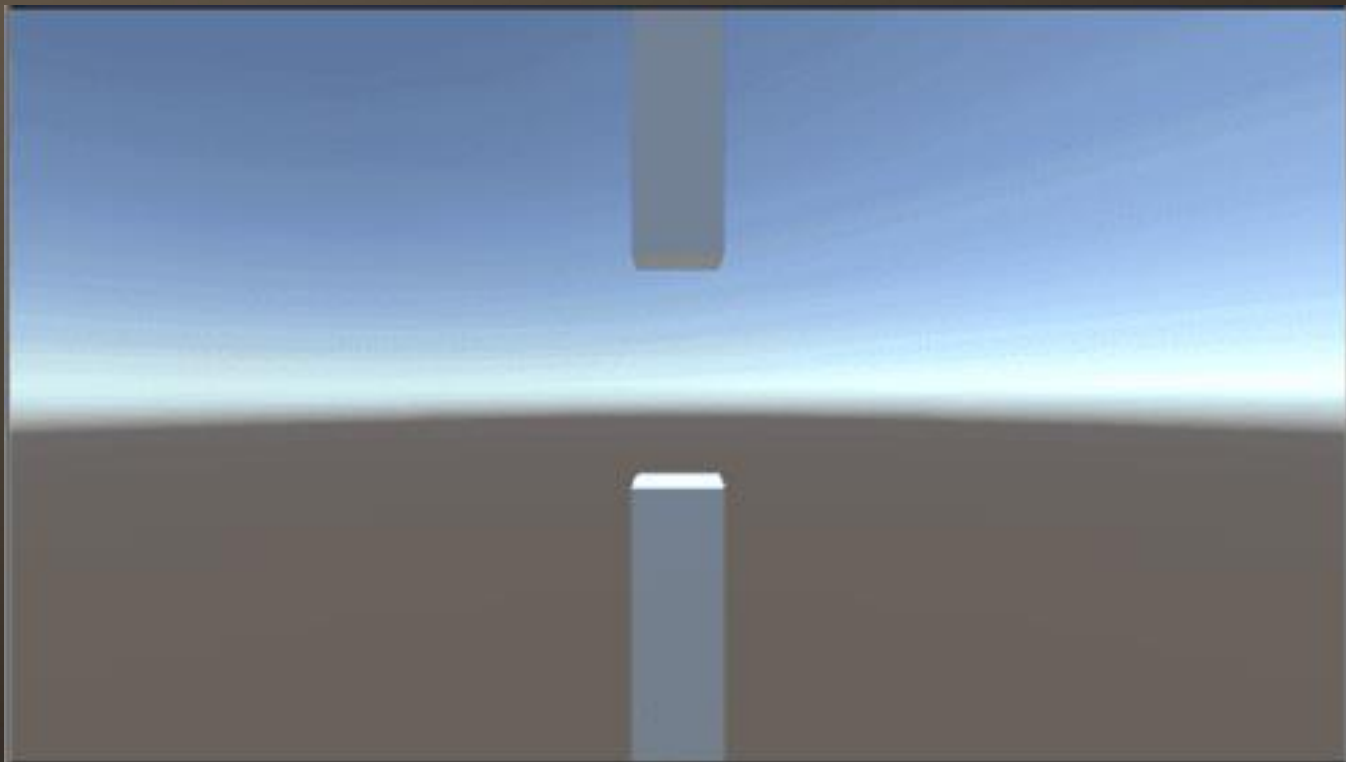


Try 1 1인칭 시점





시도1: 1인칭 시점





Try 2

낮은 높이에서 점프 부스터



시도2: 낮은 높이에서 점프 부스터

```
public class Player : MonoBehaviour
```

```
    public float jumpPower = 5;
```

```
    public float lowWarn = -4;
```

```
    public float jumpBoost = 2.5f;
```

```
    // Use this for initialization
```

```
    void Start () {
```

```
}
```

Player.cs

MiniGame

Player

Start()



시도2: 낮은 높이에서 점프 부스터

```
// Update is called once per frame
```

```
void Update () {
```

```
    if (Input.GetButtonDown("Jump"))
```

```
    {
```

```
        if (transform.position.y < lowWarn)
```

```
        {
```

```
            GetComponent<Rigidbody>().velocity =
```

```
new
```

```
Vector3(0, jumpPower * jumpBoost, 0);
```

```
            Debug.Log("Boost JUMP!!");
```

```
        }
```

```
    else
```

```
    {
```

```
        GetComponent<Rigidbody>().velocity =
```

```
new
```

```
Vector3(0, jumpPower, 0);
```

```
        Debug.Log("Jump.");
```

```
    }
```

Player.cs

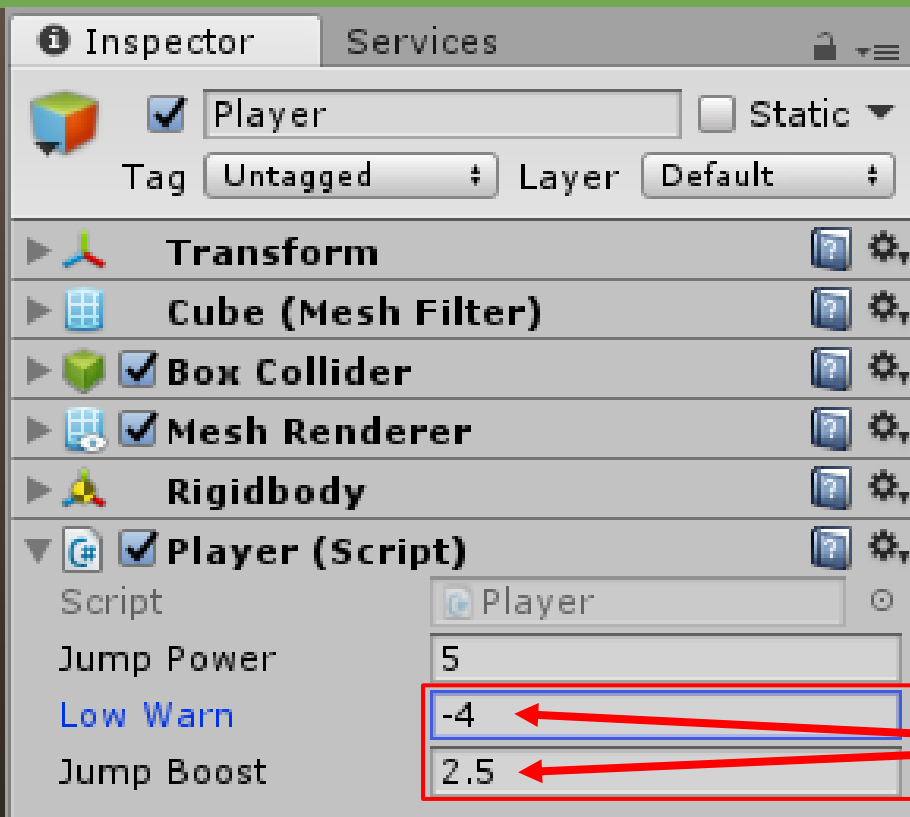
MiniGame

Player

Update()

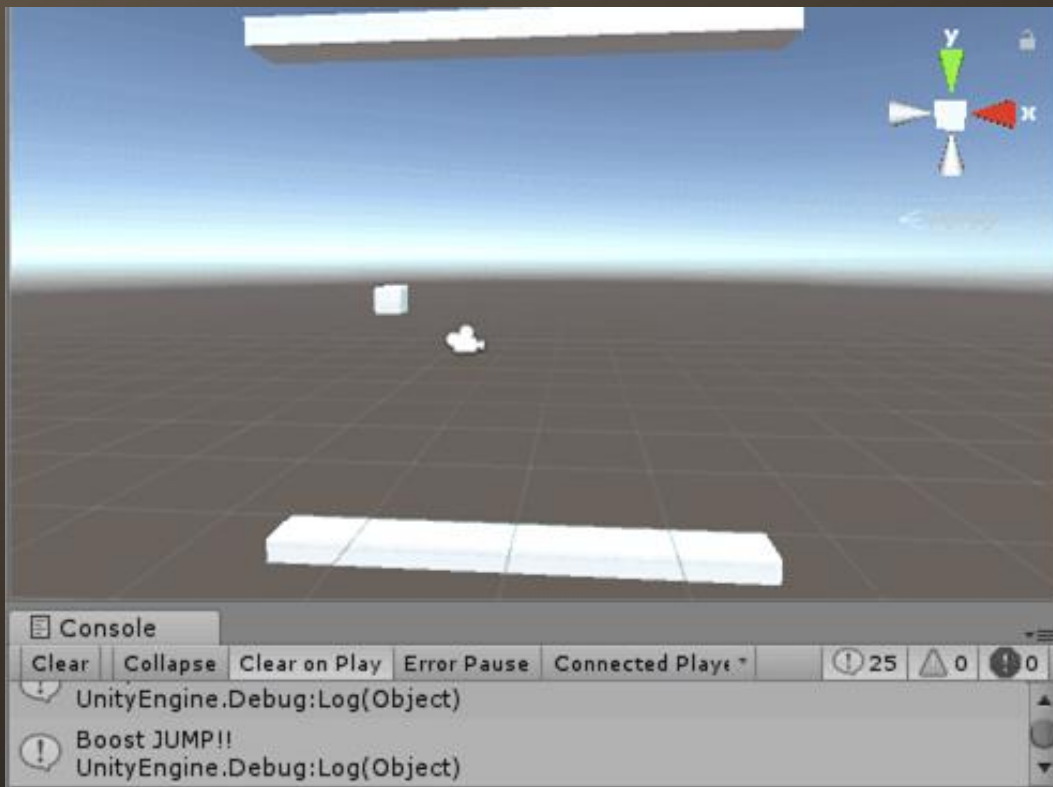


시도2: 낮은 높이에서 점프 부스터





시도2: 낮은 높이에서 점프 부스터





Try 3

점점 앞으로 가는 플레이어



시도3: 점점 앞으로 가는 플레이어

Player.cs

MiniGame

Player

Update()

```
public class Player : MonoBehaviour {
```

```
    public float jumpPower = 5;
```

```
    public float step = 0.5f;
```

```
    // Use this for initialization
```

```
    void Start () {
```

```
}
```

```
    // Update is called once per frame
```

```
    void Update () {
```

```
        transform.position += new Vector3(step * Time.deltaTime, 0, 0);
```

```
        if (Input.GetButtonDown("Jump"))
```

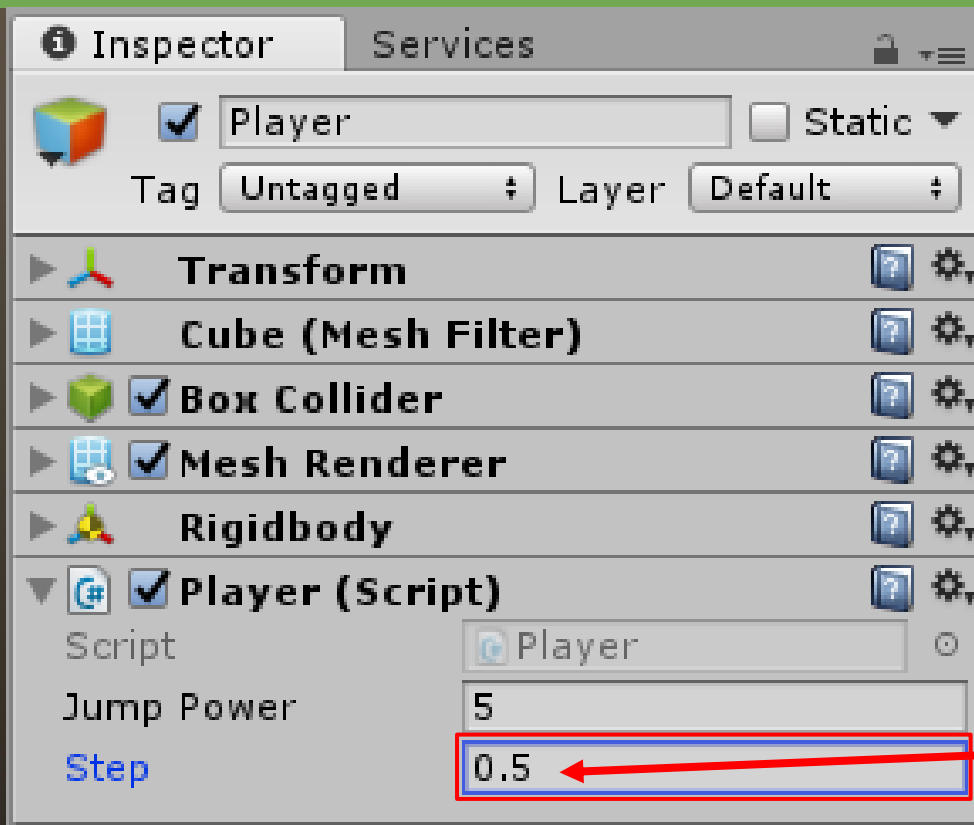
```
            GetComponent<Rigidbody>().velocity = new Vector3(0,
```

```
            jumpPower, 0);
```

```
    }
```

