GameManager.cs

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

public class GameManager : MonoBehaviour
{
    //Integer member variable called "currentGameLevel"
    public int currentGameLevel;
    public GameObject asteroidPrefab;
    public GameObject spacefighter;

    // Start is called before the first frame update
    void Start()
    {
        //Create a new player spaceship
        CreatePlayerSpaceship();

        //Set the current game level to 0
        currentGameLevel = 0;

        /*Camera is positioned at 0,30,0
         * Facing towards 0,0,0 with 0,0,1 as its 'up' axis */
        Camera.main.transform.position = new Vector3(0, 30, 0);
        Camera.main.transform.LookAt(new Vector3(0, 0, 0), new Vector3(0, 0, 1));


        StartNextLevel();
    }

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

    }

    void StartNextLevel()
    {
        //Increment the current game level
        currentGameLevel++;
        //Number of asteroids depends on game level
        int numberOfAsteroids = currentGameLevel * 5;

        //instantiate a set of asteroids towards the edges of the visible screen using a
for loop
        for (int i = 0; i < numberOfAsteroids; i++)
        {
            GameObject asteroid = GameObject.Instantiate(asteroidPrefab);
            //scale the asteroid to a random size between 0.2 and 0.35
            asteroid.transform.localScale = new Vector3(Random.Range(0.1f, 0.17f),
Random.Range(0.1f, 0.17f), Random.Range(0.1f, 0.17f));
        }
    }
```

```
    /* Method which instantiates the player ship in the middle of the screen*/
    void CreatePlayerSpaceship()
    {
        //Create a new player spaceship
        spacefighter = GameObject.Instantiate(spacefighter);
        //Set the player spaceship's position to the center of the screen
        spacefighter.transform.position = new Vector3(0, 0, 0);
        //Scale the player spaceship to a size of 0.2
        spacefighter.transform.localScale = new Vector3(0.2f, 0.2f, 0.2f);

    }


}
```

Asteroid.cs

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

public class Asteroid : MonoBehaviour
{
    public GameObject asteroidObject;
    public GameObject smallAsteroidPrefab;
    private Vector3 spawnPoint;
    private bool ignoreCollisions = true;

    // Start - called before the first frame update
    void Start()
    {
        //Set the asteroid's position at a random position near the edges of the screen
        if (Random.Range(0, 2) == 0)
        {
            //Spawn on top or bottom
            if (Random.Range(0, 2) == 0)
            {
                //Spawn on top
                spawnPoint = new Vector3(Random.Range(-30f, 30f), 0, 30);
            }
            else
            {
                //Spawn on bottom
                spawnPoint = new Vector3(Random.Range(-30f, 30f), 0, -30);
            }
        }
        else
        {
            //Spawn on left or right
            if (Random.Range(0, 2) == 0)
            {
                //Spawn on left
                spawnPoint = new Vector3(-30, 0, Random.Range(-30f, 30f));
            }
            else
            {
                //Spawn on right
                spawnPoint = new Vector3(30, 0, Random.Range(-30f, 30f));
            }
        }

        //Set the asteroid's position
        asteroidObject.transform.position = spawnPoint;

        //Move the asteroid in a random direction
        asteroidObject.GetComponent<Rigidbody>().AddForce(new Vector3(Random.Range(-700f,
700f), 0, Random.Range(-700f, 700f)));

        //Rotate the asteroid in a random direction
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```
        asteroidObject.GetComponent<Rigidbody>().AddTorque(new Vector3(Random.Range(-500f, 500f), Random.Range(-500f, 500f), Random.Range(-500f, 500f)));

        //Wrap asteroids to other side of screen, check every 0.2 seconds. 5 times a second
        InvokeRepeating("CheckIfOffScreen", 0.2f, 0.2f);

        //This is a method that disables collisions for a tenth of a second at spawn in, in order to prevent not valid collisions
        Invoke("DisableCollisionIgnore", 0.1f);
    }

    void DisableCollisionIgnore()
    {
        //Disabling collision ignore boolean
        ignoreCollisions = false;
    }

    void CheckIfOffScreen()
    {
        //Check if the asteroid is off screen, and if so, wrap it to the other side
        Vector3 currentWorldPos = asteroidObject.transform.position;
        Vector3 viewPosition = Camera.main.WorldToViewportPoint(currentWorldPos);
        if (viewPosition.x > 1f)
        {
            asteroidObject.transform.position = new Vector3(-currentWorldPos.x + 1, 0, currentWorldPos.z);
        }

        if (viewPosition.y < 0f)
        {
            asteroidObject.transform.position = new Vector3(currentWorldPos.x, 0, -currentWorldPos.z - 1);
        }

        if (viewPosition.x < 0f)
        {
            asteroidObject.transform.position = new Vector3(-currentWorldPos.x - 1, 0, currentWorldPos.z);
        }

        if (viewPosition.y > 1f)
        {
            asteroidObject.transform.position = new Vector3(currentWorldPos.x, 0, -currentWorldPos.z + 1);
        }


    }

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

