

Hotkey

Team: (AD07)

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Description:

This application is in essence an all in one solution to control your desktop computer from a mobile device. This app aims to be a simple, minimalistic and easy to use way to control your desktop when you are unable to physically do it yourself.

Not only does it provide the conventional mouse and keyboard support, it also provides easy interfaces for directly controlling presentation software, pdf readers, media players and much much more.

Motivation:

Our main goal this semester was to build an application that we ourselves would use. So we picked such a problem that we faced in our day to day lives. This idea despite lacking the flair was something we thought deserved a proper solution. Yes, there were apps which could solve some of these problems, but our opinion was that they weren't intuitive enough for day to day use.

Objective:

During the ideating and development process we had some core principles that we were to abide by. These were:

- Has to be as cross platform as possible
- Support as many devices as possible
- Has to be easy to use
- Needs to have a visually pleasing UI/UX

As mentioned in the motivation section our goal was to make an app we would ourselves use, because that means we will have at least one active user (or three) when we release the app.

In addition to these, as this was an academic project after all, our objective was always to learn new things. We wanted to push ourselves in every aspect of development. This meant “this works” wasn’t enough we needed to know “why this works” and why others don’t. We also tried our best to follow coding conventions, as we intend to work further on this app in future.

Features:

An exhaustive list of all currently available features and components in our application are as follows:

1. Connection: There are 2 main modes of connecting the mobile and desktop (server) applications.
 - a. WiFi/LAN: If both devices are under the same Local Area Network (LAN) via WiFi or ethernet, this connection mode is available.
 - b. Bluetooth: If the mobile device as well as the desktop device supports bluetooth, this connection mode is available.

Both methods use QR code for doing the authentication and handshake (so that the user does not have to manually enter any address).

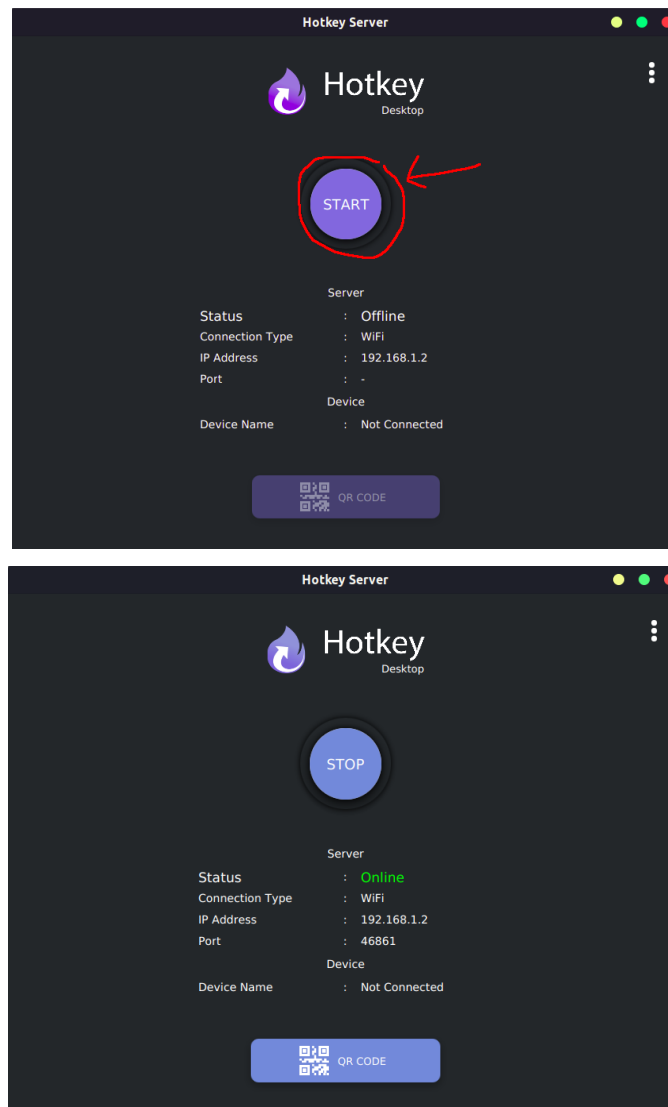
2. General Control:
 - a. Keyboard emulation: Emulate keyboard
 - b. Mouse/touchpad emulation: Emulated mouse via touchpad like interface
 - c. Live screen feed: See a live feed of the desktop screen while controlling. You can also interact (move and click the cursor) while using this mode.
3. Special Control:
 - a. Presentation/Powerpoint assistant: This has facilities such as enter/exit slide show, goto next/previous slide, etc. It even has the feature of using a virtual laser pointer which can be moved by the app.
 - b. PDF reader: Next/previous page, fullscreen, layout fit width/height, goto page, etc.
 - c. Gamepad: Has a gamepad layout like layout with configurable buttons (mappable to keyboard keys).
 - d. Custom macros: One can save certain key combinations for faster use in certain situations.
 - e. Media keys: contains buttons for invoking the hardware buttons for play, pause, skip next, skip previous, volume up, volume down, etc.