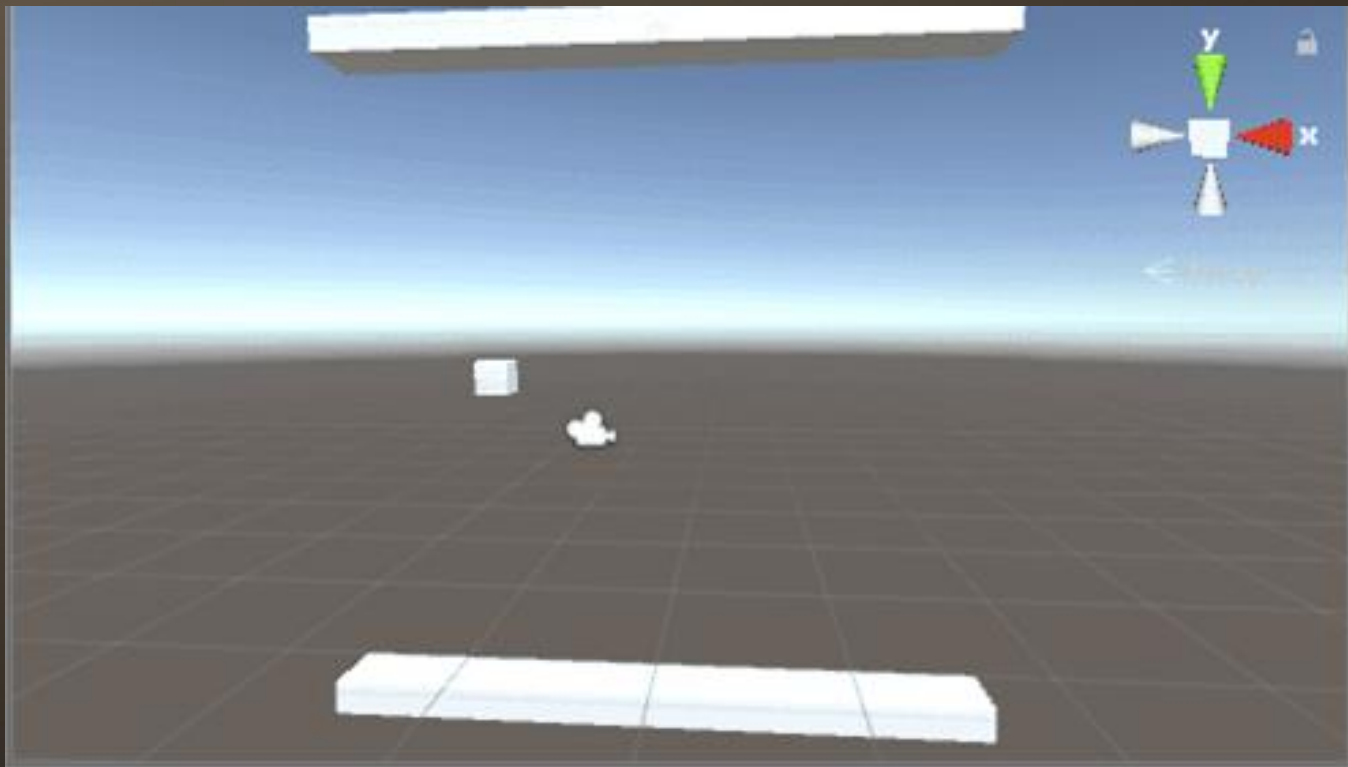


시도3: 점점 앞으로 가는 플레이어





시도3: 점점 앞으로 가는 플레이어





Try 4

점점 키가 크는 플레이어



시도4: 점점 키가 크는 플레이어

Player.cs

MiniGame

Player

Update()

```
public class Player : MonoBehaviour {
```

```
    public float jumpPower = 5;
```

```
    public float step = 0.1f;
```

```
    // Use this for initialization
```

```
    void Start () {
```

```
    }
```

```
    // Update is called once per frame
```

```
    void Update () {
```

```
        transform.localScale += new Vector3(0, step * Time.deltaTime, 0);
```

```
        if (Input.GetButtonDown("Jump"))
```

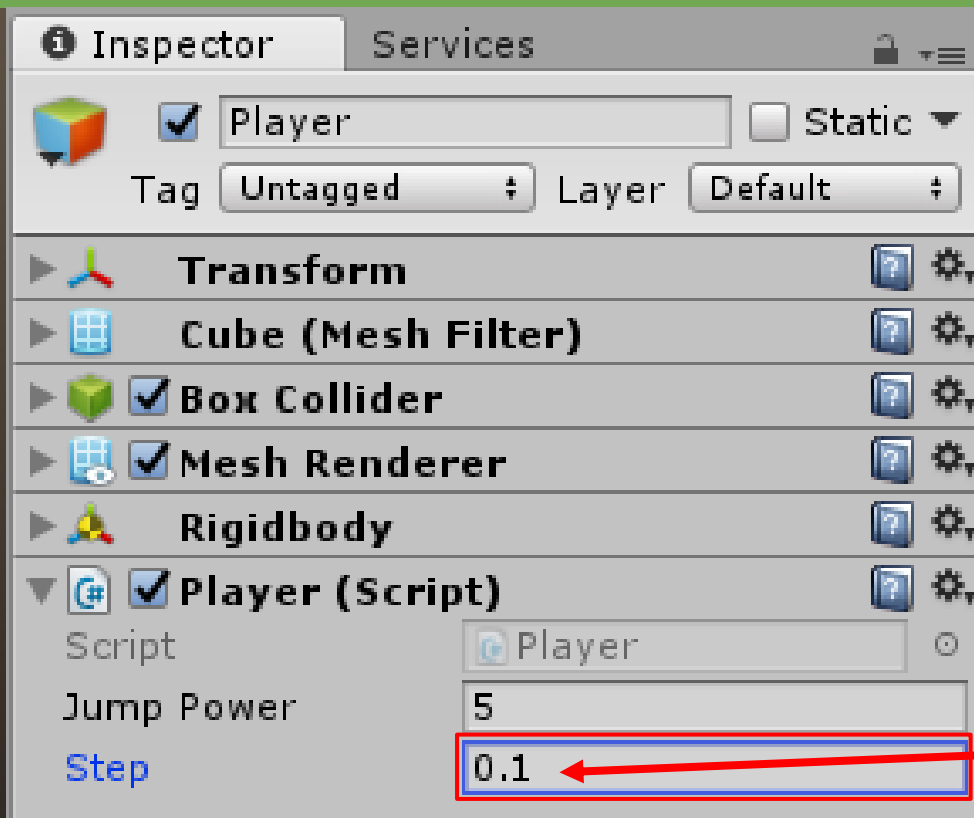
```
            GetComponent<Rigidbody>().velocity = new Vector3(0,
```

```
            jumpPower, 0);
```

```
    }
```

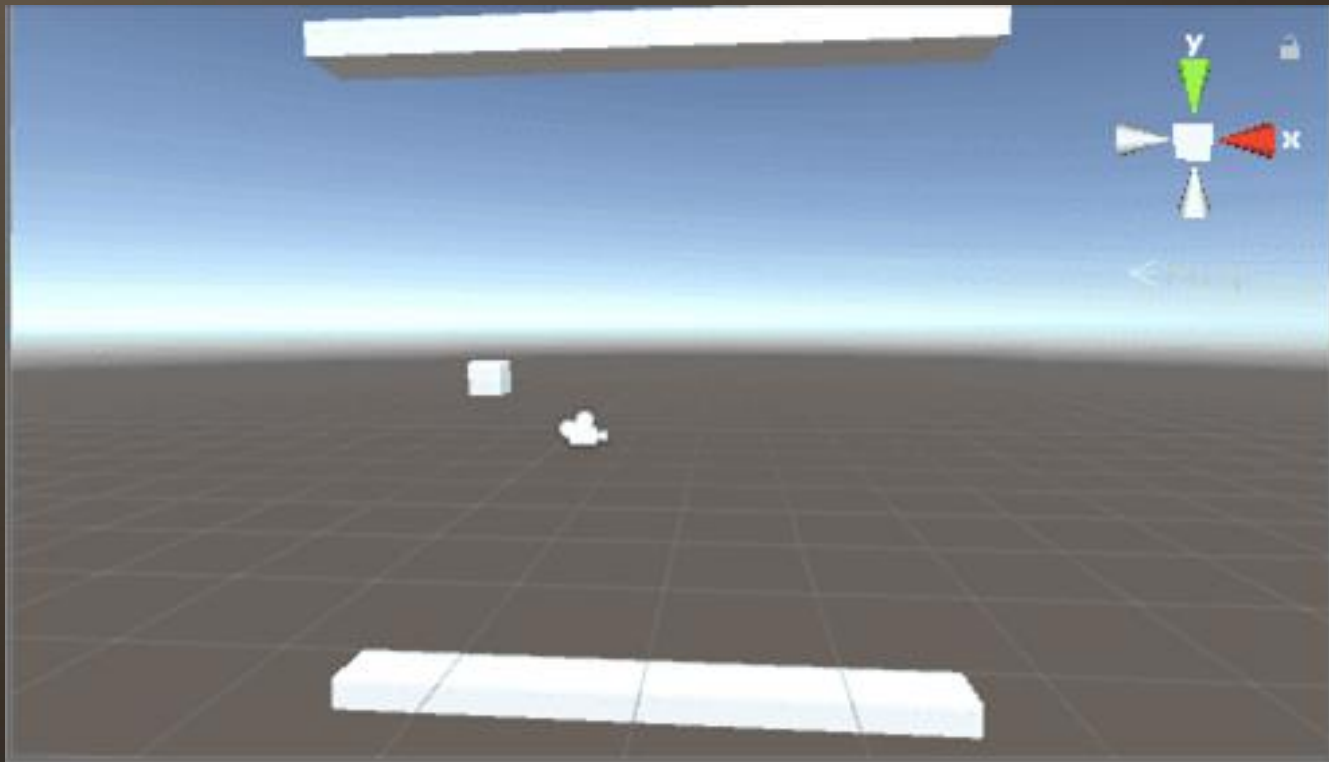


시도4: 점점 키가 크는 플레이어





시도4: 점점 키가 크는 플레이어





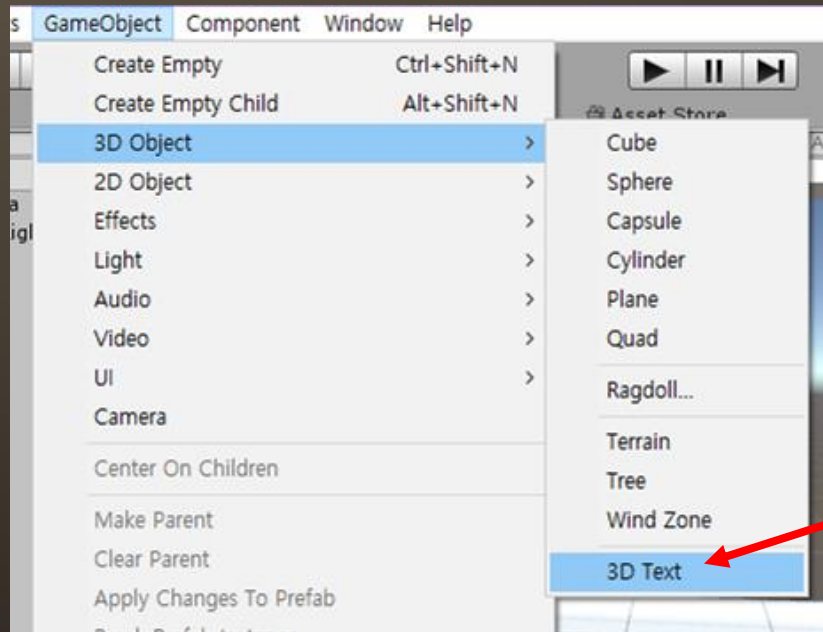
Try 5

점수 카운팅



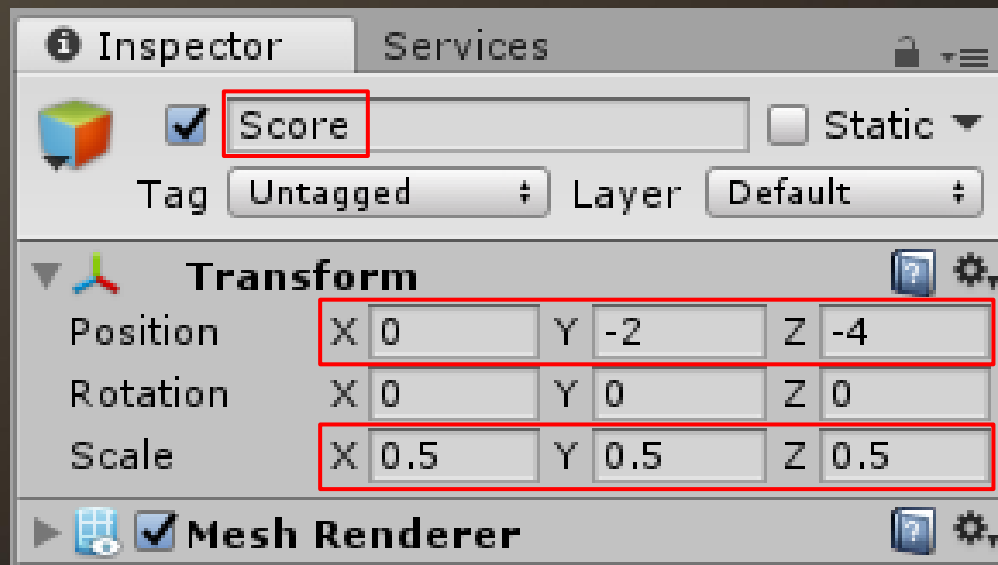
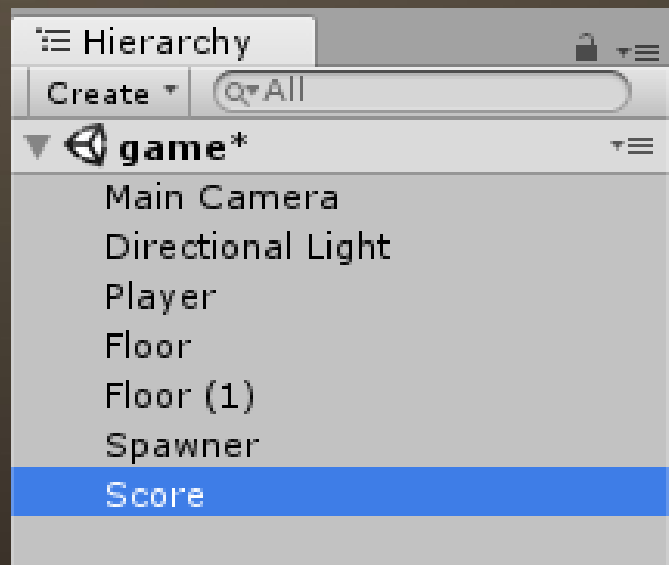
시도5: 점수 카운팅