```
    }

    /*Each time an asteroid collides with something, spawn a few of the tiny asteroid
prefabs at the point of
impact. They should be destroyed shortly afterwards. */

    void SpawnCollisionDebris(Vector3 collisionPoint)
    {
        //Spawn 3 small asteroids at the point of collision
        for (int i = 0; i < 3; i++)
        {
            GameObject smallAsteroid = GameObject.Instantiate(smallAsteroidPrefab);
            //Setting position to the collision point and scaling it down
            smallAsteroid.transform.position = collisionPoint;
            smallAsteroid.transform.localScale = new Vector3(0.01f, 0.01f, 0.01f);
            //Adding a random force and torque to the small asteroids
            smallAsteroid.GetComponent<Rigidbody>().AddForce(new Vector3(Random.Range(-
100f, 100f), 0, Random.Range(-100f, 100f)));
            smallAsteroid.GetComponent<Rigidbody>().AddTorque(new Vector3(Random.Range(-
100f, 100f), Random.Range(-100f, 100f), Random.Range(-100f, 100f)));
            //Destroying the small asteroids after 1.5 seconds
            Destroy(smallAsteroid, 1.5f);
        }
    }

    /*Method for calling SpawnCollisionDebris on collisions */
    void OnCollisionEnter(Collision collision)
    {
        //Checking if it is on spawn in, and if so, ignore collisions
        if (ignoreCollisions)
        {
            return;
        }
        //Calling SpawnCollisionDebris with the point of collision
        SpawnCollisionDebris(collision.contacts[0].point);
    }



}
```

SpaceShip.cs

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

public class Spaceship : MonoBehaviour
{
    public GameObject spaceship;

    // Start is called before the first frame update
    void Start()
    {
        //Wrap spaceship to other side of screen, check every 0.2 seconds. 5 times a
second
        InvokeRepeating("CheckIfOffScreen", 0.2f, 0.2f);
    }

    // Update is called once per frame
    void Update()
    {
        /*apply a physics force to accelerate the spaceship forward if the Up arrow is
held, or
        rotate it left/right if the Left/Right arrows are held.*/

        //Checking if the Up arrow is held, if so check if within velocity limit, if so
add force
        if (Input.GetKey(KeyCode.UpArrow) && GetComponent<Rigidbody>().velocity.magnitude
< 14)
        {
            GetComponent<Rigidbody>().AddForce(transform.up * 7);
        }
        if (Input.GetKey(KeyCode.LeftArrow))
        {
            GetComponent<Rigidbody>().AddTorque(transform.forward * -4);
        }
        if (Input.GetKey(KeyCode.RightArrow))
        {
            GetComponent<Rigidbody>().AddTorque(transform.forward * 4);
        }




    }
    // Having the player spaceship respond to moving off-screen, in the same way that
asteroids already do
    void CheckIfOffScreen()
    {
        Vector3 currentWorldPos = spaceship.transform.position;
        Vector3 viewPosition = Camera.main.WorldToViewportPoint(currentWorldPos);
        if (viewPosition.x > 1f)
        {
            spaceship.transform.position = new Vector3(-currentWorldPos.x + 1, 0,
currentWorldPos.z);
```

```
        }

        if (viewPosition.y < 0f)
        {
            spaceship.transform.position = new Vector3(currentWorldPos.x, 0, -
currentWorldPos.z - 1);
        }

        if (viewPosition.x < 0f)
        {
            spaceship.transform.position = new Vector3(-currentWorldPos.x - 1, 0,
currentWorldPos.z);
        }

        if (viewPosition.y > 1f)
        {
            spaceship.transform.position = new Vector3(currentWorldPos.x, 0, -
currentWorldPos.z + 1);
        }


    }


}
```