Instructions:

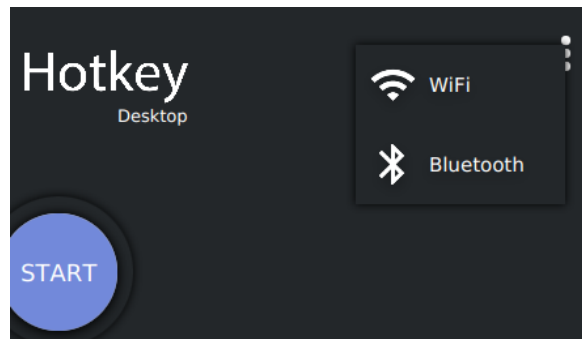
One of the goals of our app was that the UI should be intuitive enough so that the user can discover and use features without requiring any instructions. But for the sake of brevity here is a step by step guide for using the application:

Connection:

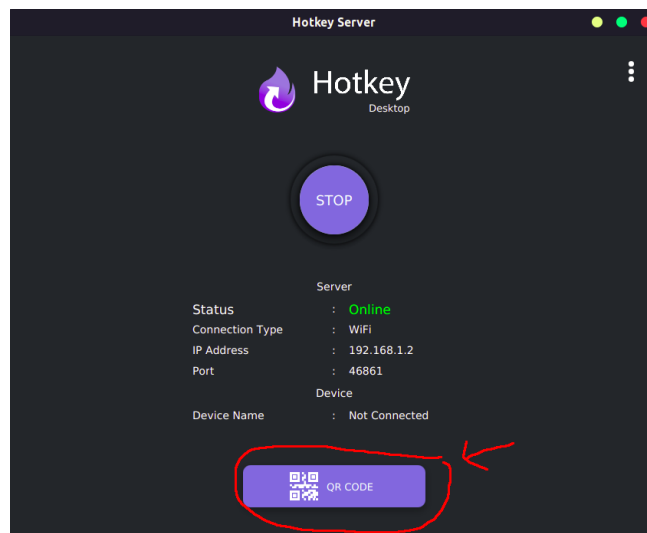
1. Turn on the server by pressing start.