● GameObject > 3D Object > 3D Text



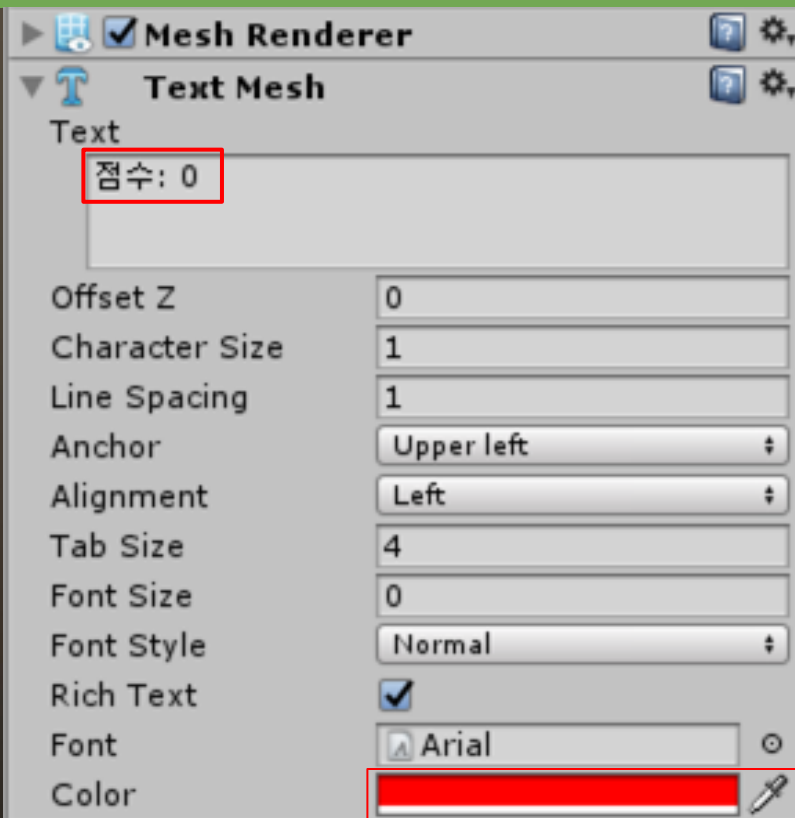
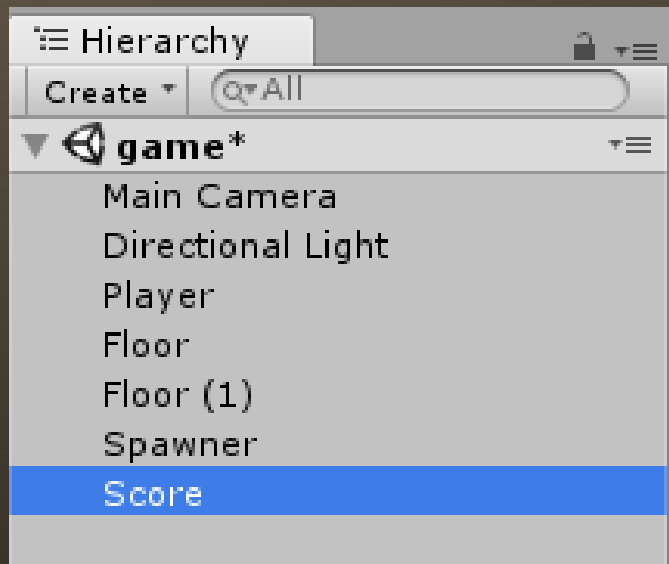


시도5: 점수 카운팅





시도5: 점수 카운팅





시도5: 점수 카운팅

Player.cs

MiniGame

Player

Start()

```
public class Player : MonoBehaviour {
```

```
    public float jumpPower = 5;
```

```
    TextMesh scoreOutput;
```

```
    int score = 0;
```

```
    // Use this for initialization
```

```
    void Start () {
```

```
        scoreOutput = GameObject.Find(name:
```

```
        "Score").GetComponent<TextMesh>();
```

```
        // 이름으로 게임 오브젝트를 찾고, 그 중 TextMesh 컴포넌트를 얻기
```

```
    }
```

```
    // Update is called once per frame
```

```
    void Update () {
```

```
        if (Input.GetButtonDown("Jump"))
```



시도5: 점수 카운팅

GetComponent<I

Player.cs

MiniGame

Player

addScore(int s)

```
Vector3(0, jumpPower, 0);  
}
```

```
private void OnCollisionEnter(Collision collision)  
{  
    SceneManager.LoadScene(SceneManager.GetActiveScene().name);  
}
```

```
// 점수 더하기
```

```
public void addScore(int s)  
{  
    score += s;  
    scoreOutput.text = "점수 : " + score;  
}
```



시도5: 점수 카운팅

```
public class Wall : MonoBehaviour {
```

```
    public float speed = -5;
```

```
    Player player;
```

```
    // Use this for initialization
```

```
    void Start () {
```

```
        player = GameObject.Find(name:
```

```
        "Player").GetComponent<Player>();
```

```
    }
```

Wall.cs

MiniGame

Wall

Start()



시도5: 점수 카운팅

Wall.cs

MiniGame

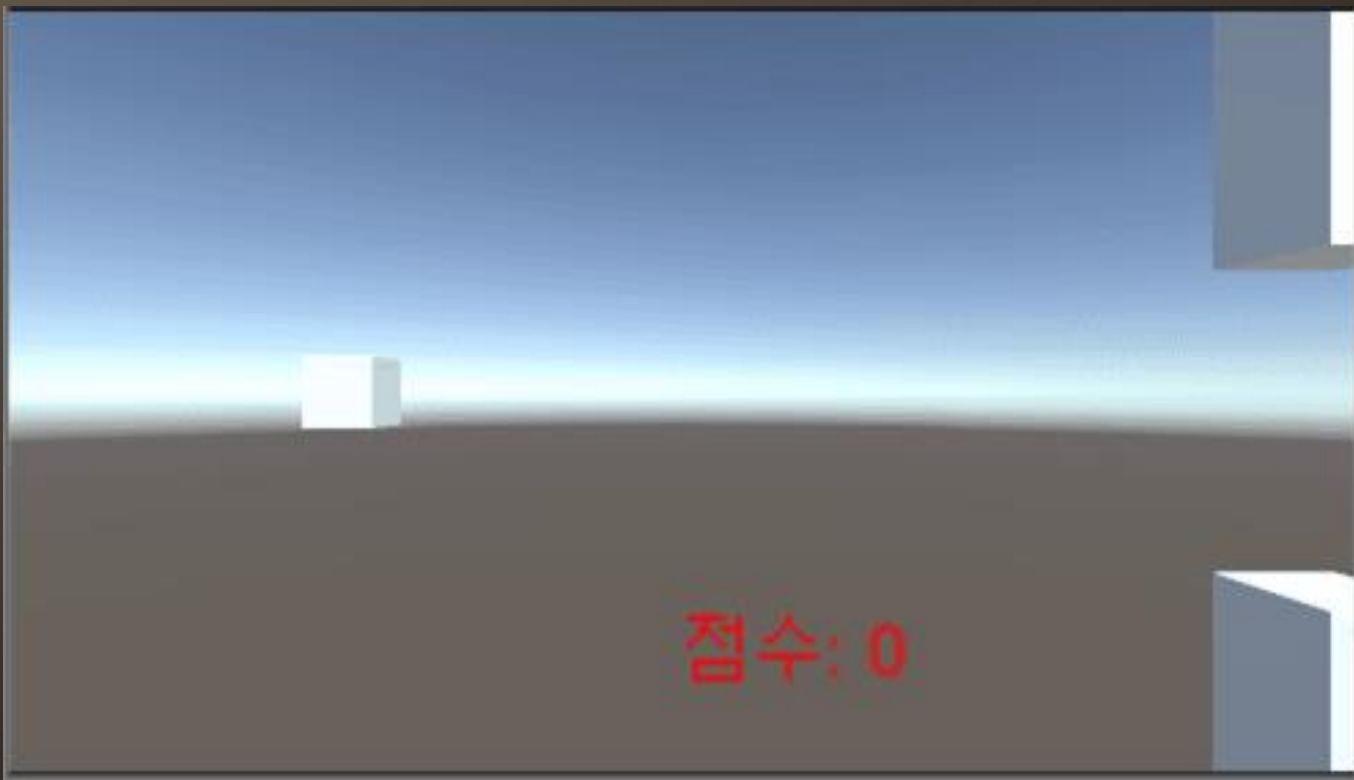
Wall

Update()

```
// Update is called once per frame
void Update () {
    transform.Translate(speed * Time.deltaTime, 0, 0);
    if (transform.position.x < -10)
    {
        Destroy(gameObject);
        player.addScore(1);
    }
}
```



