

Space Game Manual

February 2022

1 Introduction

This document contains the user manual and information needed to start the online multiplayer video game and the server browser. It informs the user about the minimum system requirements necessary to run the game, and configurations that must be done before starting the application. The user manual describes how to navigate the application menus, control the in-game character, and the general game objectives.

2 System Requirements (Recommended)

- OS: Windows 10
- CPU: Intel Core i5-9300H
- RAM: 8GB
- Graphics Card: NVIDIA GeForce GTX 1650
- Hard Disk Space: 182 Mb

3 Hosting a game

In order for a user to host a game for clients outside of his LAN (local area network), the 7777 network port must be port-forwarded on the router. This is necessary to ensure that inbound network traffic from other clients arriving at the local IP network is redirected towards the device hosting the game. It is also a good idea to set a static local IP address, to ensure it does not change after a computer or router reset, forcing the user to set up port forwarding again. Additionally, the 7777 port should be enabled on windows defender and any other active firewalls.

Alternatively, software that creates a VLAN (virtual local area network), such as Hamachi, or GameRanger, can be used to circumvent the need for port-forwarding, but it must be used by all participants, not just the host.

4 Editing Settings Manually

The game settings are stored in a file Settings.dat, in the same directory as the game executable, in a JSON format. If necessary, this file can be edited manually, changes will be applied upon the start of the application. It is however recommended to use the in-game settings menu instead.

5 Server Browser

To start a server browser user has to first set its network setting to have the possibility of hosting it. The server browser is set to work on port 8080. The user has to forward the 8080 network port on his router. Additionally, the 8080 port should be enabled on windows defender and any other active firewalls. User can deploy a server browser on Microsoft IIS. To deploy a server on IIS user has to publish the server browser code to the folder. Then in IIS, he has to create a new site where he will put the folder with the published server browser. After the creation of the site, the server will start working automatically. The user can access then the server by providing his IP address, port and route. For example ipaddress:8080/servers.

6 User's Manual

6.1 Main Menu

Once the user starts the application, they will be met with the main menu which allows them to play the game, manage settings or exit the application.



Figure 1: Main Menu

6.1.1 Settings Menu

The settings menu can be accessed by pressing settings in the main menu, or the in-game menu. It allows you to customize some preferences about the game.

- 1) Field of view of the character
- 2) In-game mouse sensitivity
- 3) Mouse sensitivity when rolling character
- 4) Game sound volume
- 5) The option to either toggle, or hold the button to aim

These settings will persist even after the game is closed and reopened.

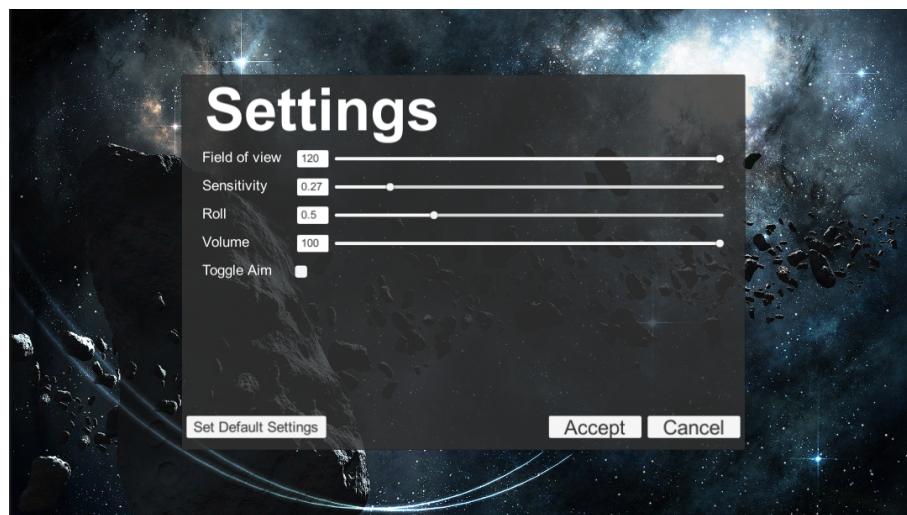


Figure 2: Settings Menu

6.1.2 Play Menu

Upon selecting the play option, the user can choose how to access the game. In order to be able to choose an option, the player has to input a username into the text box at the top of the screen. If not, then an error message will appear.

Host Game The host game button lets the user host a game which makes them act as the server while also giving them the ability to play the game.