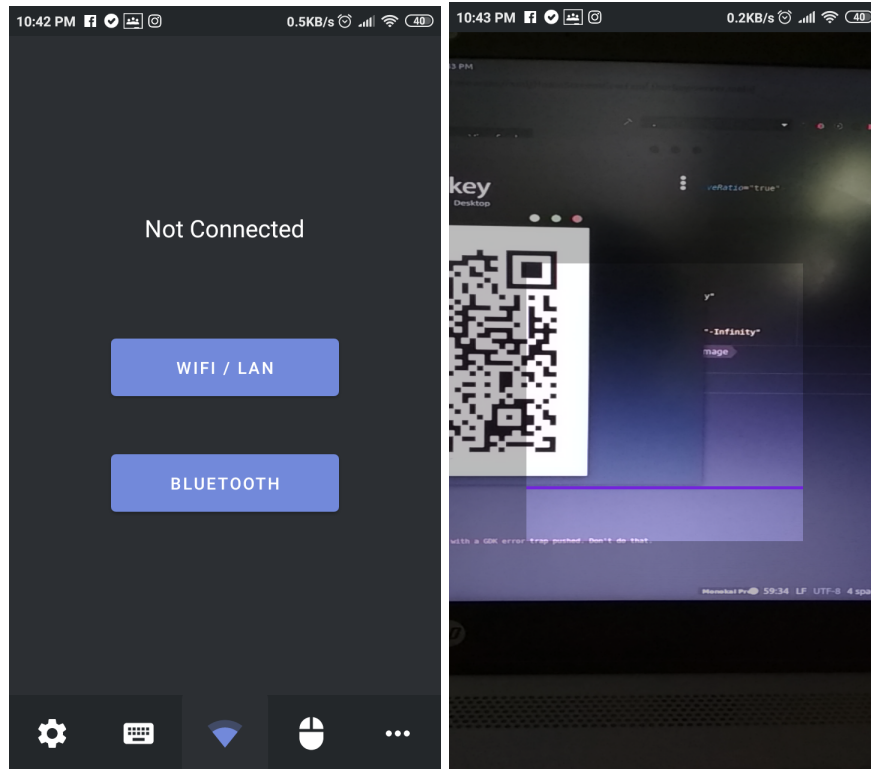
2. Change connection mode



3. Press the QR code button to show a QR code.





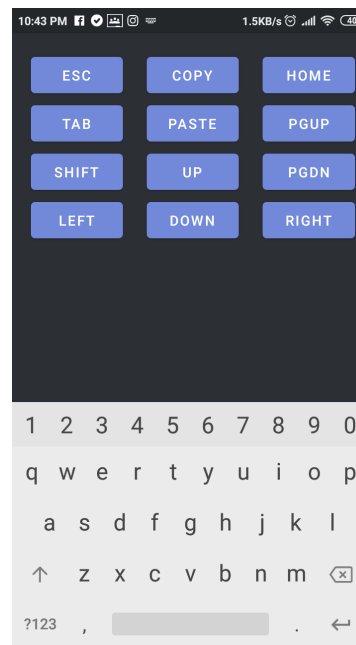
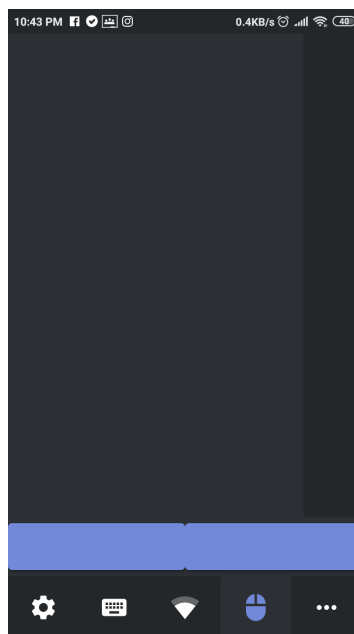
4. Open android app and press on WiFi or Bluetooth to connect via that method.
(Note: Bluetooth has to be enabled to use bluetooth connection) and scan QR code.




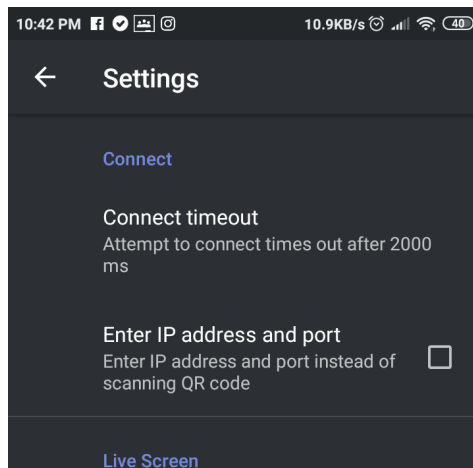
5. And voila the devices are connected.