시도5: 점수 카운팅



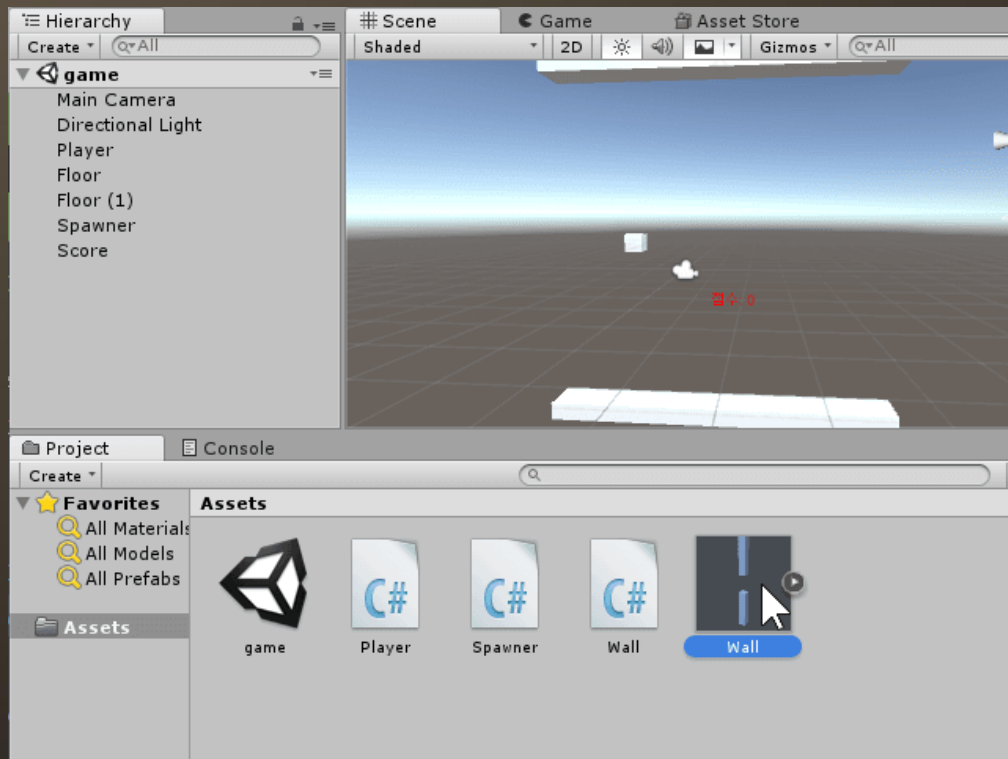


Try 6

다양한 종류의 벽



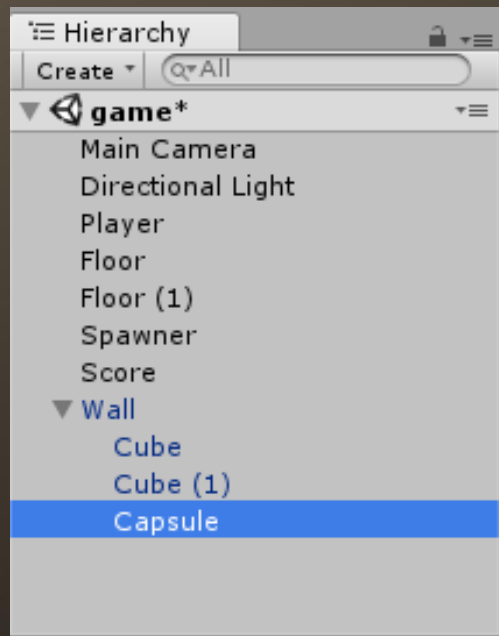
시도6: 다양한 종류의 벽





시도6: 다양한 종류의 벽

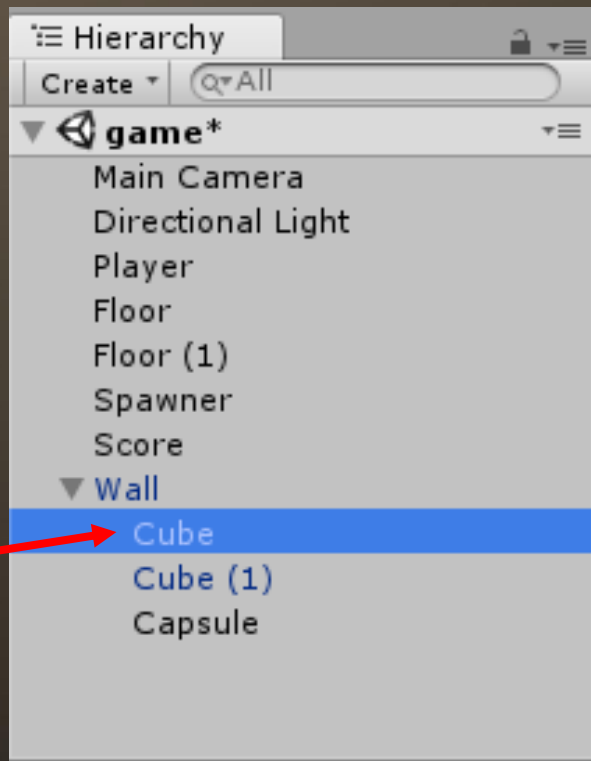
● GameObject > 3D Object > Capsule



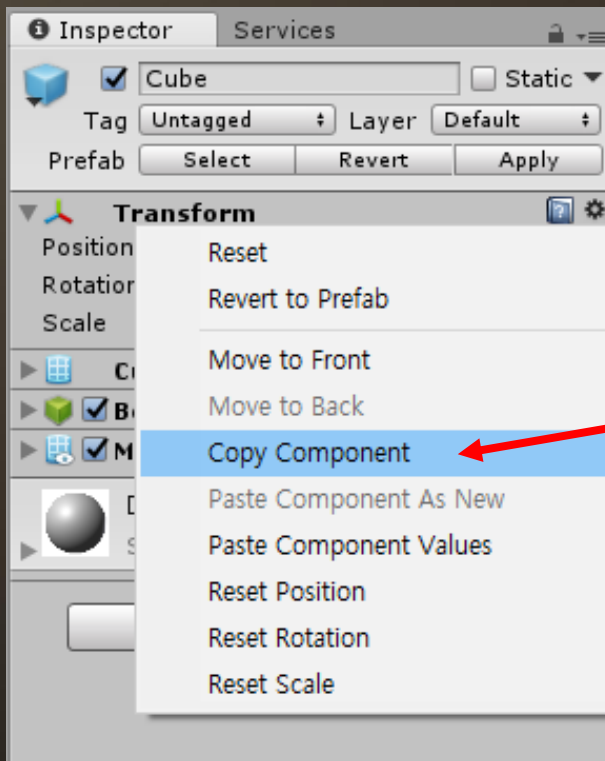


시도6: 다양한 종류의 벽

1

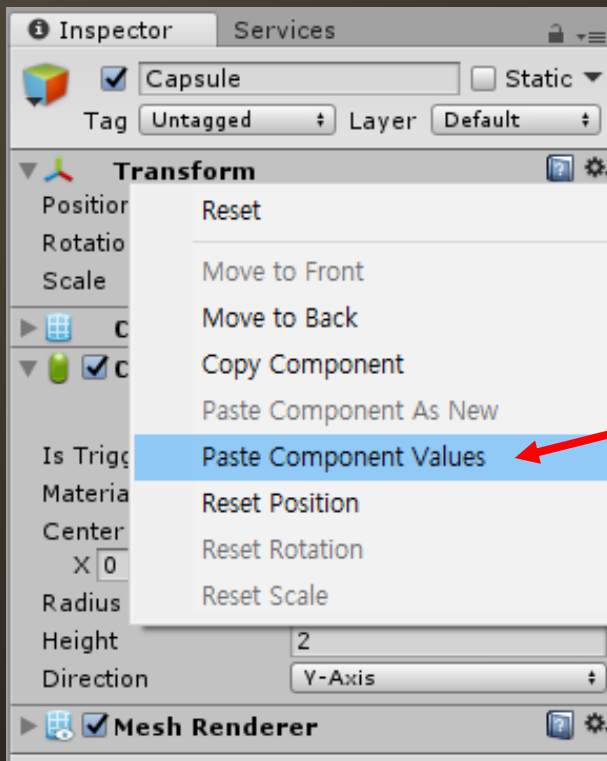
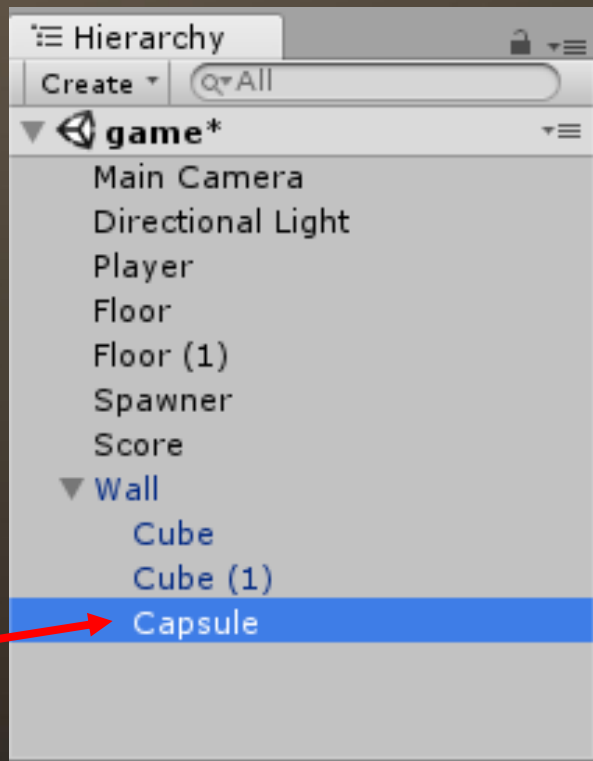


2



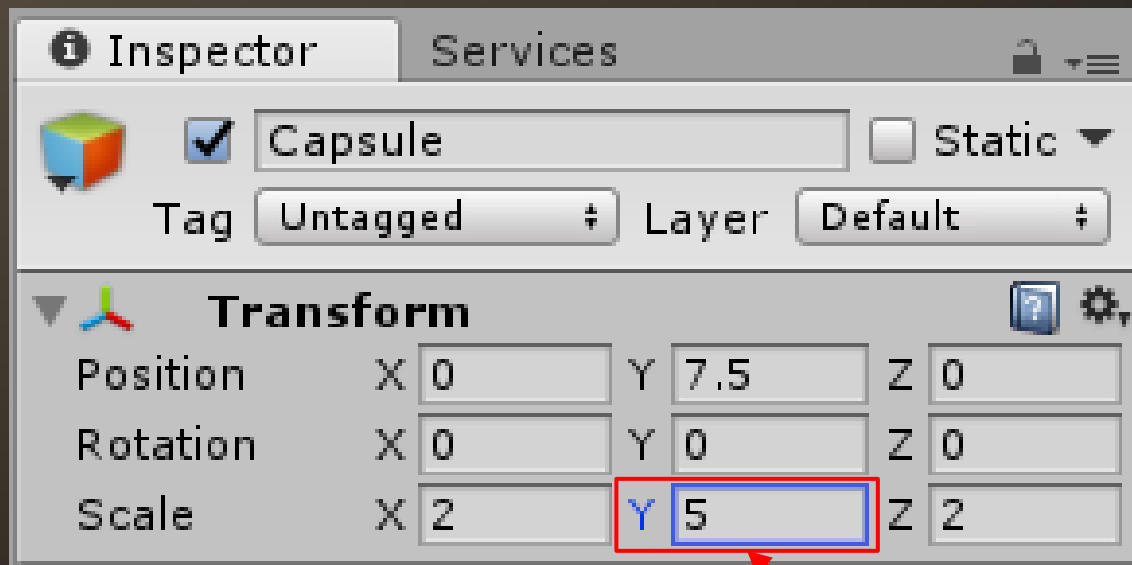
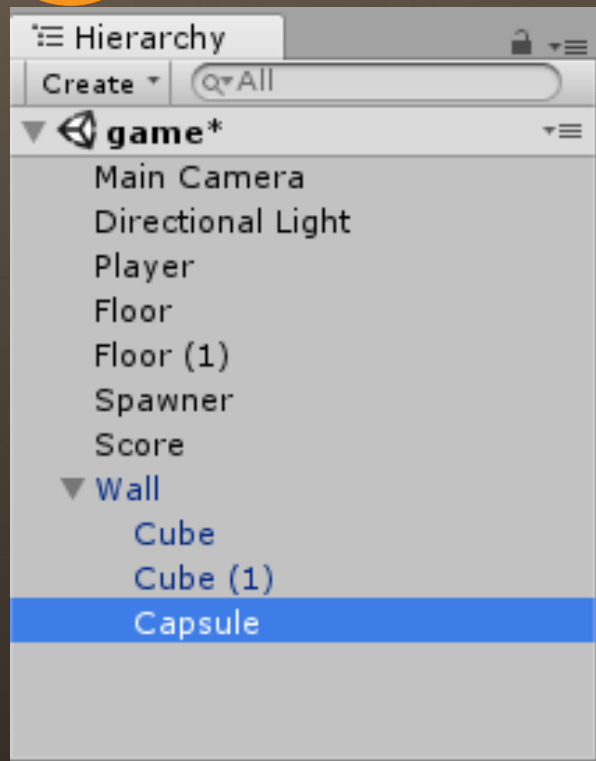


시도6: 다양한 종류의 벽





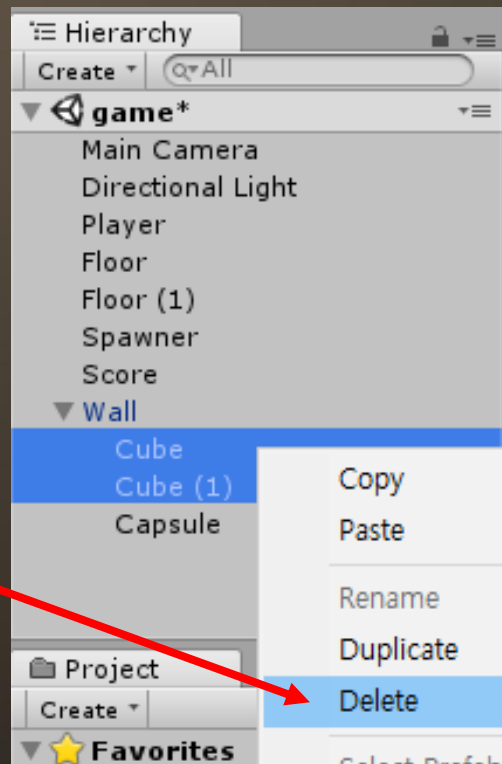
시도6: 다양한 종류의 벽



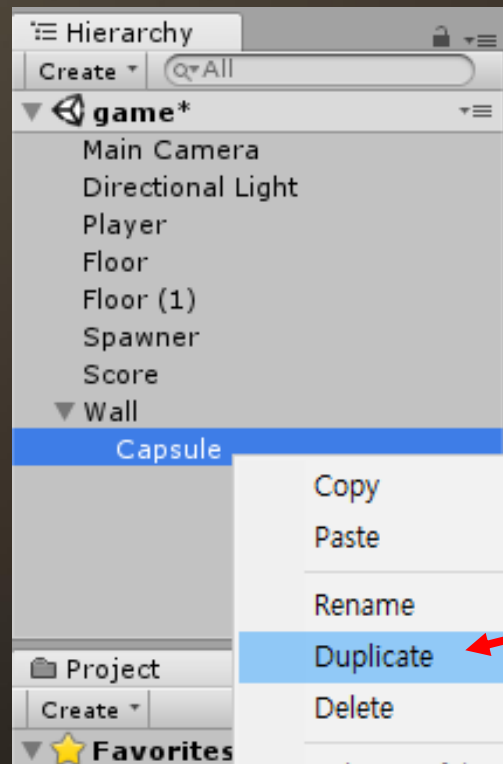


시도6: 다양한 종류의 벽

6

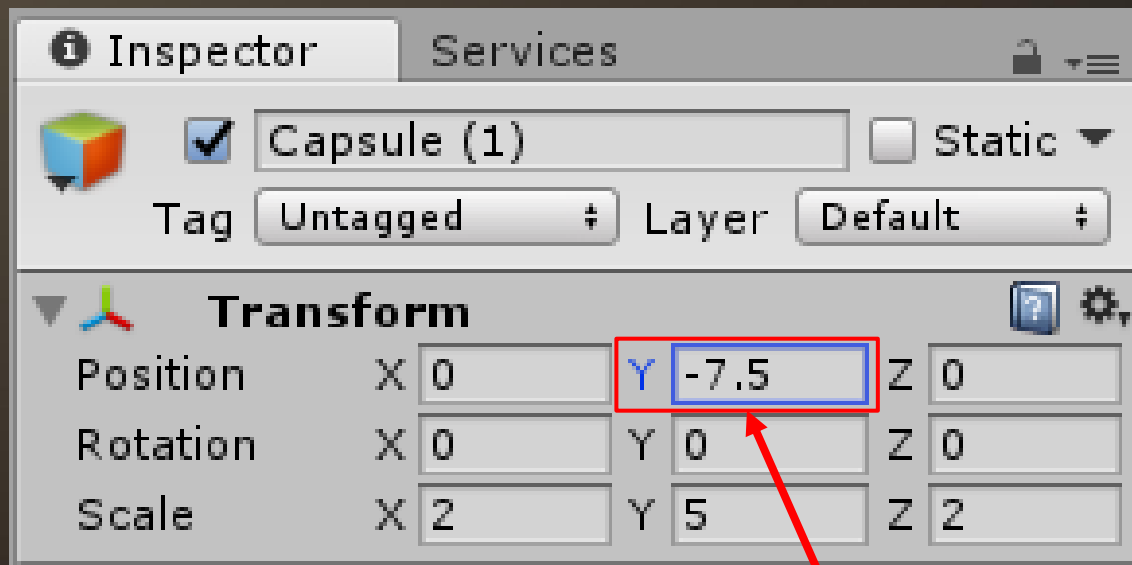
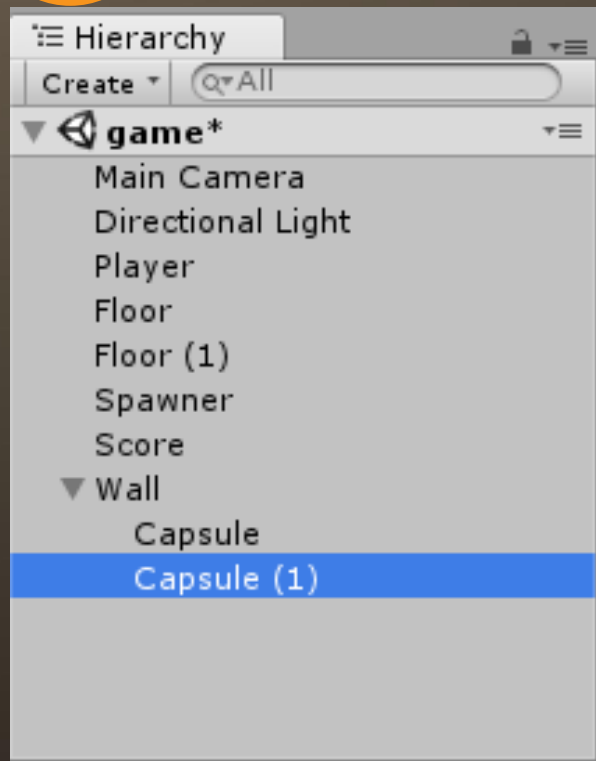