Join Game The join game button connects the user to an already hosted game by someone else. The user can provide an IP address to join a specific server. In the case that the input field is left empty, the user will connect to a local server.

Add Server The create server option is similar to host a game option, allowing the user to host a game publicly. The user provides a server name and adds it to the server browser allowing other players to join the server.

Server List The server List button shows the user the list of active game servers from the server browser. the user can then choose the server from the list and join a game.

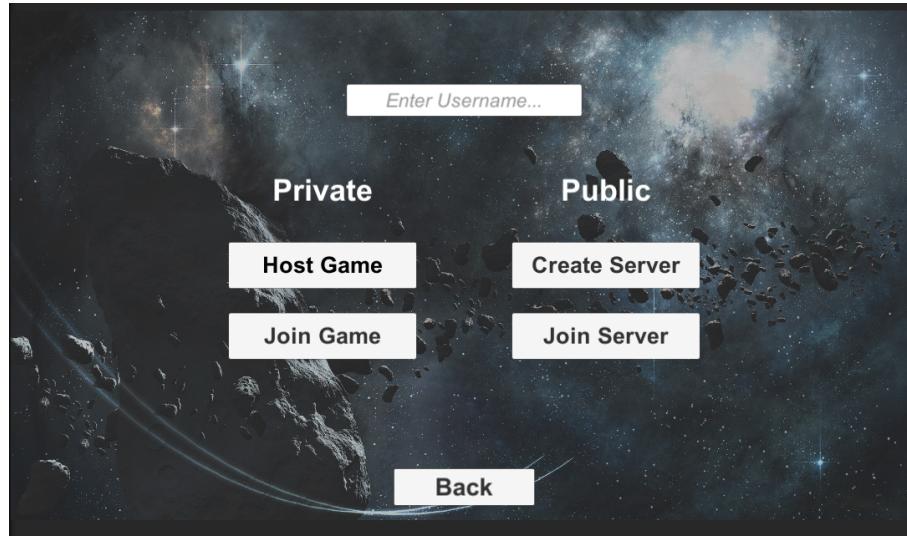


Figure 3: Play Menu



Figure 4: Join Private Game

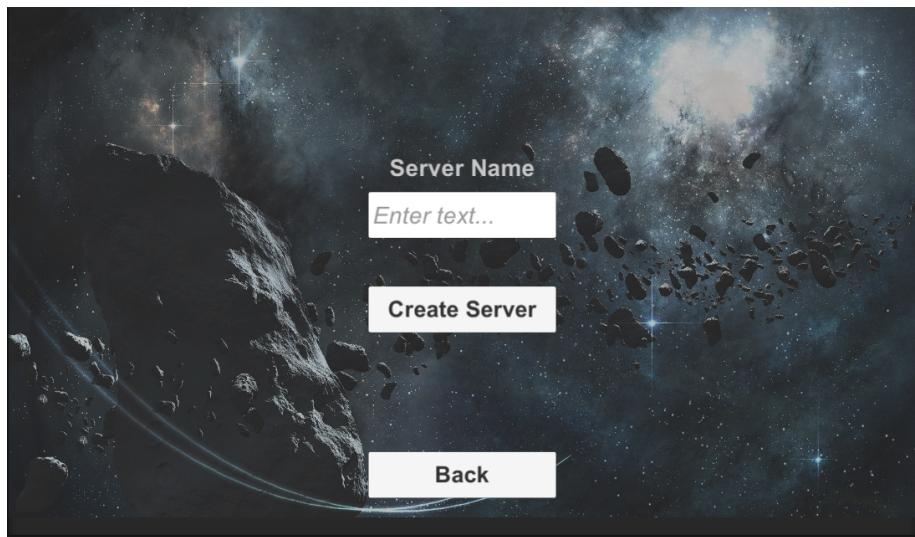


Figure 5: Create Server Menu

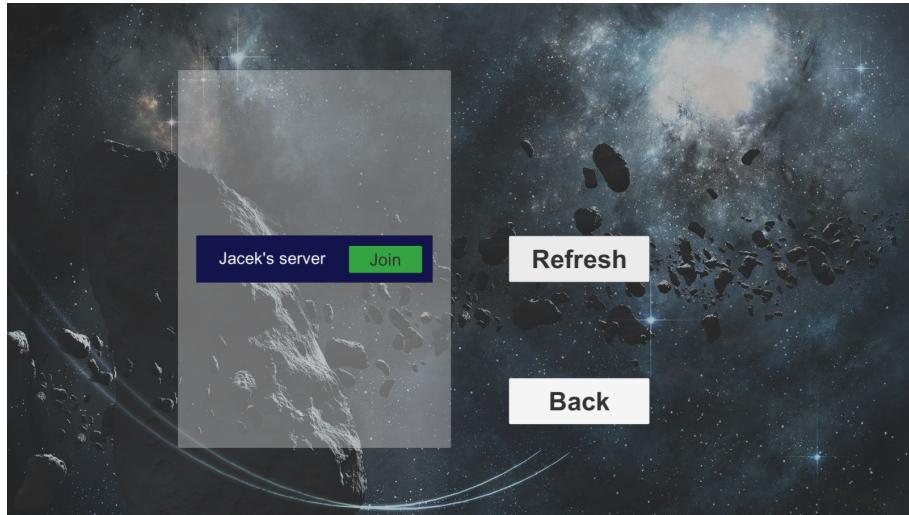