Usage:

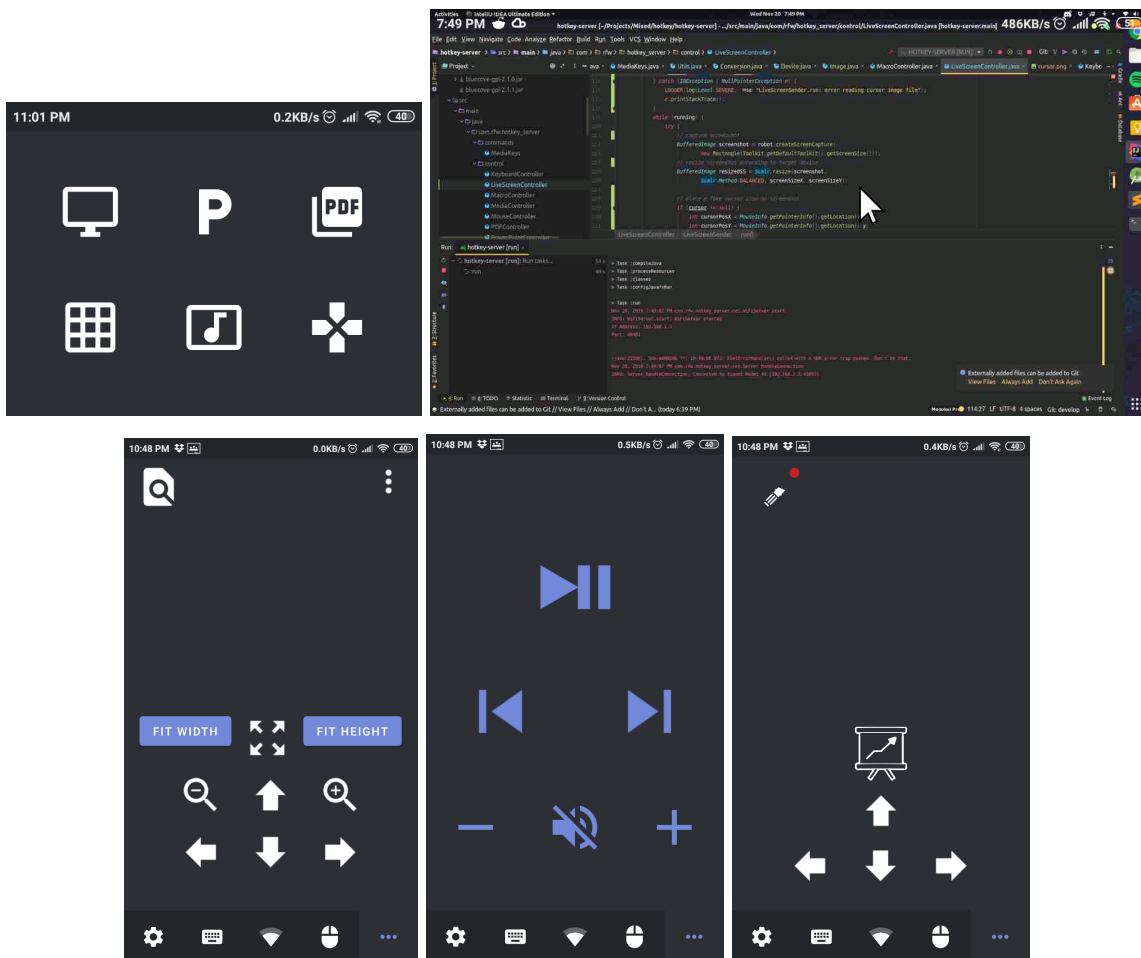
- Click on  to use keyboard and on  to use mouse/touchpad.



- Click  to change preferences.



- Click  to reveal other functionality and features



Conclusion:

We had a lot in mind when we chose this idea. But over the process of development we had to learn the hard way that nothing is as easy as it seems. We learned to value thorough unit testing and time management. We know our app has various shortcomings. Although we couldn't accomplish all the features we had in mind and our various shortcomings we are proud of what we've achieved and we hope that you find it useful as well.