7



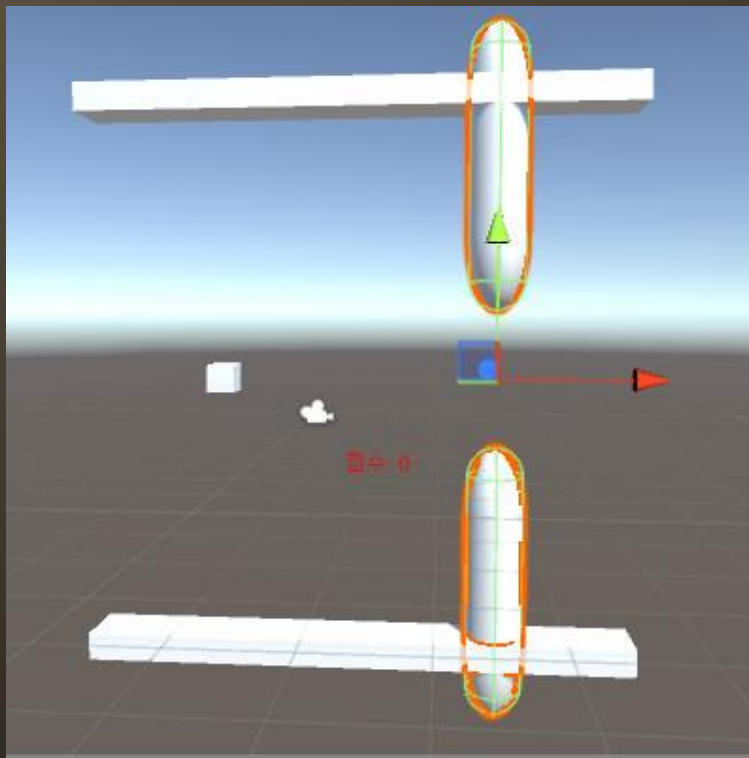


시도6: 다양한 종류의 벽



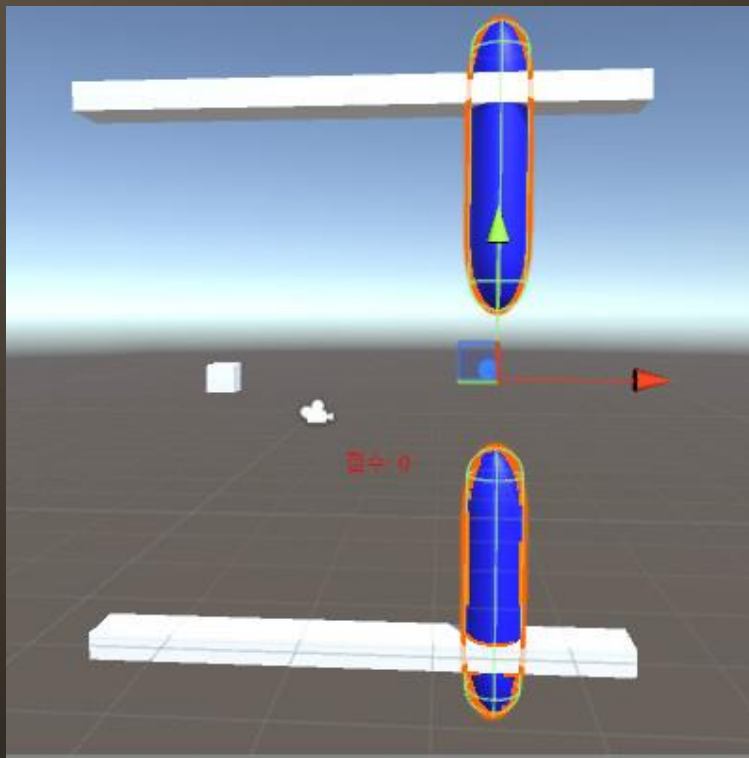


시도6: 다양한 종류의 벽



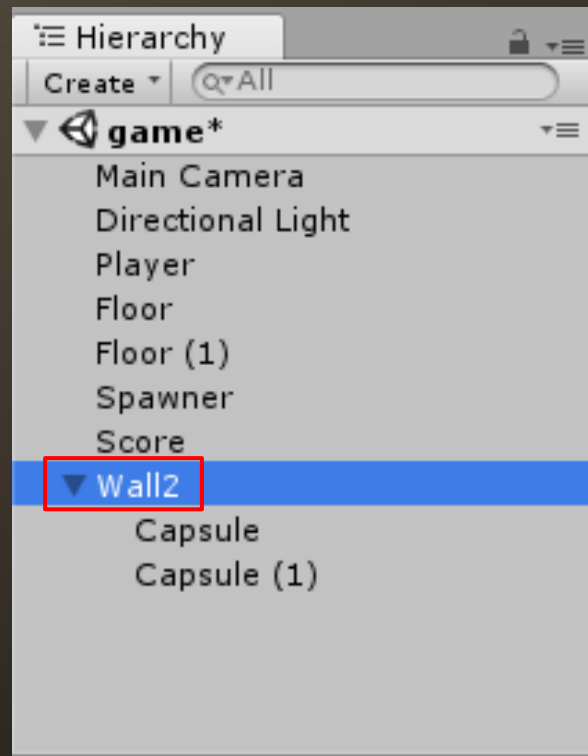
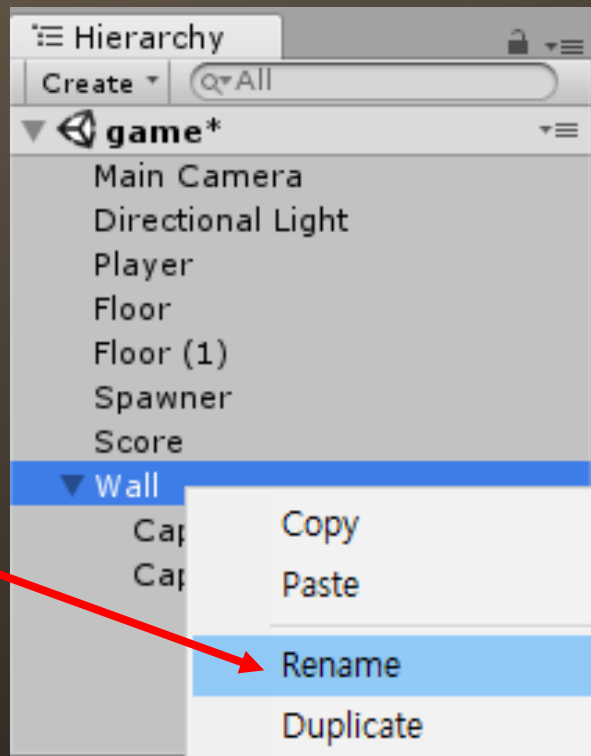


시도6: 다양한 종류의 벽



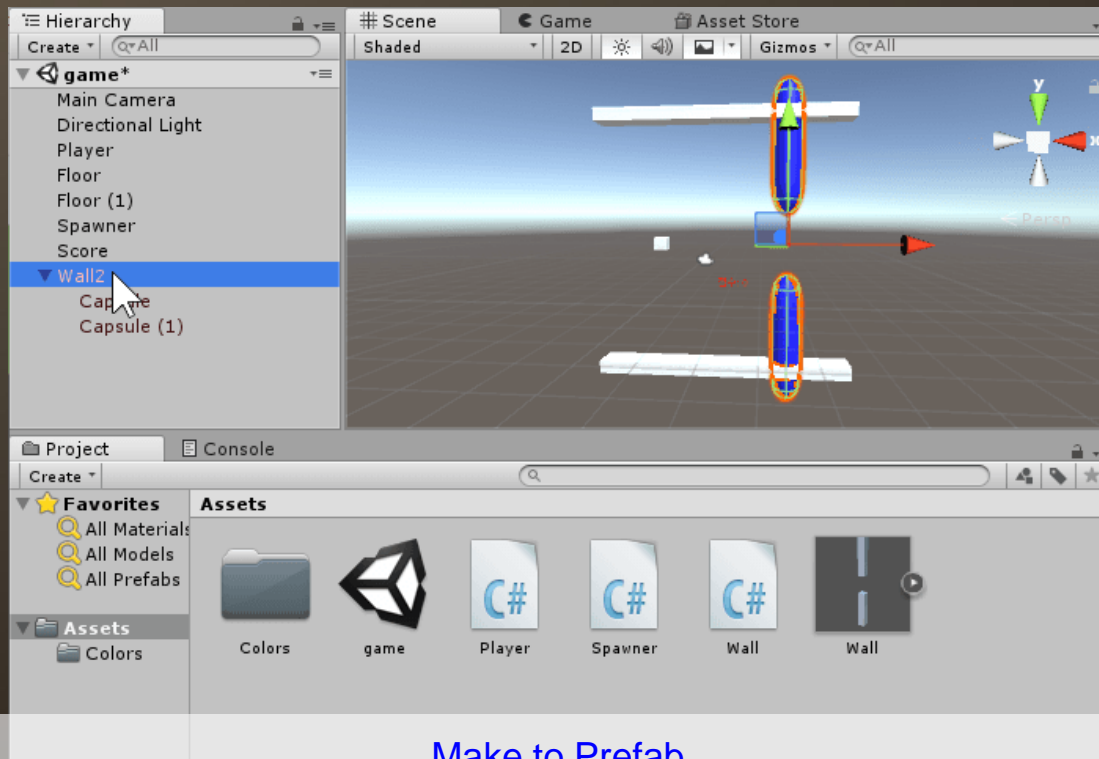


시도6: 다양한 종류의 벽





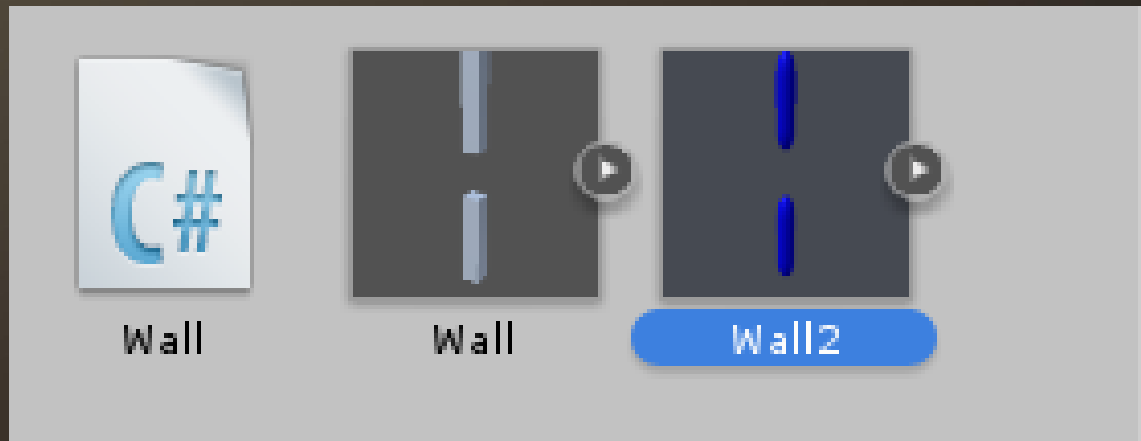
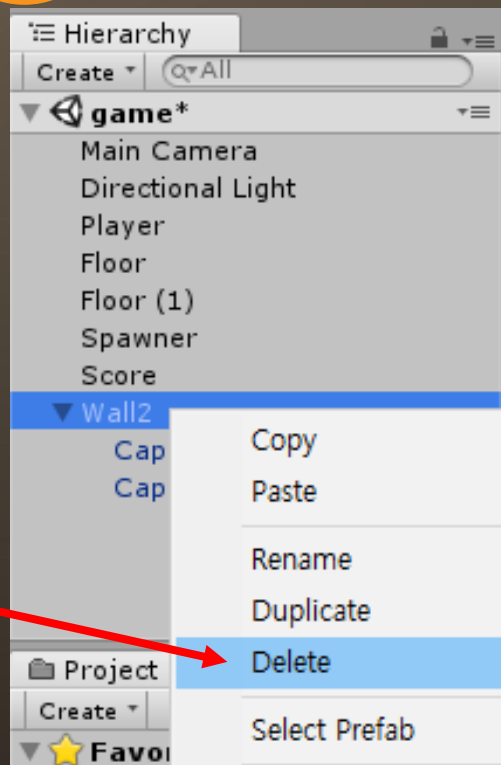
시도6: 다양한 종류의 벽



