**Лабораторное занятие № 18.**

**Тема:** разработка проекта “ Snake”

**Цель:** разработать проект “ Snake”

Ход работы:

1.Создание поля.

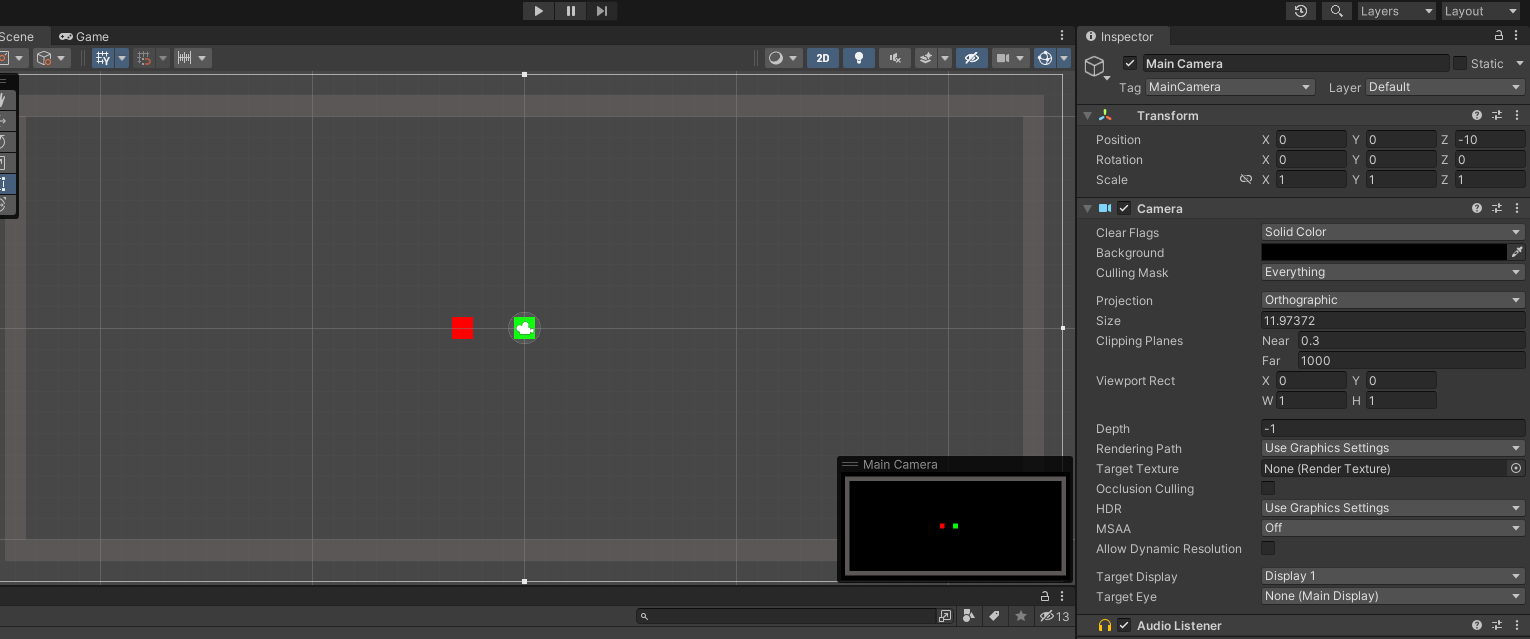


Рис.18.1 – Поле.

2. Создание игрока (Snake)

