

No.1 Player.cs

```
1 using System;
2 using System.Collections;
3 using System.Collections.Generic;
4 using UnityEngine;
5 using UnityEngine.UI;
6 using UnityEngine.SceneManagement;
7
8
9 public class Player : MonoBehaviour
10 {
11     [SerializeField] private Image imageHP;
12
13     [Header("弾のPrefabを指定")]
14     [SerializeField] private GameObject bulletData;
15     [Header("弾を発射する間隔")]
16     [SerializeField] private float bulletSpan;
17
18     private float moveX;
19     private float moveY;
20     private Rigidbody2D rb2;
21     private float speedData;
22     private float timeSpan;
23
24     // Start is called before the first frame update
25     void Start()
26     {
27         //コンポーネント取得
28         rb2 = GetComponent<Rigidbody2D>();
29
30         //スピード係数
31         speedData = 5.0f;
32
33         //時間設定
34         timeSpan = bulletSpan;
35     }
36
37     // Update is called once per frame
38     void Update()
39     {
40         //入力判定
41         moveX = Input.GetAxisRaw("Horizontal");
42         moveY = Input.GetAxisRaw("Vertical");
43
44         //移動
45         rb2.velocity = new Vector2(moveX * speedData, moveY * speedData);
46
47         //弾を発射する関数
48         PlayerBullet();
49     }
50
51     //当たり判定
52     private void OnTriggerEnter2D(Collider2D other)
53     {
54         imageHP.fillAmount -= 0.1f;
55
56         if (imageHP.fillAmount == 0f)
57         {
58             SceneManager.LoadScene("GameOver");
59         }
60     }
61
62     private void PlayerBullet()
63     {
64         //規定時間経過したか判定
65         if (timeSpan <= 0)
66         {
67             timeSpan = bulletSpan;
68
69             if (Input.GetButton("Jump"))
70             {
71                 BulletFire(90.0f);
72             }
73         }
74         else
75         {
76             //カウントダウン
77             timeSpan -= Time.deltaTime;
78         }
79     }
80 }
```

```
79 }
80 }
81 private void BulletFire(float val)
82 {
83     //弾を生成
84     GameObject enemy = Instantiate(bulletData, transform.position, Quaternion.identity);
85     enemy.GetComponent<Bullet>().Init(val);
86 }
87 }
88 }
```

No.2 Player.cs

```
1 using System;
2 using System.Collections;
3 using System.Collections.Generic;
4 using UnityEngine;
5 using UnityEngine.UI;
6 using UnityEngine.SceneManagement;
7
8
9 public class Player : MonoBehaviour
10 {
11     [SerializeField] private Image imageHP;
12
13     [Header("弾のPrefabを指定")]
14     [SerializeField] private GameObject bulletData;
15     [Header("弾を発射する間隔")]
16     [SerializeField] private float bulletSpan;
17     [Header("弾の起点となる場所")]
18     [SerializeField] private float bulletPosOffset;
19
20     private float moveX;
21     private float moveY;
22     private Rigidbody2D rb2;
23     private float speedData;
24     private float timeSpan;
25
26     // Start is called before the first frame update
27     void Start()
28     {
29         //コンポーネント取得
30         rb2 = GetComponent<Rigidbody2D>();
31
32         //スピード係数
33         speedData = 5.0f;
34
35         //時間設定
36         timeSpan = bulletSpan;
37     }
38
39     // Update is called once per frame
40     void Update()
41     {
42         //入力判定
43         moveX = Input.GetAxisRaw("Horizontal");
44         moveY = Input.GetAxisRaw("Vertical");
45
46         //移動
47         rb2.velocity = new Vector2(moveX * speedData, moveY * speedData);
48
49         //弾を発射する関数
50         PlayerBullet();
51     }
52
53     //当たり判定
54     private void OnTriggerEnter2D(Collider2D other)
55     {
56         imageHP.fillAmount -= 0.1f;
57
58         if (imageHP.fillAmount == 0f)
59         {
60             SceneManager.LoadScene("GameOver");
61         }
62     }
63
64     private void PlayerBullet()
65     {
66         //規定時間経過したか判定
67         if (timeSpan <= 0)
68         {
69             timeSpan = bulletSpan;
70
71             if (Input.GetButton("Jump"))
72             {
73                 BulletFire(90.0f);
74             }
75         }
76         else
77         {
78             //カウントダウン
```

```
79     timeSpan -= Time.deltaTime;
80     }
81     }
82     }
83     private void BulletFire(float val)
84     {
85         //弾の発射位置調整
86         Vector3 vec3;
87         vec3 = transform.position;
88         vec3.y += bulletPosOffset;
89
90         //弾を生成
91         //GameObject enemy = Instantiate(bulletData, transform.position, Quaternion.identity);
92         GameObject enemy = Instantiate(bulletData, vec3, Quaternion.identity);
93         enemy.GetComponent<Bullet>().Init(val);
94     }
95     }
96 }
```

