Social Gaming with Chromecast

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Abstract

Today, while people have access to many mobile computing devices, there is no standard and straightforward way to use these systems collaboratively in a social setting. Our project utilizes the Google Chromecast device as a platform for enabling social gaming with multiple mobile devices. In our demonstration, we allow the audience to participate in a Texas Hold'em poker game via an Android application. Each device communicates with a centralized Chromecast device that maintains game state and displays public information such as the cards on the board and the status of wages.

1 Introduction

Although personal smart devices are becoming a widely used gaming platform, there is currently no way to use these devices to collaborate with each other by displaying public information on a television screen. With the release of the Google Chromecast, new methods are available to developers which allow the streaming of content to a television screen across the local area network. With this new technology, the ability to interact with an application both on a local device and a remote screen is possible. The intent of this project is to demonstrate how this capability can be applied towards a gaming platform which contains both private information for each user involved and a central pool of public information. This project explores using these separate pools of data by having both local interaction from each user on their private Android devices, and public information rendered on a centralized screen.
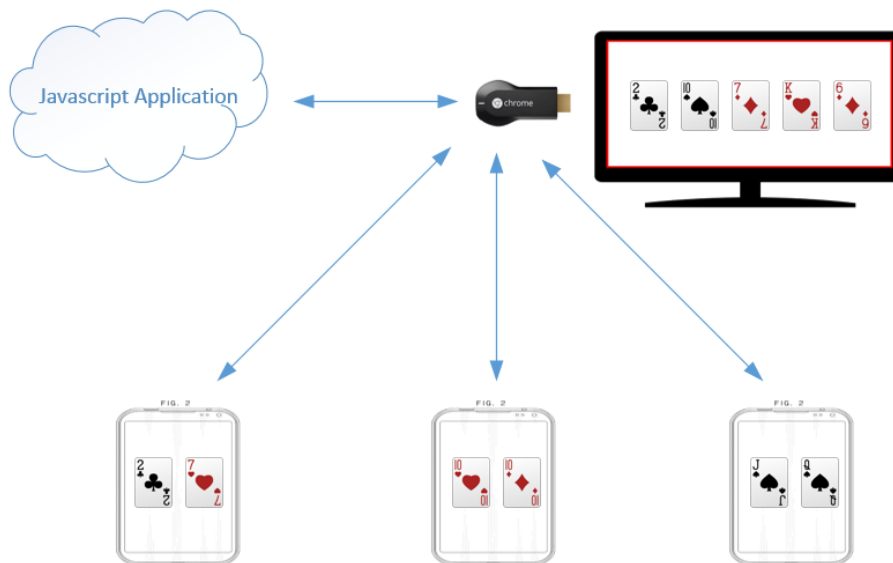

Figure 1: Texas Hold'em Chromecast Application

2 Design

Our application explores our intent by implementing a multi-player Texas Hold'em application. We designed this system to revolve around one centralized JavaScript based application which runs on the Chromecast as a web page. It then utilizes an Android application on up to 6 separate devices which connect to the JavaScript application. The devices will then receive their private information, such as their hand. The Chromecast will render the public information, such as the *flop*, *turn*, and *river* cards on the television screen.

3 Implementation

We implemented this system as two separate entities, the JavaScript application and the Android application. The JavaScript application controls the game flow by dealing cards, maintaining player turns and evaluating the winner. The Android application acts as an user-specific interface for the JavaScript application. The JavaScript application informs the Android application when it should accept input or display user-specific information. Upon obtaining user input, the Android application sends the result to the JavaScript application to be processed.

4 Demonstration

To demonstrate this concept, we will set up a screen connected to a Chromecast, as well as have an available `.apk` of our Android application for users to download. Upon installation of the `.apk`, users will be able to join the active game session on the Chromecast and interact with the system over the course of several poker hands. We will bring a screen for this demonstration, however we will need Ethernet access in order to configure the proper environment.