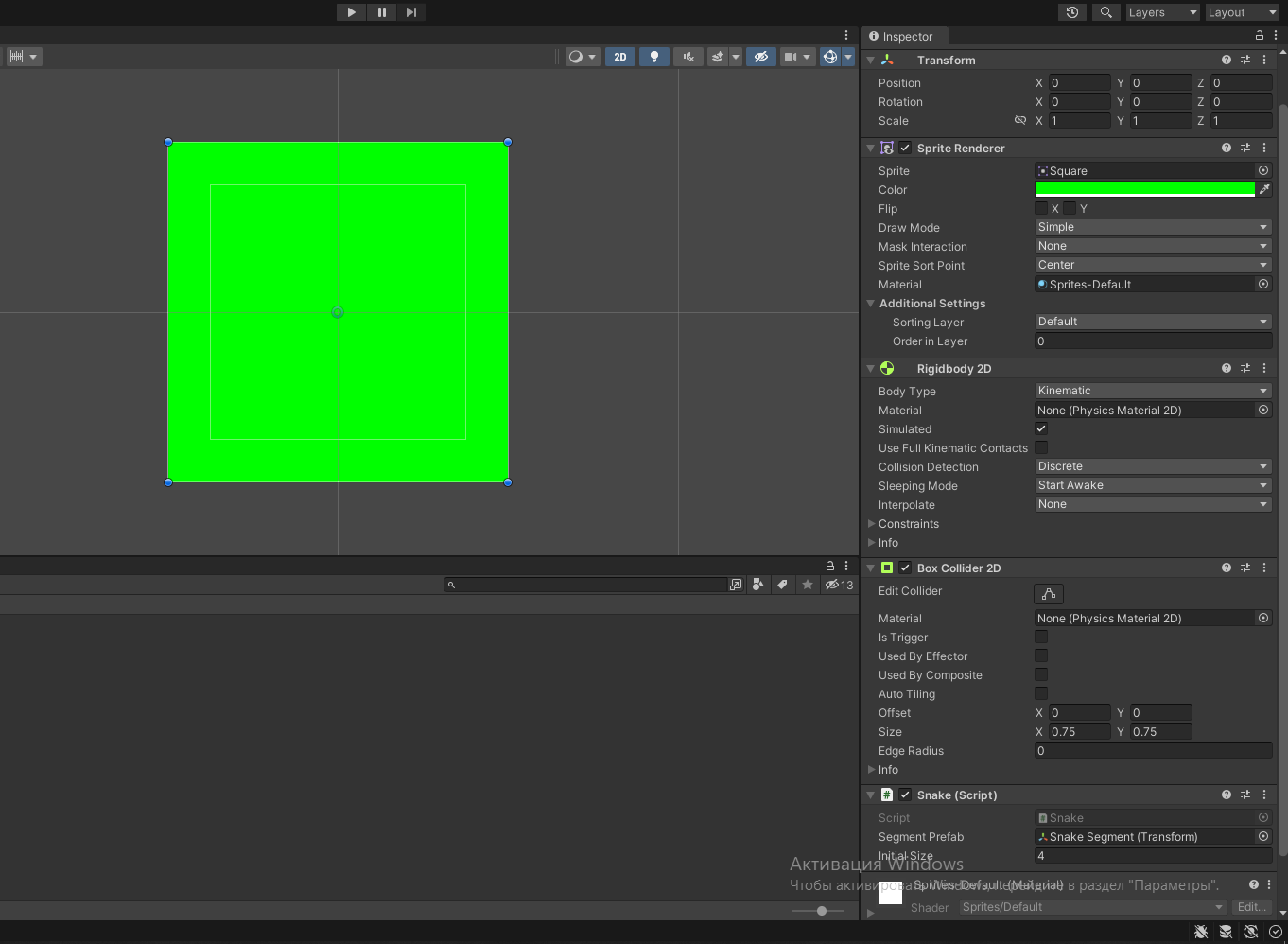


Рис.18.2 – Snake.

3. Создание объекта (Food)