No.3 Enemy.cs

```
1 using System.Collections;
2 using System.Collections.Generic;
3 using UnityEngine;
4
5 public class Enemy : MonoBehaviour
6 {
7     [SerializeField] private GameObject bulletData;
8
9     private float timeSpan;
10    float bulletAngle;
11
12    // Start is called before the first frame update
13    void Start()
14    {
15        //時間設定
16        timeSpan = 0.1f;
17    }
18
19    // Update is called once per frame
20    void Update()
21    {
22
23        int bulletCount;
24
25        //規定時間経過したか判定
26        if (timeSpan <= 0)
27        {
28            //時間設定
29            timeSpan = 0.1f;
30
31            //弾を生成
32            float f = 1.0f / 4.0f;
33            bulletAngle = Mathf.Sin(Time.time * (2 * Mathf.PI) * f) * 90;
34            bulletCount = 4;
35            for (int i = 0; i < bulletCount; i++)
36            {
37                bulletAngle += 360 / bulletCount;
38                BulletFire(bulletAngle);
39            }
40        }
41        else
42        {
43            //カウントダウン
44            timeSpan -= Time.deltaTime;
45        }
46    }
47
48    private void BulletFire(float val)
49    {
50        //弾を生成
51        GameObject enemy = Instantiate(bulletData, transform.position, Quaternion.identity);
52        enemy.GetComponent<Bullet>().Init(val);
53    }
54
55    //当たり判定
56    private void OnTriggerEnter2D(Collider2D other)
57    {
58        Destroy(gameObject);
59    }
60 }
61
```

No.4 Enemy.cs

```
1 using System.Collections;
2 using System.Collections.Generic;
3 using UnityEngine;
4
5 public class Enemy : MonoBehaviour
6 {
7     [SerializeField] private GameObject bulletData;
8
9     private float timeSpan;
10    float bulletAngle;
11
12    // Start is called before the first frame update
13    void Start()
14    {
15        //時間設定
16        timeSpan = 0.1f;
17    }
18
19    // Update is called once per frame
20    void Update()
21    {
22
23        int bulletCount;
24
25        //規定時間経過したか判定
26        if (timeSpan <= 0)
27        {
28            //時間設定
29            timeSpan = 0.1f;
30
31            //弾を生成
32            float f = 1.0f / 4.0f;
33            bulletAngle = Mathf.Sin(Time.time * (2 * Mathf.PI) * f) * 90;
34            bulletCount = 4;
35            for (int i = 0; i < bulletCount; i++)
36            {
37                bulletAngle += 360 / bulletCount;
38                BulletFire(bulletAngle);
39            }
40        }
41        else
42        {
43            //カウントダウン
44            timeSpan -= Time.deltaTime;
45        }
46    }
47
48    private void BulletFire(float val)
49    {
50        //弾を生成
51        GameObject enemy = Instantiate(bulletData, transform.position, Quaternion.identity);
52        enemy.GetComponent<Bullet>().Init(val);
53    }
54
55    //当たり判定
56    private void OnTriggerEnter2D(Collider2D other)
57    {
58        if (other.gameObject.CompareTag("PlayerBullet"))
59        {
60            Destroy(gameObject);
61        }
62    }
63 }
64
```

No.5 Player.cs

```
1 using System;
2 using System.Collections;
3 using System.Collections.Generic;
4 using UnityEngine;
5 using UnityEngine.UI;
6 using UnityEngine.SceneManagement;
7
8
9 public class Player : MonoBehaviour
10 {
11     [SerializeField] private Image imageHP;
12
13     [Header("弾のPrefabを指定")]
14     [SerializeField] private GameObject bulletData;
15     [Header("弾を発射する間隔")]
16     [SerializeField] private float bulletSpan;
17     [Header("弾の起点となる場所")]
18     [SerializeField] private float bulletPosOffset;
19
20     private float moveX;
21     private float moveY;
22     private Rigidbody2D rb2;
23     private float speedData;
24     private float timeSpan;
25
26     // Start is called before the first frame update
27     void Start()
28     {
29         //コンポーネント取得
30         rb2 = GetComponent<Rigidbody2D>();
31
32         //スピード係数
33         speedData = 5.0f;
34
35         //時間設定
36         timeSpan = bulletSpan;
37     }
38
39     // Update is called once per frame
40     void Update()
41     {
42         //入力判定
43         moveX = Input.GetAxisRaw("Horizontal");
44         moveY = Input.GetAxisRaw("Vertical");
45
46         //移動
47         rb2.velocity = new Vector2(moveX * speedData, moveY * speedData);
48
49         //弾を発射する関数
50         PlayerBullet();
51     }
52
53     //当たり判定
54     private void OnTriggerEnter2D(Collider2D other)
55     {
56         imageHP.fillAmount -= 0.1f;
57
58         if (imageHP.fillAmount == 0f)
59         {
60             SceneManager.LoadScene("GameOver");
61         }
62     }
63
64     private void PlayerBullet()
65     {
66         //規定時間経過したか判定
67         if (timeSpan <= 0)
68         {
69             timeSpan = bulletSpan;
70
71             if (Input.GetButton("Jump"))
72             {
73                 BulletFire(90.0f);
74                 BulletFire(80.0f);
75                 BulletFire(100.0f);
76             }
77         }
78         else
```

```
79     {
80         //カウントダウン
81         timeSpan -= Time.deltaTime;
82     }
83 }
84
85 private void BulletFire(float val)
86 {
87     //弾の発射位置調整
88     Vector3 vec3;
89     vec3 = transform.position;
90     vec3.y += bulletPosOffset;
91
92     //弾を生成
93     //GameObject enemy = Instantiate(bulletData, transform.position, Quaternion.identity);
94     GameObject enemy = Instantiate(bulletData, vec3, Quaternion.identity);
95     enemy.GetComponent<Bullet>().Init(val);
96 }
97 }
98 }
```


