

Introduction

The Android operating system is now used in over 30 different smart phones and Android phones account for nearly 10% of the market with a gain of over 5% in the last four months. Every Android phone has access to the Android Market which distributes applications created by independent developers. This growing market represents a great opportunity for developers.

Purpose

To develop and deploy an interactive and networked game for use on the Android platform.

Methods

- Use the Android SDK in the Eclipse development environment.
- Use the Android Emulator to test and debug the application.
- Develop a game which can be played over the Internet.



Android Networking

- Android networking is similar to Java networking and uses the same syntax for most methods.
- The primary difficulty lies in networking the emulator. The emulator will only listen for a connection on the loopback(127.0.0.1) interface. This prevents the testing of the code across the network.
- The solution is through port mapping. Two port mappings must be implemented. The first is from the loopback address to the emulator. The second is from the network interface to the loopback interface.
- Figure 2 illustrates the configuration of the mappings.

Game Pseudocode

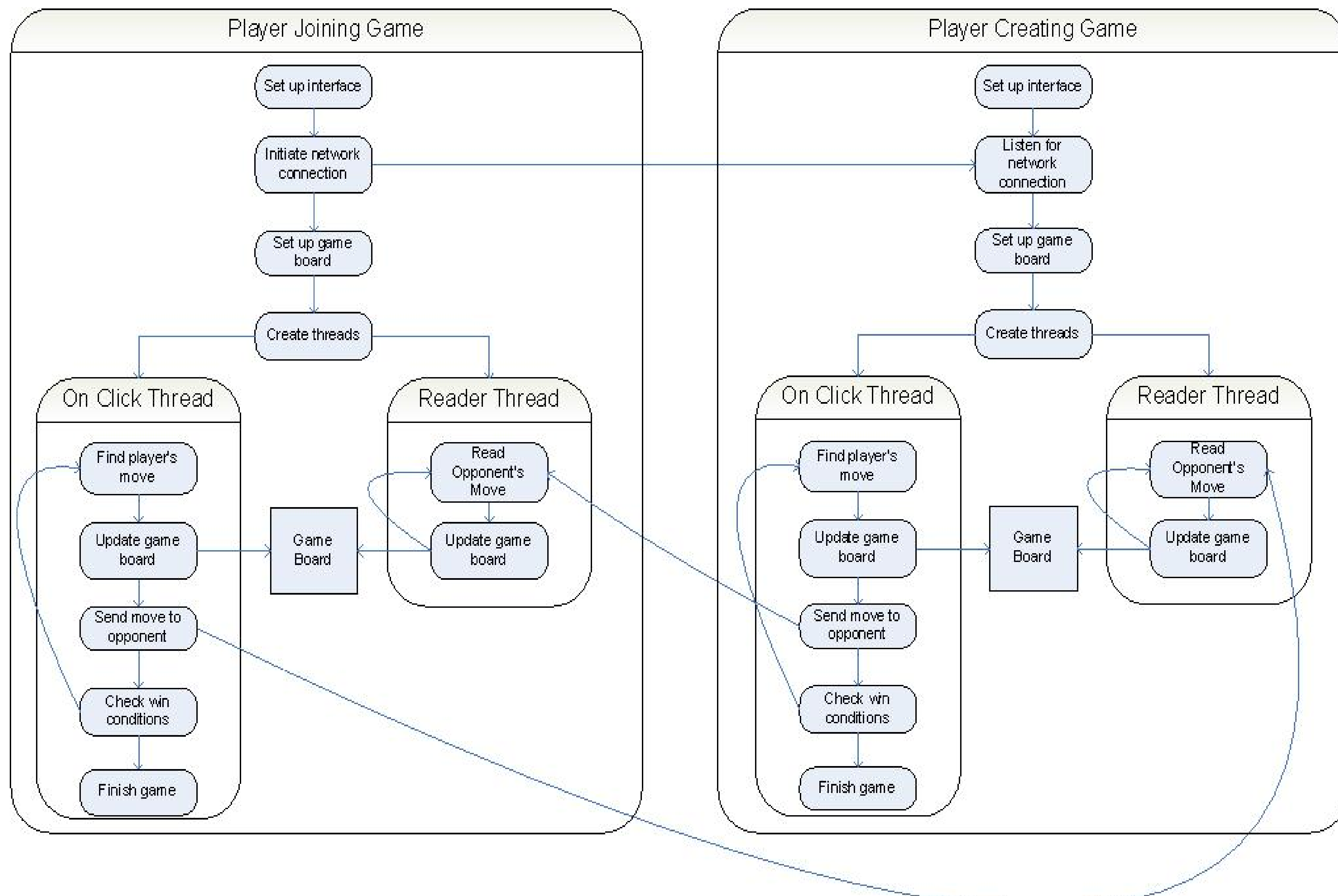


Figure 1

Application Development

- Android separates interface from background code similarly to ASP.net.
- The user interface is defined in XML and then referenced using a findViewById method.
- Only the main thread may update the user interface. If another thread must access the UI then it must utilize the Handler class to schedule UI updates in the main thread.
- Synchronization between the on click thread and the reader thread is accomplished through the use of semaphores and a Boolean wrapper class.