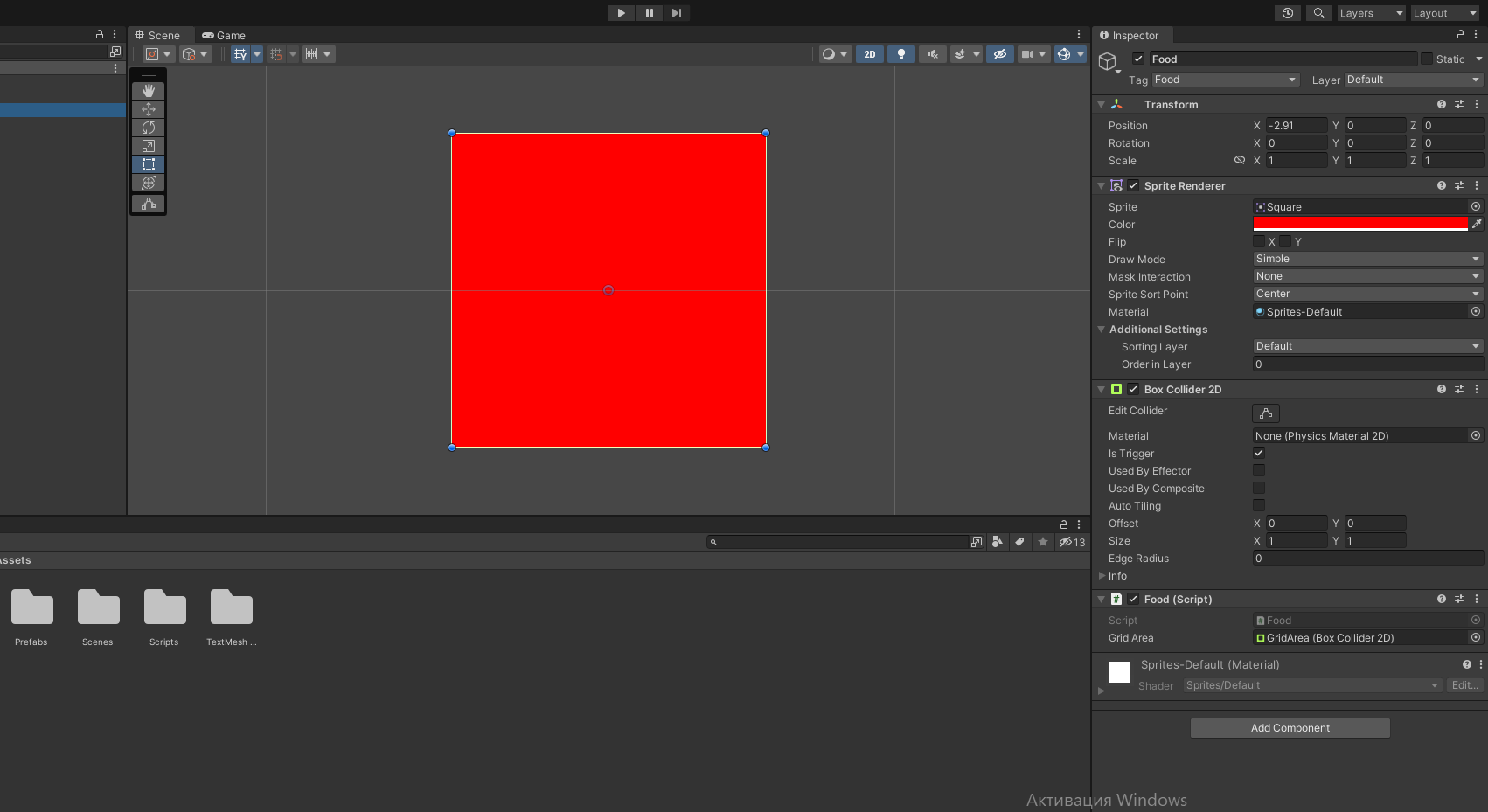


Рис.18.3 – Food

4. Создание скриптов.

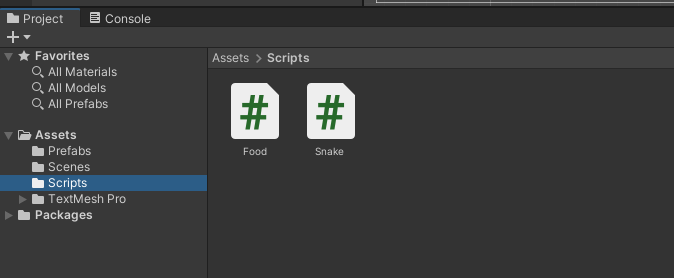


Рис.18.4– Скрипты.

Скрипты:

**Food**

using UnityEngine

public class Food : MonoBehaviour

{

public BoxCollider2D gridArea;

private void Start()

{

RandomizePosition();

}

private void RandomizePosition()

{

Bounds bounds = this.gridArea.bounds;

float x = Random.Range(bounds.min.x, bounds.max.x);

float y = Random.Range(bounds.min.y, bounds.max.y);

this.transform.position = new Vector3(Mathf.Round(x), Mathf.Round(y), 0.0f);

}

private void OnTriggerEnter2D(Collider2D other)

{

if (other.tag == "Player")

{

RandomizePosition();

}

}

}

**Snake**

using System.Collections;

using System.Collections.Generic;

using UnityEngine;

public class Snake : MonoBehaviour

{

private Vector2 \_direction = Vector2.right;

private List<Transform> \_segments = new List<Transform>();

public Transform segmentPrefab;

public int initialSize = 4;

private void Start()

{

ResetState();

}

private void Update()

{

if (Input.GetKeyDown(KeyCode.W))

{

\_direction = Vector2.up;

}

else if (Input.GetKeyDown(KeyCode.S))

{

\_direction = Vector2.down;

