

Hi,
Thank you for purchase,
I hope, my package will help you.

It is a template for creating multiplayer PvP games like [Clash Royale](#) with deterministic game mechanics.

Note!

Package is required [PUN 2](#) you need to instal this package in your project

Features

- Only send "hero creating" input between players
- Deterministic game mechanics

How the package works

The package has two scenes - Lobby and Game

On the Lobby scene there is a two scripts for Network part

[Class PunNetworkManager](#) working with [PUN 2](#)

This script is used for connecting to the server [PhotonNetwork.ConnectUsingSettings\(\)](#) , creating or joining room [PhotonNetwork.JoinOrCreateRoom](#) and sending messages between players `public void RPC(string methodName, RpcTarget target, params object[] parameters)`

The [class NetworkMessenger](#) receive messages from the network and call his events that are processed by [GameManager](#)

The [class GameManager](#) on the "Game" scene creates two groups "[class Group](#)" with Towers "[TowerManager](#)" and Heroes "[HeroManager](#)" and sets them on the arena groups[i].Init2Group(arena, i);

The mechanics of the game is deterministic because all game logic (heroes creating time and heroes moving) working with [long](#) (Fixed-point arithmetic)

When user want to create "Hero" , the "Hero" will be added to the waiting list

uiManager.OnCreateHero += AddMyHeroToWaitingList; local user creating and [PunNetworkManager.NetworkManager.Messenger.OnAddOtherHeroToWaitingList += AddOtherHeroToWaitingList](#); creating from other user through the network

`long` addTime

`MyGroup.AddHeroToWaitingList(index, addTime, position);`

`OtherGroup.AddHeroToWaitingList(index, addTime, position);`

After adding “Hero” to the waiting list, in the `private void` UpdateGame()

The “Heroes” will be created at a time that is equal to the time which saved in the “HeroesWaitingList”

`long` gameTime

`if (groups[0].HeroesWaitingList.ContainsKey(gameTime))`

`if (groups[1].HeroesWaitingList.ContainsKey(gameTime))`

How you can modify the contents

Please look at the classes

`class` HeroShooterManager, `class` SimpleHeroManager and `class` SimpleTowerManager which is override the abstract classes HeroManager and TowerManager

As you can see, you can override the methods

`public abstract void` OnFight();

`public abstract bool` CanBeAsTarget(HeroManager target);

So, you can create your own “Hero Manager” and for example play his animation when “Hero” is fighting and determine is any “Hero” can be as target “Hero” for your new “Hero” (Can your new hero damage present “HeroManager target” or not?)