MINI-PROJECT II
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Synopsis

Screen Honcho :App

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INTRODUCTION

This project is aimed at developing an app to use your Android phone to control your Laptop. This application will be very initiative and would have features like Control Left Click, Right Click, Mouse Scroll, Type text Transfer files from phone to laptop, all the basic media and computer control. For this project we'll need Android Studio for our app implementation, Kotlin Language for backend, XML also used MVVM for application frontend and architectural layout.

User can also perform features like Download files from laptop to phone,
Use their laptop as speaker to play music files of phone, and See images of phone on laptop Control presentation on laptop via phone
Suspend, Restart or Shut down your laptop using phone
Fetch your laptop screen to Android (only single click supported) Browse Android files on Desktop (View and Download)

It enables you to transfer files across different platforms, mirror and remote control mobile devices, receive and reply to messages on the computer.

OBJECTIVE

There exist several situations where we want to wirelessly and comfortably operate or access a computer, where the computer screen is projected onto a big screen through a projector or big-screen television, such as classrooms, conference/meeting rooms, mobile, workgroup project environments and modern office environments, and even living rooms.

There are many devices in the market to reduce the work required but can only do on or two things and people end up owning multiple devices , some overlapping the functions of others. This can be solved by making the use of one device that almost every human on the planet owns, i.e. mobile phones. Our App makes the use of mobile device to let the user access their computer and perform required functions.

Our app aims to provide following features-

A. Control Left Click, Right Click, Mouse Scroll
B. Type text
C. Transfer files from phone to laptop
D. Download files from laptop to phone
E. Use laptop as speaker to play mp3 files of phone
F. Control presentation on laptop via phone
G. Suspend, Restart or Shutdown laptop using phone

App must be reliable and there must be nice user interface and user experience (UI and UX). Android / Desktop app must be lightweight and must not consume excess resources (memory, CPU, power etc).

MOTIVATION

Think of those lazy weekends when you just don’t want to move a muscle; or those chilling winter nights when you are comfortably enjoying a movie on your couch, and you wished you didn’t have to leave your comfort zone to change the volume or skip tracks.
So, you may think, “Can I use my Android phone as a mouse?” Controlling devices with your mind through a brain-computer interface is not yet commercially viable. Nevertheless, we have Android apps that can work as a PC remote control.

Android apps that can control your other devices via local Wifi, Bluetooth, or from anywhere via the internet come in handy for remote administration.

TECHNOLOGIES USED

1 **XML** stands for Extensible Mark-up Language, which gives us a clue to what it does. A mark-up language is slightly different from a programming language. Whereas a programming language (C#, C++, Java, Kotlin, Python, BASIC) will allow you to define behaviours, interactions, and conditions; a mark-up language is used more to describe data, and in this case, layouts. Programming languages create dynamic interactions, whereas mark-up languages generally handle things like static user interfaces.

2 **KOTLIN** is a cross-platform, statically typed, general-purpose programming language with type inference. Kotlin is designed to interoperate fully with Java, and the JVM version of Katlin's standard library depends on the Java Class Library, but type inference allows its syntax to be more concise Although, you can use both **Kotlin** and **Java** to develop native android apps, **Google announced in 2019** to make Kotlin the preferred way of developing android applications. If you were to start learning android development today, Kotlin is our language of choice.

3 **HTML**: Hypertext Mark-up Language is the standard mark-up language for documents designed to be displayed in a web browser. It can be assisted by technologies such as Cascading Style Sheets and scripting languages such as JavaScript.
For user interfaces. To make a simple initiative UI for pc also which will be require for functioning of some of the app module.

MODULES

There are 5 modules in the App.

➢ DEVICE CONNECTION

- Bluetooth
- Wi-Fi
- Bluetooth HID Profile

➢ DEVICE CONTROL

- Device Control as mouse
- Use Keyboard functionality
- Type Text

➢ FILE TRANSFER

- Send file from Pc to device
- Send file from device to pc
- Device here refers to android phone.
- Download files from laptop to phone

➢ MEDIA CONTROL

- Use your laptop as speaker to play music files of phone
- See images of phone on laptop
- Control presentation on laptop via phone

➢ ADDITIONAL CONTROLS

- Suspend, Restart or Shut down your laptop using phone.
- Fetch your laptop screen to Android (only single click supported)
- Browse Android files on Desktop (View and Download)

REQUIREMENTS

➢DEVELOPMENT HARDWARE USED:

Development Hardware that we have used is listed below:

- I5 7th/ i7 7th /9th GEN HQ KABI-LAKE/ KABI-LAKE / Coffee Lake Family
- RAM – 8/12GB
- 1/2TB HARDRIVE + 128GB/256GB SSD

➢SOFTWARE USED:

- Microsoft Windows 7/8/10 or Linux
- Balsamiq / Figma
- Android Studio/Canary

FUTURE SCOPE

The future scopes for this project are many. We are looking to add more functionalities . We hope to add a gamming console like functionality i.e. a person will be able to use their mobile devices as a gamming console.

We are also exploring approaches of using smart devices as controllers or operators for other devices. We are also exploring possibilities of developing app for desktop which will control mobile functionalities and apps e.g. calling, texting from desktop app.

REFERENCES

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