}

else if (Input.GetKeyDown(KeyCode.A))

{

\_direction = Vector2.left;

}

else if (Input.GetKeyDown(KeyCode.D))

{

\_direction = Vector2.right;

}

}

private void FixedUpdate()

{

for (int i = \_segments.Count - 1; i > 0; i--)

{

\_segments[i].position = \_segments[i - 1].position;

}

this.transform.position = new Vector3(

Mathf.Round(this.transform.position.x) + \_direction.x,

Mathf.Round(this.transform.position.y) + \_direction.y,

0.0f);

}

private void Grow()

{

Transform segment = Instantiate(this.segmentPrefab);

segment.position = \_segments[\_segments.Count - 1].position;

\_segments.Add(segment);

}

private void ResetState()

{

for (int i = 1; i < \_segments.Count; i++)

{

Destroy(\_segments[i].gameObject);

}

\_segments.Clear();

\_segments.Add(this.transform);

for (int i = 1; i < this.initialSize; i++)

{

\_segments.Add(Instantiate(this.segmentPrefab));

}

this.transform.position = Vector3.zero;

}

private void OnTriggerEnter2D(Collider2D other)

{

if (other.tag == "Food")

{

Grow();

}

else if (other.tag == "Obstacle")

{

ResetState();

}

}

}

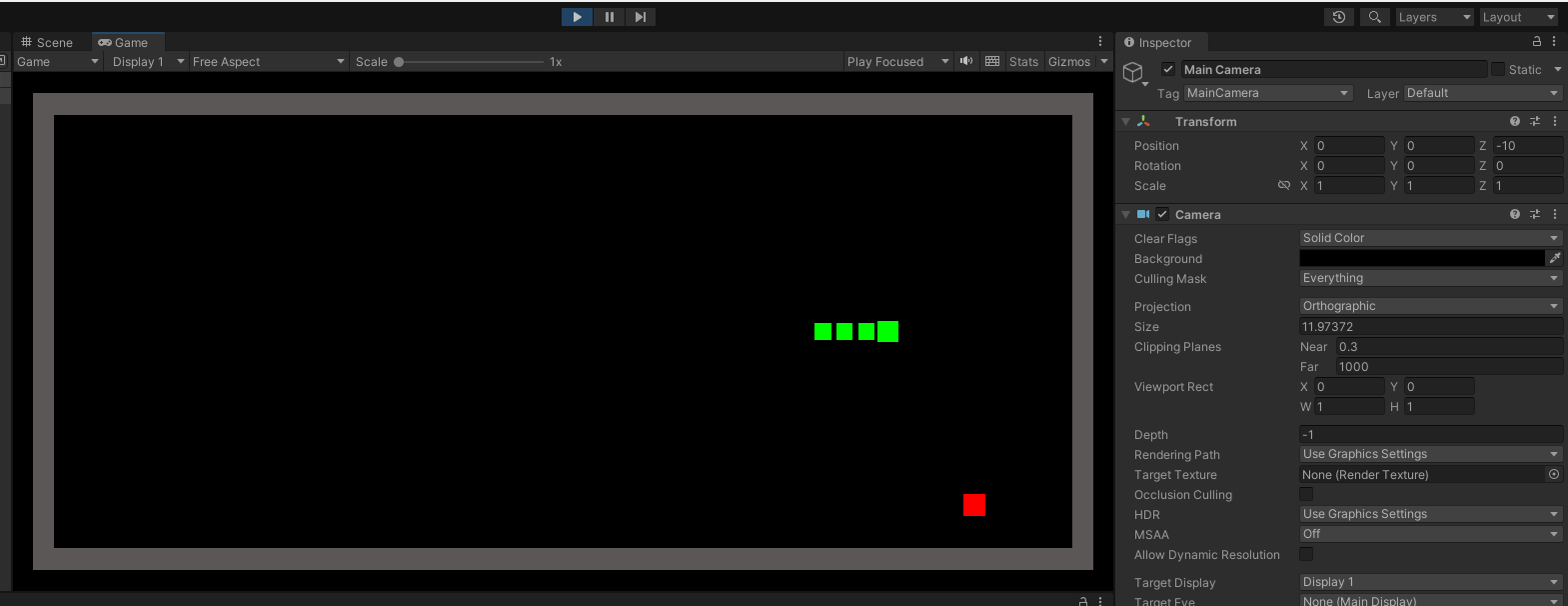


Рис 18.5 Геймплей

Вывод:Игра Snake сделана.