Figure 6: Server list

6.2 Lobby

Upon connecting to the game server, the user is presented with the game lobby. Here the user will be able to see information about the game such as the players who are also connected to the same server, the game mode, etc. The user can also leave the lobby, which will take them back to the Main Menu.

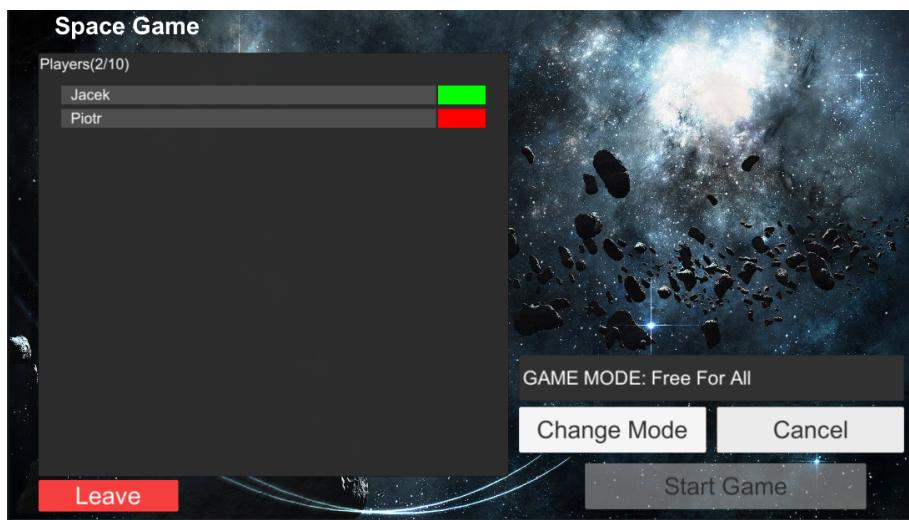


Figure 7: Lobby

Players are displayed with their chosen usernames as well as an indicator letting the other players know if they are ready to begin playing. The game mode is also displayed for all the players, but only the host can change it. There are only 2 game modes to choose from: free for all, and team death match. By selecting the Change Mode button, the host is prompted with the game mode options, which, once selected, will change the the game mode.

