

UNIVERSITA' DEGLI STUDI DI MESSINA

NETWORKING COURSE PROJECT

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# AutoSyncGen

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# Chapter 1

## Introduction

1.1 Problem

1.2 Solution

1.3 Technologies used

## Chapter 2

# Network module

### 2.1 SFML

### 2.2 Packets

#### 2.2.1 Packet types

CtoS enumeration

StoC enumeration

#### 2.2.2 Packet handling

### 2.3 SessionHost

#### 2.3.1 SessionServer

ConnectionManager

ClientHandler

#### 2.3.2 SessionClient



## Chapter 3

# Synchronization module

### 3.1 ssvu

### 3.2 SerializationHelper

### 3.3 SyncObj

#### 3.3.1 Fields

Field tuple

Field flags

FieldProxy

### 3.4 Snapshot

#### 3.4.1 SnapshotTypeData

Item map

### 3.5 Diff

#### 3.5.1 DiffTypeData

toCreate map

toUpdate map

toRemove vector

### 3.6 LifetimeManager

### 3.7 SyncManager

#### 3.7.1 Lifetime managers tuple

#### 3.7.2 Handle maps tuple

#### 3.7.3 Object management functions

## Chapter 4

# Example application: synchronized chat

### 4.1 Data structures

#### 4.1.1 Message

### 4.2 Lifetime manager specialization

#### 4.2.1 Pointers as handles

#### 4.2.2 create

#### 4.2.3 remove

### 4.3 Application packet types

#### 4.3.1 Server to client

#### 4.3.2 Client to server

### 4.4 ConsoleSessionController

#### 4.4.1 Server role

#### 4.4.2 Client role