No.6 Enemy.cs

```
1 using System.Collections;
2 using System.Collections.Generic;
3 using UnityEngine;
4
5 public class Enemy : MonoBehaviour
6 {
7     [SerializeField] private GameObject bulletData;
8     [SerializeField] private int hpValue;
9
10    private float timeSpan;
11    float bulletAngle;
12
13    // Start is called before the first frame update
14    void Start()
15    {
16        //時間設定
17        timeSpan = 0.1f;
18    }
19
20    // Update is called once per frame
21    void Update()
22    {
23
24        int bulletCount;
25
26        //規定時間経過したか判定
27        if (timeSpan <= 0)
28        {
29            //時間設定
30            timeSpan = 0.1f;
31
32            //弾を生成
33            float f = 1.0f / 4.0f;
34            bulletAngle = Mathf.Sin(Time.time * (2 * Mathf.PI) * f) * 90;
35            bulletCount = 4;
36            for (int i = 0; i < bulletCount; i++)
37            {
38                bulletAngle += 360 / bulletCount;
39                BulletFire(bulletAngle);
40            }
41        }
42        else
43        {
44            //カウントダウン
45            timeSpan -= Time.deltaTime;
46        }
47    }
48
49    private void BulletFire(float val)
50    {
51        //弾を生成
52        GameObject enemy = Instantiate(bulletData, transform.position, Quaternion.identity);
53        enemy.GetComponent<Bullet>().Init(val);
54    }
55
56    //当たり判定
57    private void OnTriggerEnter2D(Collider2D other)
58    {
59        if (other.gameObject.CompareTag("PlayerBullet"))
60        {
61            //HPを減らす
62            hpValue--;
63
64            //0だったら消す
65            if (hpValue == 0)
66            {
67                Destroy(gameObject);
68            }
69        }
70    }
71 }
72
```

No.7 Bullet.cs

```
1 using System.Collections;
2 using System.Collections.Generic;
3 using UnityEngine;
4
5 public class Bullet : MonoBehaviour
6 {
7     private GameObject playerObj;
8     private GameObject enemyObj;
9     private Vector2 vec2;
10    [SerializeField] private float speedData;
11    private Rigidbody2D rb2;
12
13    // Start is called before the first frame update
14    void Start()
15    {
16        //3秒後に消す
17        Destroy(gameObject,3.0f);
18
19        //コンポーネント取得
20        rb2 = GetComponent<Rigidbody2D>();
21
22        //スピード係数
23        //speedData = 5.0f;
24
25        //プレイヤーと敵のオブジェクト取得
26        playerObj = GameObject.Find("Player");
27        enemyObj = GameObject.Find("Enemy");
28    }
29
30    // Update is called once per frame
31    void Update()
32    {
33        //移動
34        rb2.velocity = new Vector2(vec2.x * speedData, vec2.y * speedData);
35
36        //当たり判定
37        float x = playerObj.transform.position.x - transform.position.x;
38        float y = playerObj.transform.position.y - transform.position.y;
39        float d = Mathf.Sqrt( (x * x) + (y * y) );
40        float r1 = 0.35f;
41        float r2 = 0.2f;
42
43        if (d < r1 + r2)
44        {
45            Destroy(gameObject);
46        }
47    }
48
49    public void Init(float angle)
50    {
51        vec2.x = Mathf.Cos(angle * Mathf.Deg2Rad);
52        vec2.y = Mathf.Sin(angle * Mathf.Deg2Rad);
53    }
54 }
```