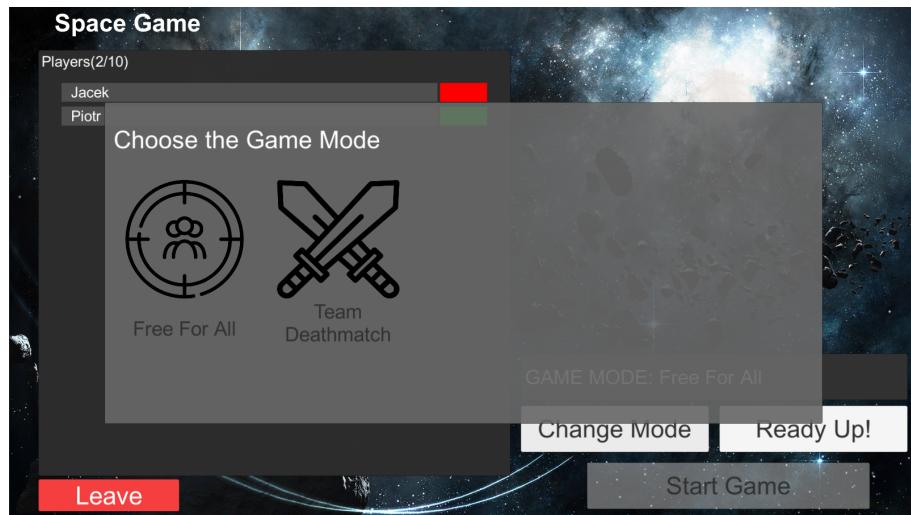


Figure 8: Choosing Game Mode in Lobby

Once all the players are ready, and have selected the Ready Up! button, the host can begin the game, by selecting the Start Game button. Upon starting the game, if the game mode selected is *Team Death Match*, the players are separated into teams and their usernames are highlighted in the lobby with a color respectively. After a few seconds, the users leave the lobby and are transported to the game scene. The game will then begin.

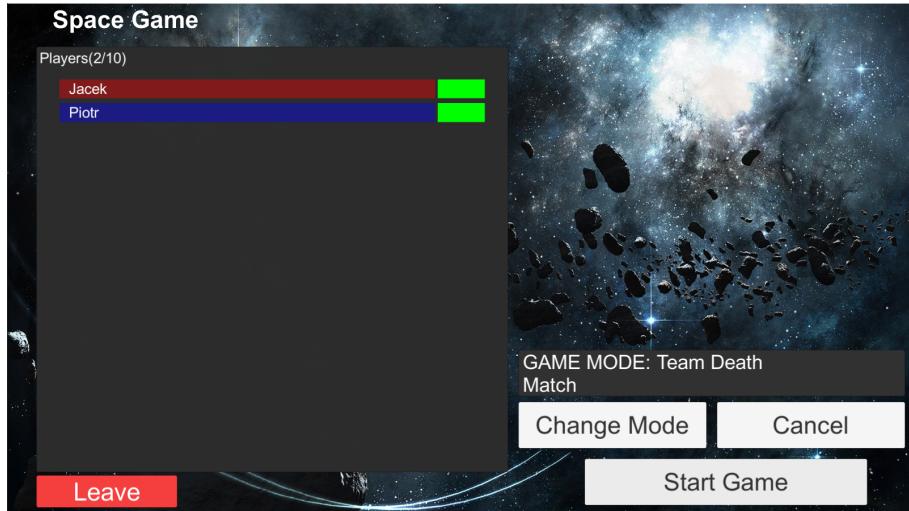


Figure 9: TDM Team assignment in Lobby

6.3 Gameplay

When the game starts, you gain control over your character, with a first person perspective. Your objective is to eliminate enemy players, until you or your team gets enough points to win. The red bar on the bottom left indicates your health, if it is depleted, you will be eliminated, and will re spawn after a few seconds.

6.3.1 Gamemodes

FFA (Free For All) In this game-mode there are no teams, everybody is hostile towards everybody. You spawn in a random location around the map, and can gain points by eliminating other players. First player to reach the point goal (5 points by default) wins the game.

TDM (Team Death Match) In this mode the players are divided into two teams, each team spawns on their half of the map. A team gains a point when its member eliminates a player on the opposing side. Players are unable to hurt their own team members. First team to reach the point goal (10 points by default) wins the game.