Make to Prefab



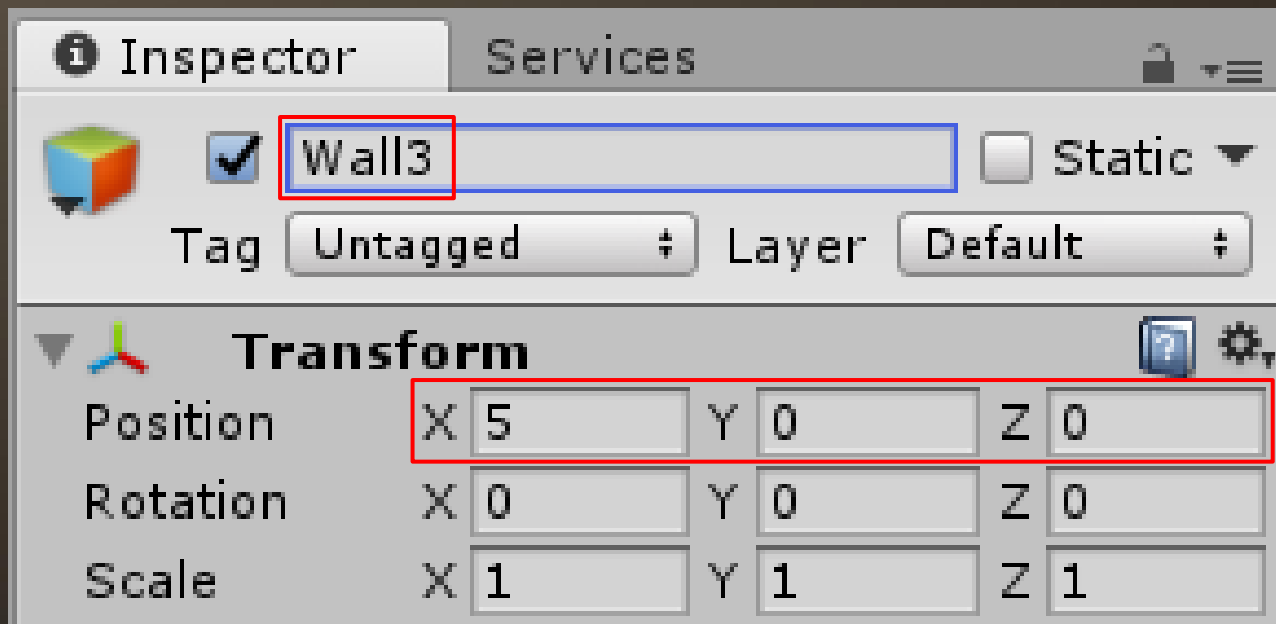
시도6: 다양한 종류의 벽





시도6: 다양한 종류의 벽

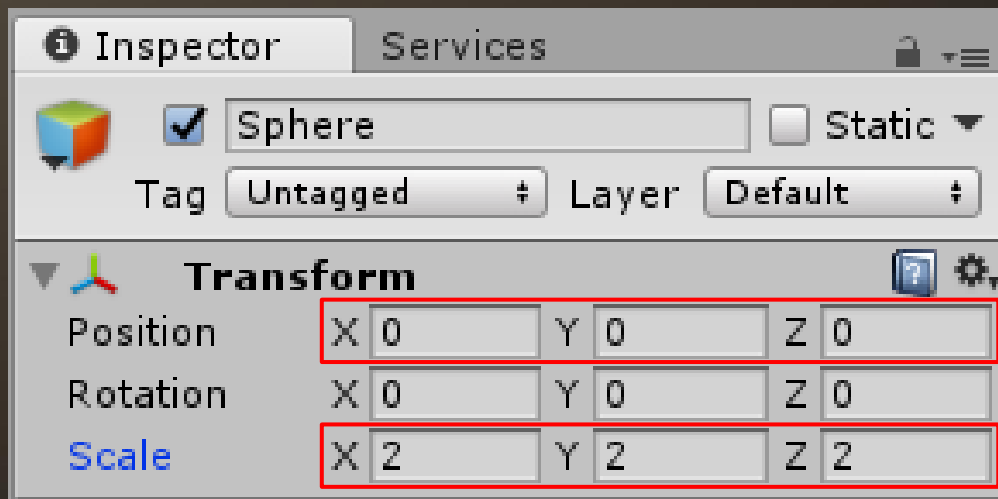
● GameObject > Create Empty





시도6: 다양한 종류의 벽

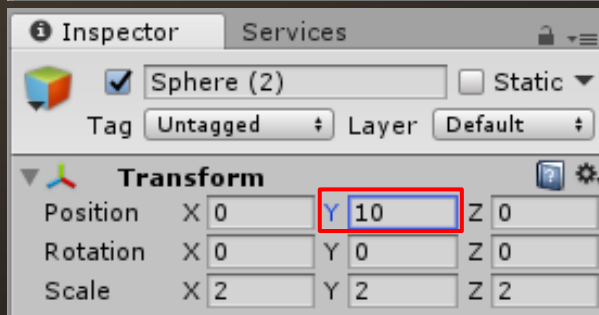
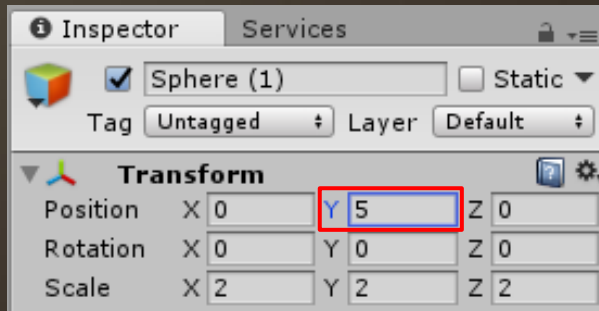
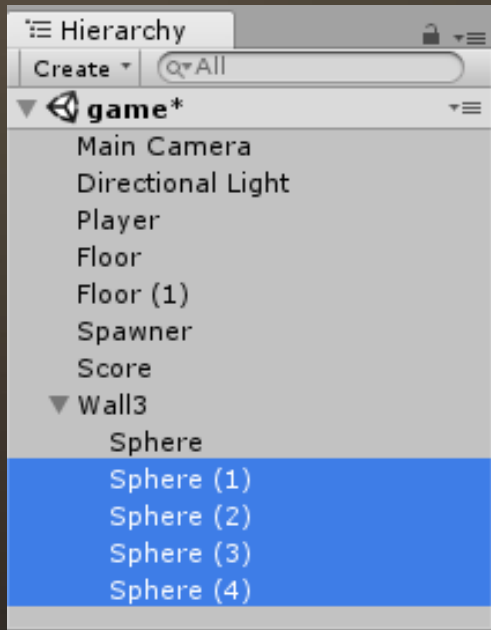
● GameObject > 3D Object > Sphere





시도6: 다양한 종류의 벽

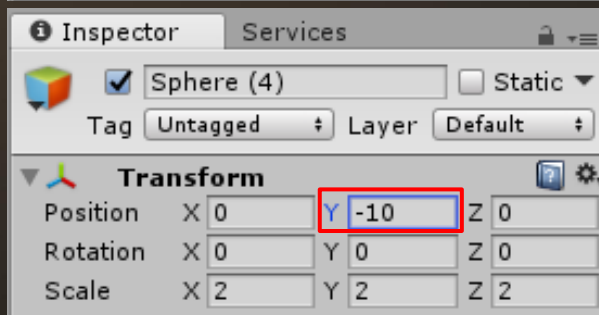
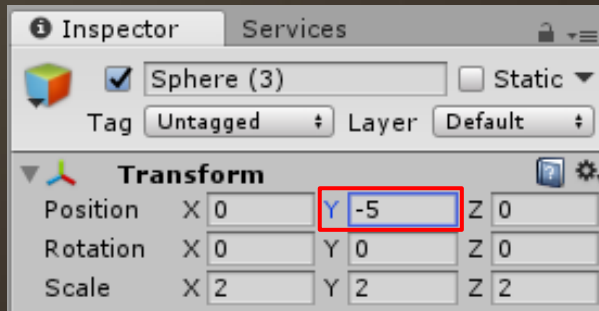
● Sphere > Duplicate





