

CONTROLLER EMULATION PROJECT

PROJECT TEAM 8

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PROBLEM STATEMENT

Our project will develop an iOS application that will allow users to emulate different types of gaming controllers with the portability and accessibility of their phone/iPads. This application will allow users to connect an emulated controller to their computers over network or Bluetooth, which will allow them to play games through services such as Dolphin. A user of this application would no longer need to rely on expensive emulation services or physically have different types of controllers to play certain games, but rather, they could use our application to emulate several different types of controllers with a singular iOS application to play a wide range of games. While similar applications may exist, our mobile application will be provided for free and support far more controller types.

PROJECT OBJECTIVES

- Provide users with free and easily accessible emulated controllers so that users will no longer have to rely on expensive controllers and emulations services to play their favorite games.
- Make gaming on the go and party gaming easier and more accessible for users with multiple users being able to connect emulated controllers to a singular device.
- Provide gamers with network and Bluetooth connection for their emulated controllers allowing for users to play wirelessly with the advantages and preferences of whatever connection system they choose to use.
- Provide users with a customizable experience allowing them to make their own stylization preferences for the look and feel of their gaming controller.

STAKEHOLDERS

- Users: Video game enthusiasts who want to emulate controllers using their iOS devices
- Developers: Benjamin Dravis, Jack Fang, Krish Shah, James Burrows, Bautista Tedin, Joshua Irizarry
- Project Manager: Pratyush Das

- Product Owners: Benjamin Dravis, Jack Fang, Krish Shah, James Burrows, Bautista Tedin, Joshua Irizarry

DELIVERABLES

- Connection protocol for network connection
 - Connection protocol that will allow for users to connect from the iOS application to the computer over the network. Network functionality will allow more users to be connected at a given time.
 - It will be our own connection protocol that transmits changes in inputs, such as whether a button is being held or if it got released. The available inputs, controller type, and username will be sent at the handshake. Connecting over networks will use existing protocols for the handshake and staying connected.
- Connection protocol for Bluetooth connection
 - Connection protocol that will allow for users to connect from the iOS application to the computer over Bluetooth. Bluetooth functionality will allow for faster connection speeds between the application and the computer.
 - It will transmit the same information as over a network connection, but it will use existing bluetooth protocols instead.
- Computer Client
 - A user interface built with QT for the computer that will allow for users to see who is connected to the computer as well as show a display of the inputs that are being passed from each player's controller.
- iOS application for controller emulation
 - An iOS application built using Swift that will connect with a given computer allowing for emulation of a controller primarily through the dolphin emulation service. This application's primary function will allow users to emulate a given controller on their chosen touchscreen, iOS device.
- Customization settings for button layout
 - Within our iOS application's settings, there will be an option that allows for users to customize the button layout or types of buttons used in order to emulate different controllers such as an Xbox controller or a GameCube controller.
- Customization settings for layout coloring
 - Within our iOS application's settings, there will be an option that allows for users to customize the colorization of the application. This will allow for users to make the application more appealing to their preferences or needs in terms of the color scheme.
- Save files of different customization settings
 - Within our iOS application's setting, there will be an option that allows users to access and load configurations for commonly used controller configurations.