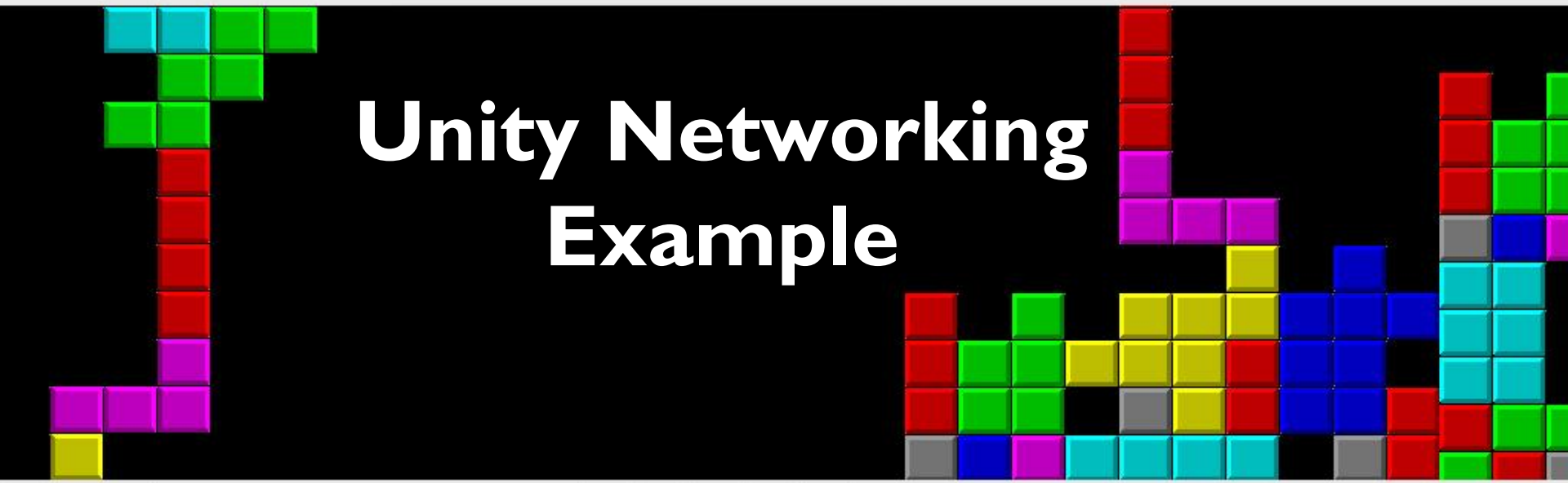
6CCGD003W

Network Games and Security

Tutorial 04



Unity Networking Example

Paul Rosson

UNIVERSITY OF WESTMINSTER

Tutorial Objectives

1. To understand how Unity's networking works at a basic level.

2. To create a basic example of a networked game in Unity.

3. To begin applying those principles to our own games.

Introduction

- Right now our game is quite complex, and trying to turn it into a network game would involve a large amount of time with us unable to test it.

- Luckily, Unity has created a tutorial that will teach us the basic of Unity's networking system.

- Once this is done we can start applying the same principles to our Tanks game, which is the goal of the coursework.

Introduction

- The application of the principles to our own projects is deliberately vague as that is what the coursework is testing.

- We will have all of the tools to apply these principles, but this will require understanding of both how the game is constructed and how the networking code works.

Tutorial

- Create a new project and follow the tutorial at https://unity3d.com/learn/tutorials/topics/multiplayer-networking/introduction-simple-multiplayer-example?playlist=29690

- It steps through the basics of Unity's networking by creating a simple game. Luckily for us it involves players, bullets and health…

Applying the Principles

- Now we can start adding the things we've learned into our own projects. Make sure to constantly test at every step to make sure everything functions as intended.

- Create a network manager in our game scene and add our tank prefab to it as the 'Player'. Turn off bots for now (set MaxBots to 0 or disable the Bot Spawner).

- Convert our 'Player' script into a NetworkBehaviour and add a NetworkTransform component. We also need to make sure we only process input for the local player.

Applying the Principles

- Try getting the bullets to spawn for both the host and client.
- Sync the player health across the network.
- To sync the rotation of the turret we can implement a Command to set the rotation value on all clients.
- The aim is to have a fully synchronised game between a host and a client.

Next Week

- That was a lot to get done in a week so we may not finish synchronising everything in this session.

- Next week we will be looking at more advanced networking such as dealing with client disconnection, restarting the game and host migration (advanced).