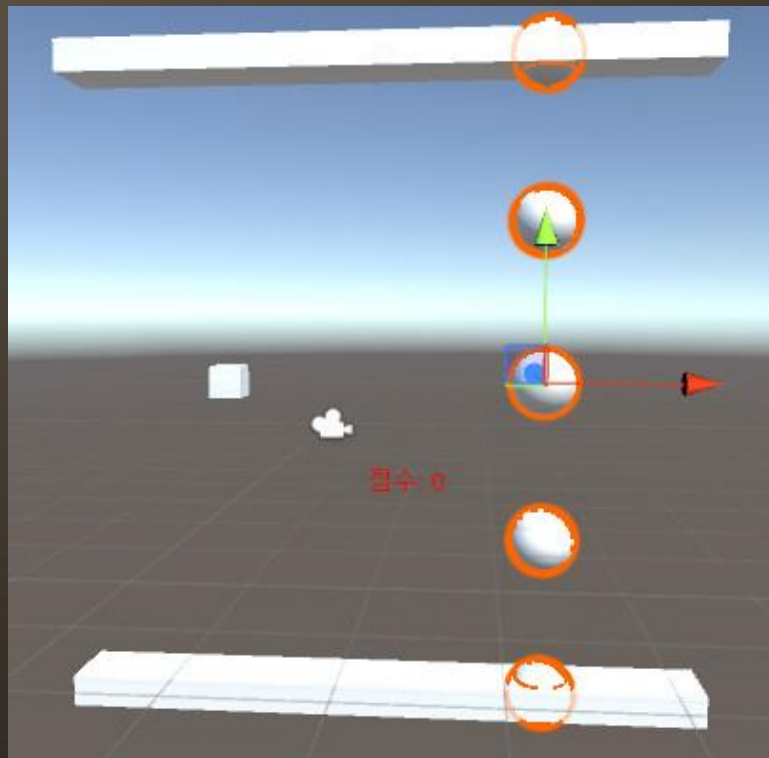
시도6: 다양한 종류의 벽

● Sphere > Duplicate





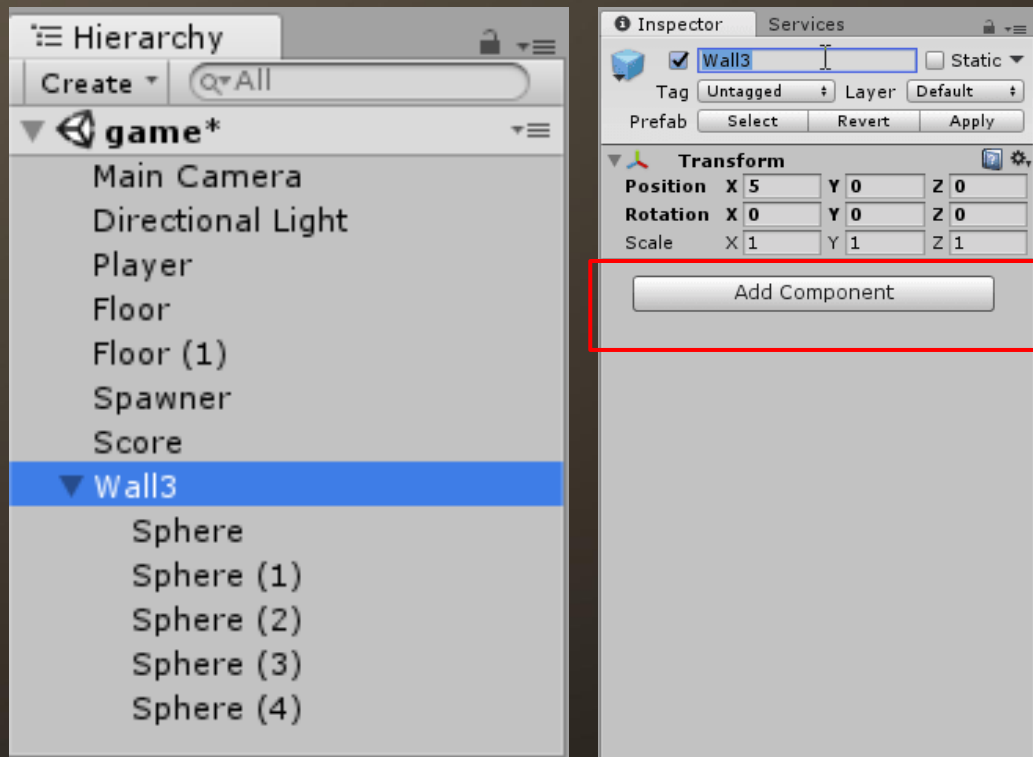
시도6: 다양한 종류의 벽





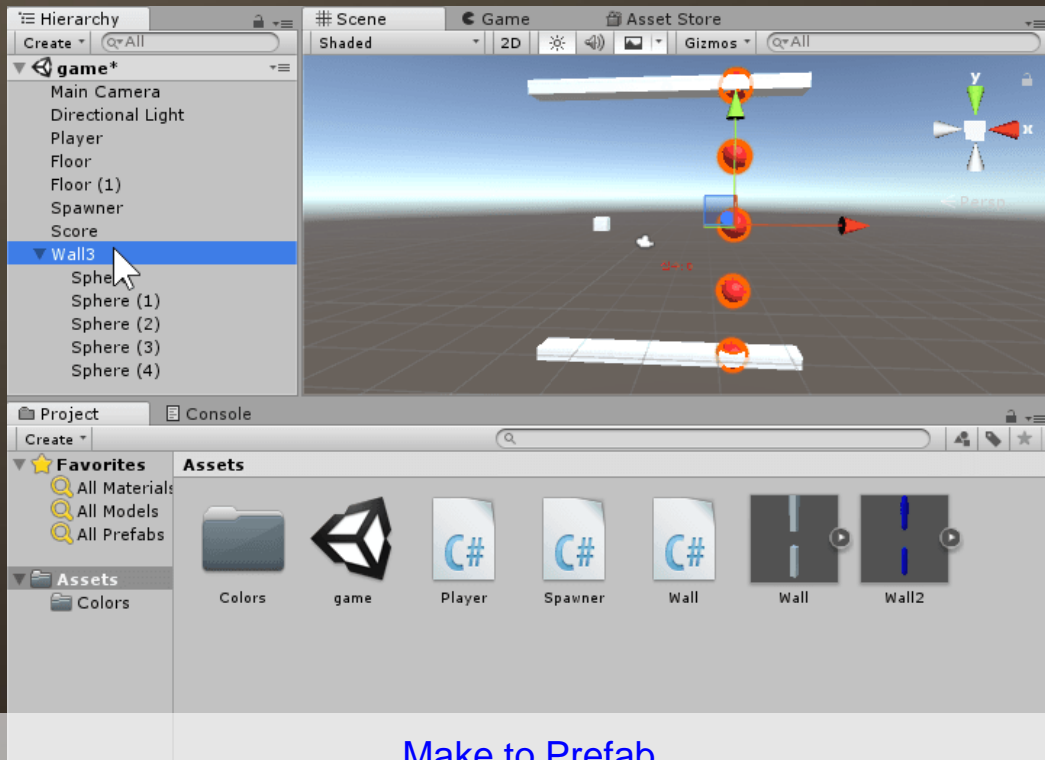


시도6: 다양한 종류의 벽



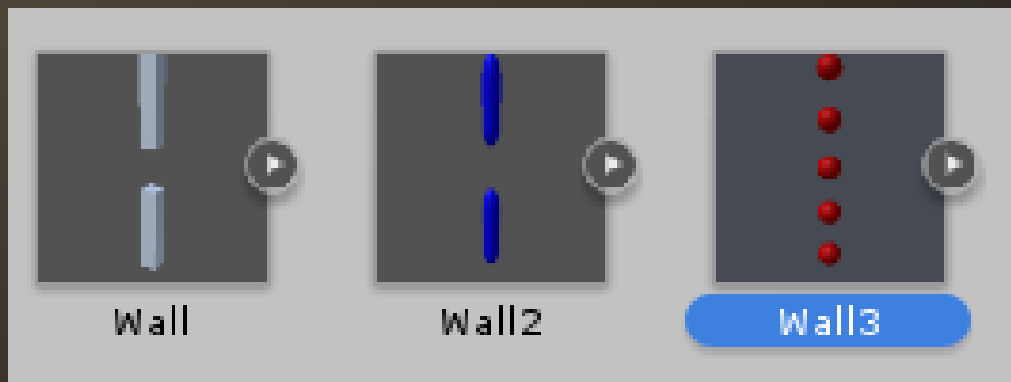
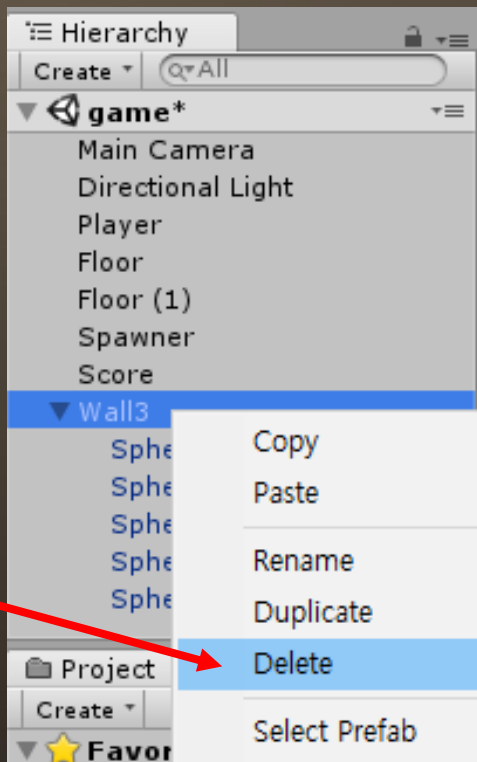


시도6: 다양한 종류의 벽





시도6: 다양한 종류의 벽





시도6: 다양한 종류의 벽

```
public class Spawner : MonoBehaviour {  
  
    public GameObject[] wallPrefab;  
    public float interval = 1.5f;  
    public float range = 3;  
    float term;
```



시도6: 다양한 종류의 벽

```
// Update is called once per frame
```

```
void Update () {
```

```
    term += Time.deltaTime;
```

```
    if (term >= interval)
```

```
    {
```

```
        Vector3 pos = transform.position;
```

```
        pos.y += Random.Range(-range, range);
```

```
        int wallType = Random.Range(0, wallPrefab.Length);
```

```
        Instantiate(wallPrefab[wallType], pos,
```

```
transform.rotation);
```

```
        term -= interval;
```

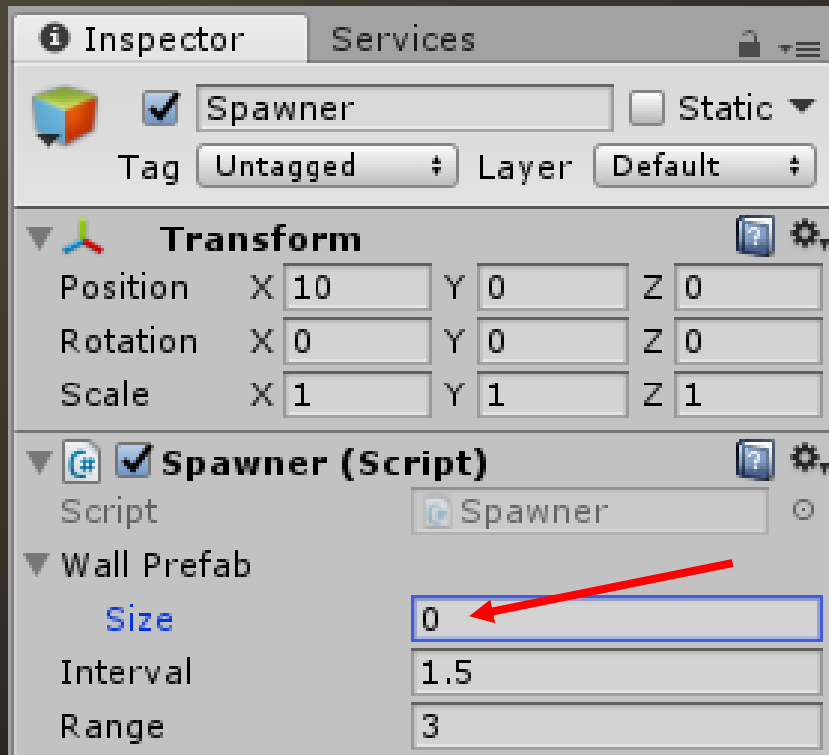
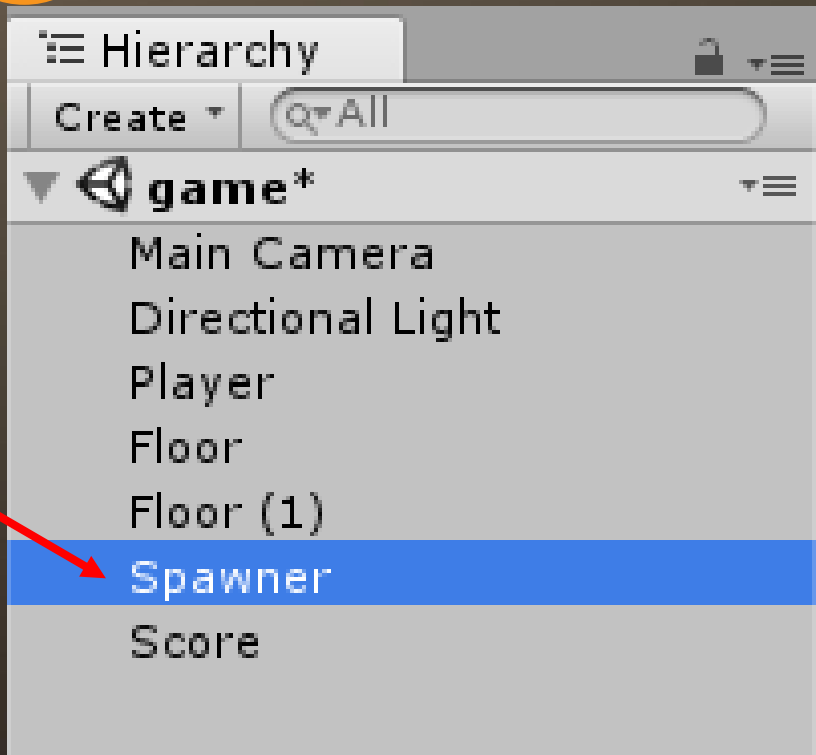
```
    }
```

```
}
```

```
}
```

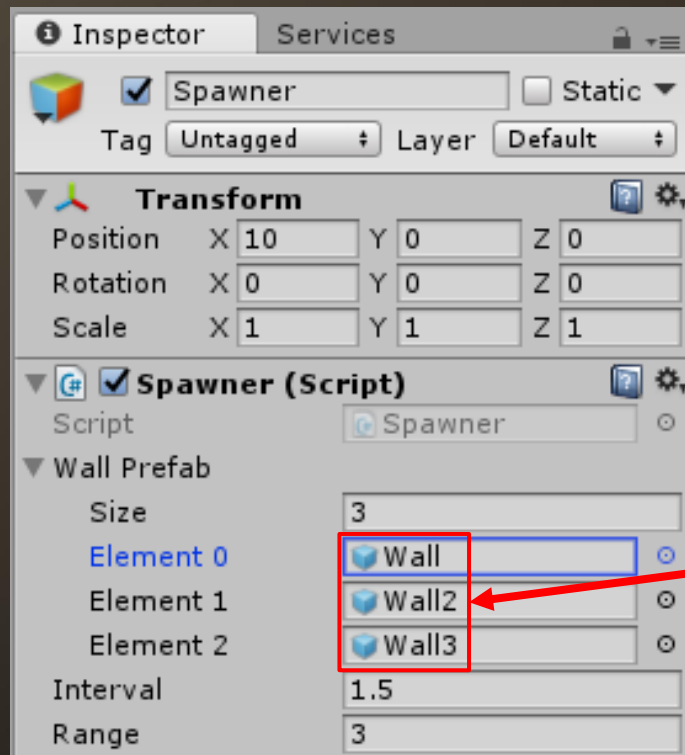
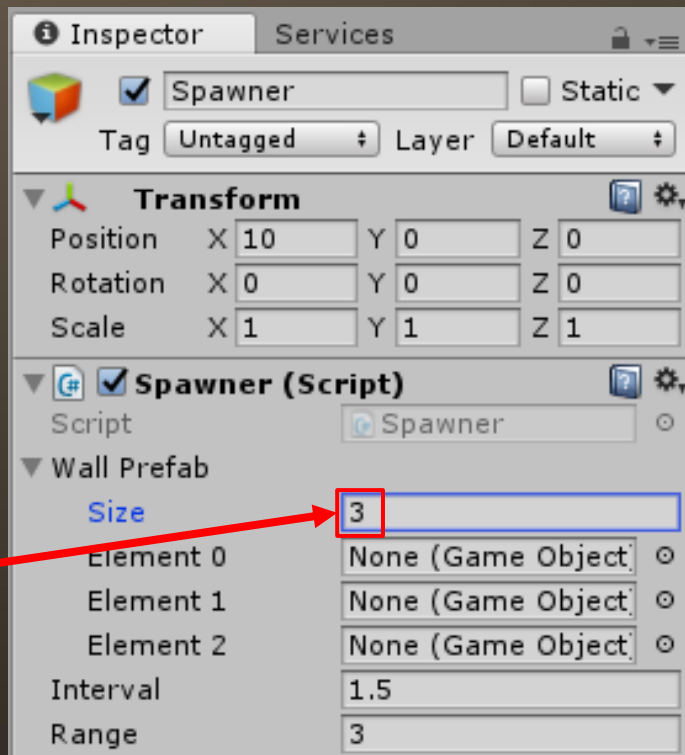