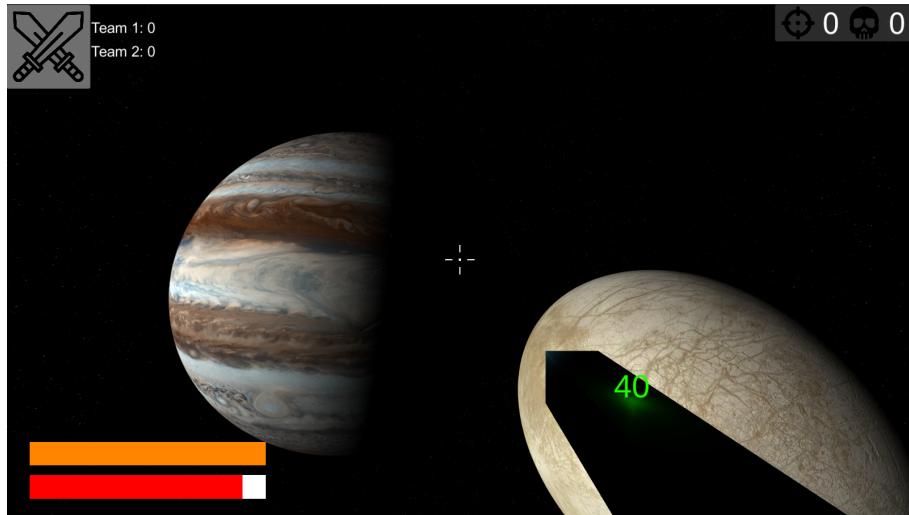


Figure 10: Gameplay

6.3.2 Character controls

KEY	ACTION
W S A D	forward / backwards / left / right
Shift / Ctrl	up / down
E	grip / let go of an object
Space	jump off an object
Mouse movement	camera movement
M3 (mouse wheel button)	modify mouse-x vector to roll
M1 (left mouse button)	fire weapon
M2 (right mouse button)	aim weapon
R	reload weapon
F / M4 (thumb mouse button)	fire grappling hook
Numeric keys 1-5	switch weapon
Esc (escape key)	open menu
Tab	open scoreboard

6.3.3 Character movement

Mouse movement is used to control the characters rotation. While free floating, movement keys (W, S, A, D, Shift, Ctrl) can be used to accelerate in a direction using the characters jetpack. This drains its energy (yellow bar in the bottom left corner), which replenishes when the jetpack is not in use. When you approach an asteroid, its side will light up blue, E can be pressed to grip onto it. The light will turn green to indicate you're now gripping the asteroid. This lets you maneuver more precisely, and without using jetpack fuel, as long

as you remain close to the object. You can also jump off the object by pressing space. The grappling hook can be fired by holding F or M4, after attaching to an object, it will pull you towards it, helping you approach it, or letting you swing around it.

6.3.4 Weapon controls

Using numeric keys 1-5, you can select a weapon. The available weapons are:

- 1) SMG: a close range sub-machine gun with high fire-rate but low accuracy
- 2) DMR: a medium range semi-automatic rifle
- 3) Assult Rifle: a medium range assult rifle with consistent recoil
- 4) Revolver: a high damage but high recoil revolver
- 5) Sniper: a slow but powerful sniper rifle

M1 is used to fire the selected weapon, some weapons are fully automatic, letting you hold down the button to fire. M2 can be used to zoom in to help hit distant targets. If the weapon runs out of ammo (indicated by the number above the weapon), R can be pressed to reload it.

6.3.5 In-game menu

Pressing Esc will open the in-game menu, unlocking the mouse cursor, and giving the options of resuming game play, accessing the settings menu, leaving the current game, or closing the application all together.



Figure 11: In-game Menu

6.3.6 Game Scoreboard

The game scoreboard displays the game information for each player such as player kills and player deaths. The user's player name is highlighted for easier readability. The scoreboard also highlights the teams and the players that make up that team with a different background color. Games with Free For All game mode do not display different background based on teams.

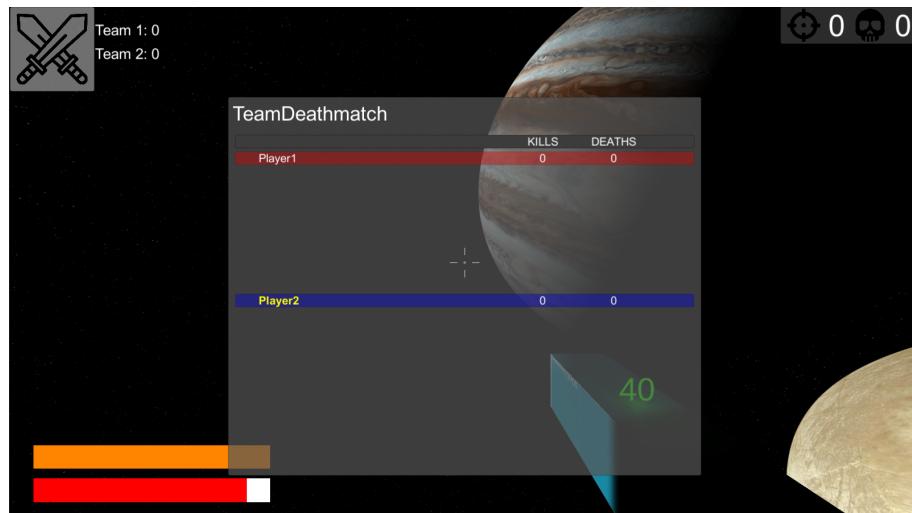


Figure 12: Game Scoreboard (Team Death Match)