Networking Using the Android Emulator

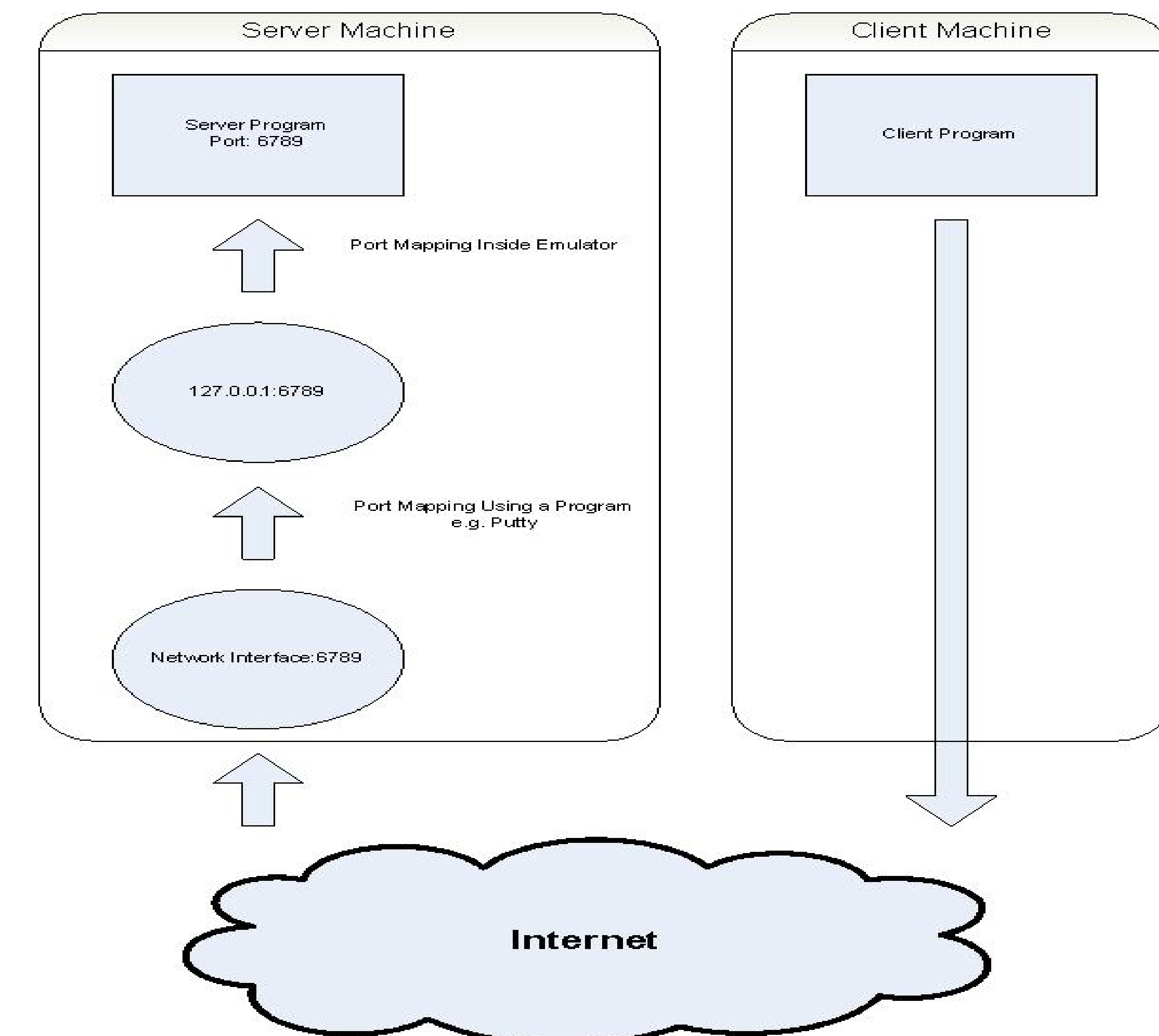


Figure 2