시도6: 다양한 종류의 벽



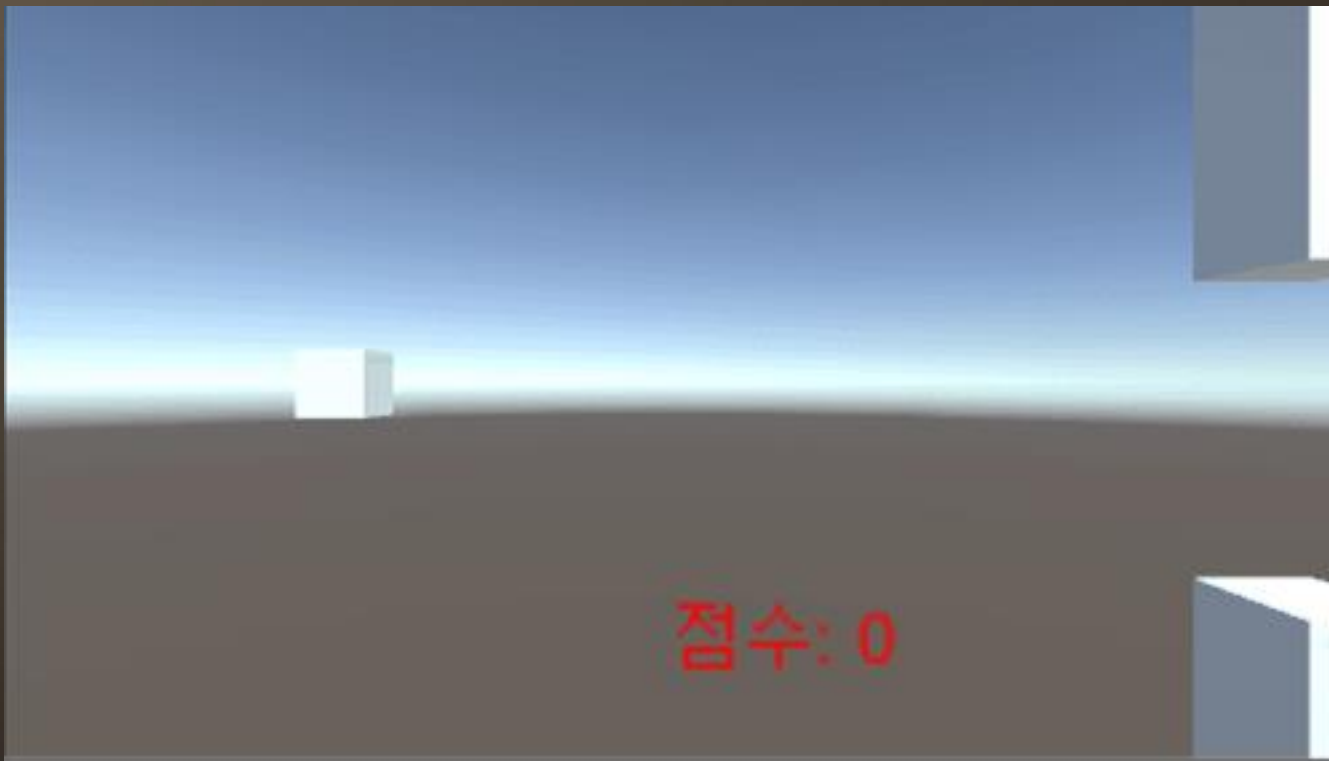


시도6: 다양한 종류의 벽





시도6: 다양한 종류의 벽





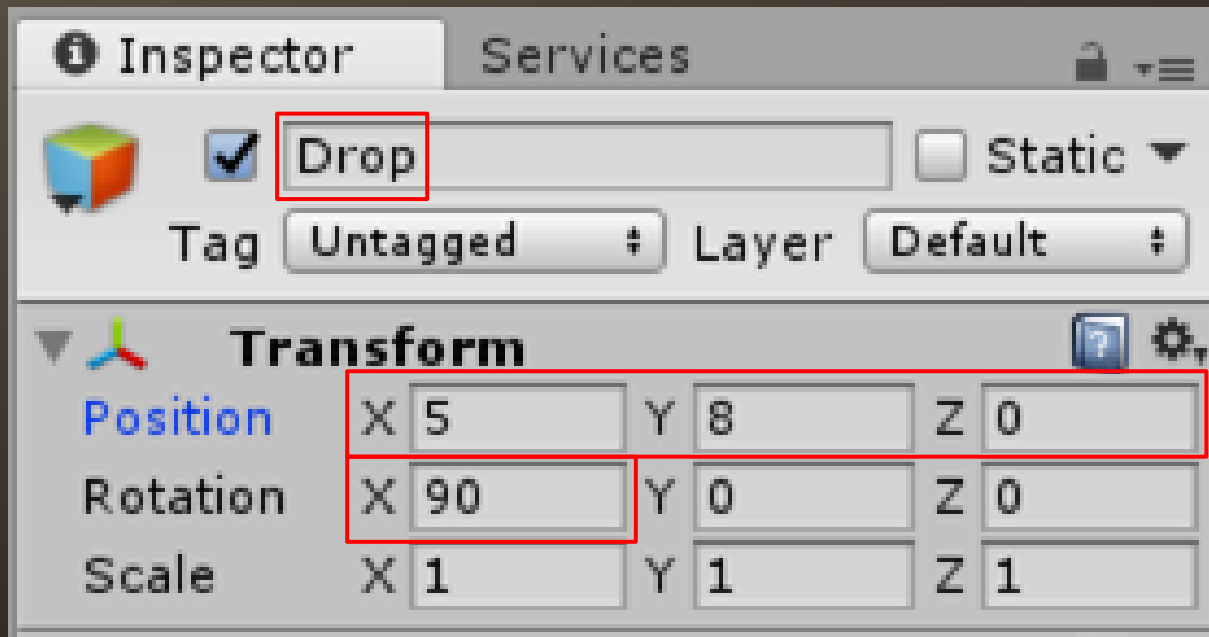
Try 7

위에서 떨어지는 장애물



시도7: 위에서 떨어지는 장애물

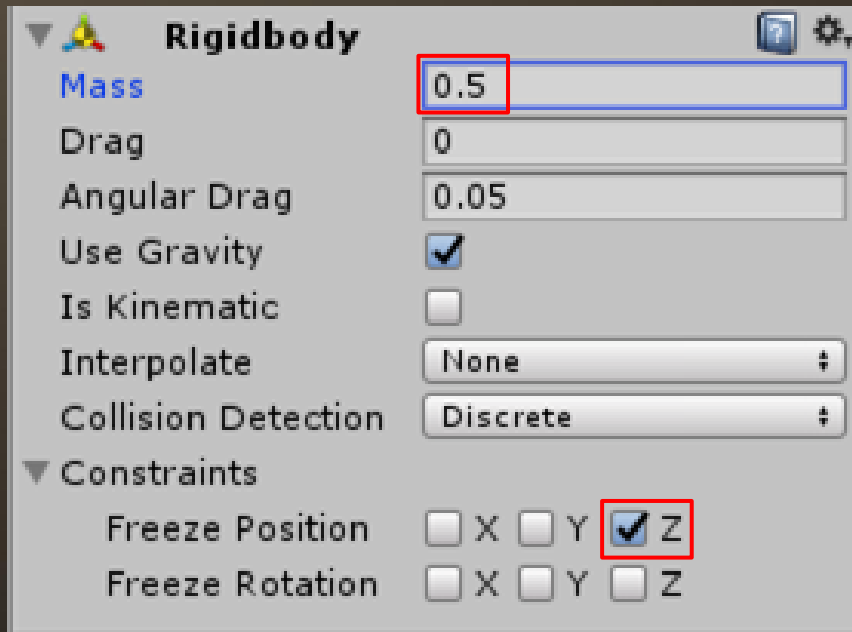
● GameObject > 3D Object > Cylinder





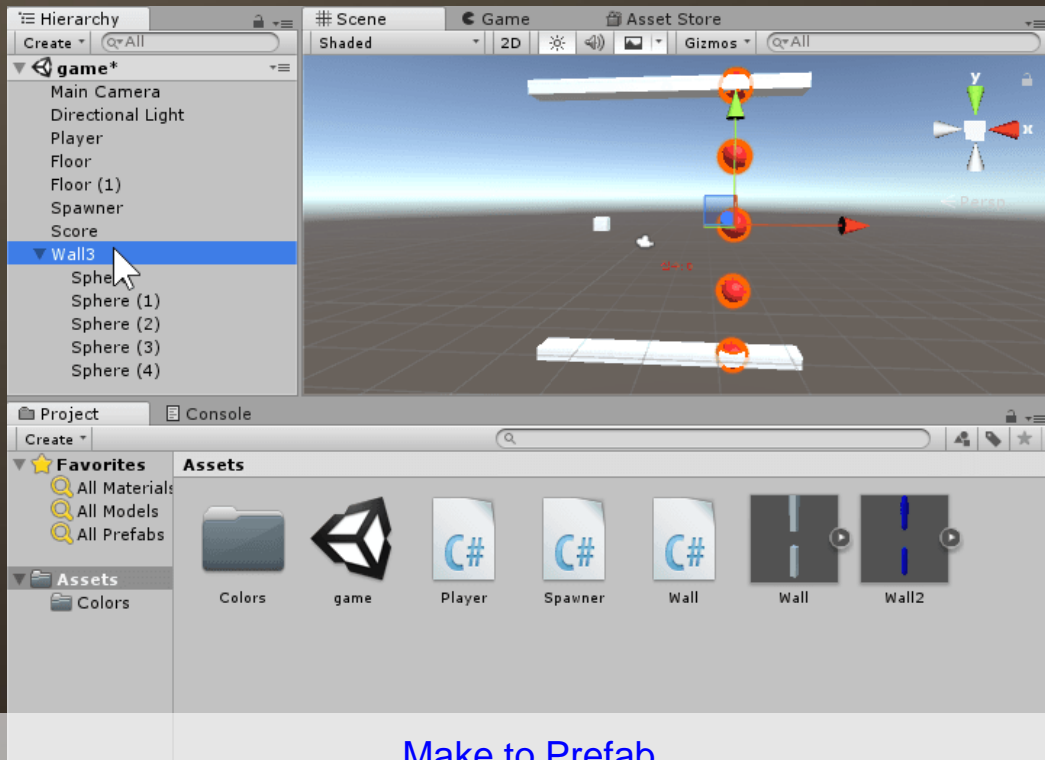
시도7: 위에서 떨어지는 장애물

● Component > Physics > Rigidbody



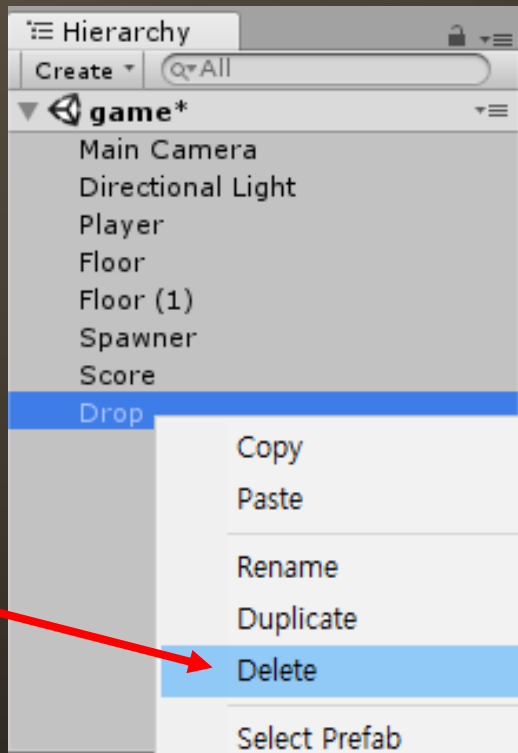


시도7: 위에서 떨어지는 장애물





시도7: 위에서 떨어지는 장애물





시도7: 위에서 떨어지는 장애물

```
public class Spawner : MonoBehaviour {  
  
    public GameObject[] wallPrefab;  
    public GameObject dropPrefab;  
    public float interval = 1.5f;  
    public float range = 3;  
    float term;
```

Spawner.cs

MiniGame

Spawner

Start()



시도7: 위에서 떨어지는 장애물

```
// Update is called once per frame
```

```
void Update () {
```

```
    term += Time.deltaTime;
```

```
    if (term >= interval)
```

```
    {
```

```
        Vector3 pos = transform.position;
```

```
        pos.y += Random.Range(-range, range);
```

```
        int wallType = Random.Range(0, wallPrefab.Length);
```

```
        Instantiate(wallPrefab[wallType], pos,
```

```
        transform.rotation);
```

```
        if (Random.Range(0, 2) == 0) // 50%의 확률로
```

```
            Instantiate(dropPrefab); // 떨어지는 장애물 생성
```

```
        term -= interval;
```

```
    }
```

Spawner.cs

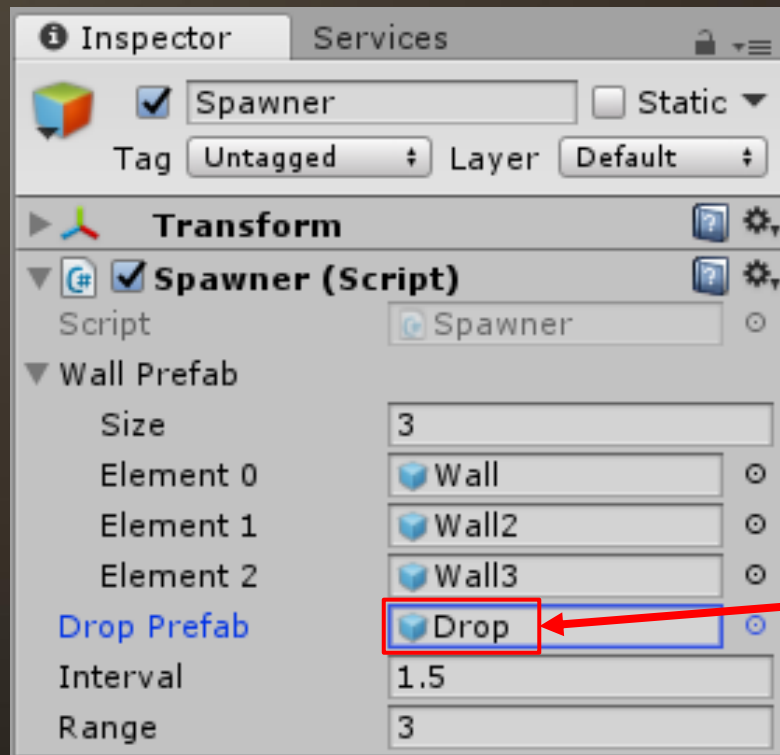
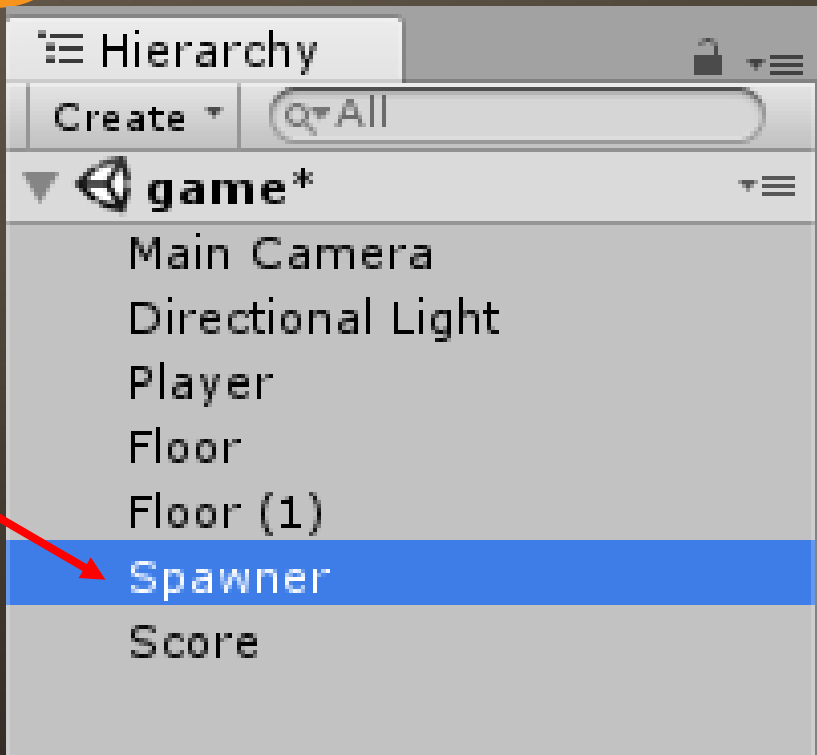
MiniGame

Spawner

Update()



시도7: 위에서 떨어지는 장애물





시도7: 위에서 떨어지는 장애물

