International Journal of Scientific Research in Engineering and Management (IJSREM)
Volume: 09 Issue: 10 | Oct – 2025 SJIF Rating: 8.586 ISSN: 2582-3930

Remote Desktop Pilot

Dr. M. Sengaliappan 1, Bala Nithiyanantham . M 2

1 Professor & Head , Department of Computer Applications , Nehru College of Management , Bharathiar University , Coimbatore, Tamilnadu , India

Cmsengs.7@gmail.com

2 Master of Computer Applications, Nehru College of Management , Bharathiar University , Coimbatore , Tamilnadu , India

m.s.alab0078@gmail.com

ABSTRACT

Our PC control app is a powerful and versatile tool that enables you to remotely access and manage your Windows or DOS-based programs on your computer from your mobile device or another computer. With an intuitive interface and easy-to-use controls, you can easily navigate your PC, transfer files, and launch programs with just a few clicks or taps.

The app offers reliable connectivity and impressive speed, making it an ideal solution for users who require efficient and seamless remote PC control. It is compatible with various platforms, including Windows, IOS, and Android, and offers secure connectivity to ensure your data remains safe.With our PC control app, you can transform your mobile device or remote computer into a wireless keyboard, mouse, and remote control for your computer. You can easily control your PC's media player, browse the web, and access your files and folders with intuitive controls.

The app is perfect for users who require remote access to their PC while on-the-go, whether it's for work or personal use. It is an ideal solution for professionals who need to access their work computer from home, students who need to access their files from a remote location, or anyone who wants to control their PC from another device. The app is also customizable, allowing users to tailor the interface to their specific needs. You can create custom shortcuts, set up hotkeys, and even customize the layout of the virtual keyboard and mouse. With its flexibility and ease of use, our PC control app is the perfect solution for anyone looking to remotely access and manage their PC.

1. INTRODUCTION

A PC control app is the software that enables remote access and control of a computer through another device. It allows users to perform various tasks such as file transfer, remote desktop access, and system administration. These apps have become an essential tool for businesse and individual's alike, providing flexibility, convenience, and increased productivity.

Beyond Trust is a leading provider of PC control apps, offering a wide array of services and benefits tailored to specific needs. Their solutions protect companies from cyber threats and empower help desk teams too quickly and

securely access and fix any remote device.

Beyond Trust's remote control and screen share features help scale support

effectively, while reducing time-to-resolution. Remote support software is designed to virtually replicate an in-person remote support experience, allowing technicians to securely access and view the screens of almost any computer, mobile device, or other endpoint.

Intelligent collaboration and escalation capabilities mean technicians can collaborate with other technicians directly in support requests, or pass them higher up the chain to ensure support requests are handled and resolved as effectively as possible.

Chat support, remote camera sharing, canned scripts, and skills-based routing, are just some of the out-of-the-box capabilities that empower your team to drive faster incident resolution and boost productivity. Full-featured integrations with existing ITSM deployments and ticketing solutions, add streamline workflows, while incorporating important context for driving efficient resolutions.

Use Remote Support's canned scripts feature to send commands with one click, run patches or apps on remote desktops and servers, and automate routine diagnostics, troubleshooting, and remediation steps.

The broader the platform support, the better you can standardize support using a single tool to improve incident handling time, technician productivity, and reap other efficiencies. The BeyondTrust solution supports, Windows, Linux, macOS, Chrome OS, iOS, Android, Zebra devices, kiosks, and other machines--whether on or off network.

Enable secure remote support from any web browser, anywhere in the world. No desktop application or plugins required from the end user or system.

BeyondTrust’s Web Rep Console lets you offer secure remote desktop from any web browser (Chrome, Firefox, Edge, etc.) on any computer, allowing you to immediately begin diagnosing and fixing issues from any location.

Securely store, share, and track the use of privileged credentials by the IT service desk. Vault for Remote Support mitigates the threats in your service desk related to stolen credentials and passwords.

Jump clients enable you to control remote computers, even when you aren't controlling the remote network. Simply install a Jump Client on each system you need access to, and you'll be able to control and service it wherever it goes, whether or not the person on the other end of the session is present.

With Remote Support Jump Clients, manage unattended access to hundreds or thousands of systems as your IT infrastructure grows, and create mass installer packages for both Representative Consoles and unattended endpoints.

Jump Clients can be installed on Windows, Mac, Raspberry Pi, or Linux computers, as well as Android phones and tablets. You can access them from any platform BeyondTrust supports, from any location.

BeyondTrust Remote Support's Shell Jump gives technicians remote access to SSH- enabled or Telnet-enabled devices via a Jumpoint, enabling secure command line access to the remote system in question.

Modify Shell Jump settings directly from the command line and fine-tune access parameters across your organization's estate.

Implement strong foundational security across your service desk with granular roles, permissions, and session policies. Enforce least privilege and ensure technicians have just the right amount of access needed for their role.

Implement Native 2FA

BeyondTrust Verify is a TOTP native 2FA capability that can be enabled for any Remote Support user and further verifies the identity of users before a Remote Support session is launched.

2. SYSTEM CONFIGURATION

2.1 Software Configuration

SOFTWARES USED:

- JAVA FX

- JavaFX is a software platform for creating and delivering desktop applications, as well as rich internet applications (RIAs) that can run across a wide variety of devices. JavaFX is intended to replace Swing as the standard GUI library for Java SE, but both will be included for the foreseeable future. JavaFX has support for desktop computers and web browsers on Microsoft Windows, Linux, and Mac OS X.

- Before version 2.0 of JavaFX, developers used a statically typed, declarative language called JavaFX Script to build JavaFX applications. Because JavaFX Script was compiled to Java bytecode, programmers could also use Java code instead.
JavaFX applications could run on any desktop that could run Java SE, on any browser that could run Java EE, or on any mobile phone that could run Java ME.

- JavaFX 2.0 and later is implemented as a native Java library, and applications using JavaFX are written in native Java code. JavaFX Script has been scrapped by Oracle, but development is being continued in the Visage project. JavaFX 2.x does not support the Solaris operating system or mobile phones; however, Oracle plans to integrate JavaFX to Java SE Embedded 8, and Java FX for ARM processors is in developer preview phase.

- On desktops, JavaFX supports Windows XP, Windows Vista, Windows 7, Windows 8, Windows 10, Mac OS X and Linux operating systems. Beginning with
JavaFX 1.2, Oracle has released beta versions for OpenSolaris. On mobile, JavaFX Mobile 1.x is capable of running on multiple mobile operating systems, including Symbian OS, Windows Mobile, and proprietary real-time operating systems.

- JavaFX 1.1 was based on the concept of a "common profile" that is intended to span across all devices supported by JavaFX. This approach makes it possible for developers to use a common programming model while building an application targeted for both desktop and mobile devices and to share much of the code, graphics assets and content between desktop and mobile versions.

- To address the need for tuning applications on a specific class of devices, the JavaFX 1.1 platform includes API that are desktop or mobile-specific. For example JavaFX Desktop profile includes Swing and advanced visual effects.

2.2 HARDWARE CONFIGURATION

For a PC control app using Java, you'll need a hardware configuration that includes a computer with a Java Development Kit (JDK) installed. The JDK is the software development environment for the Java programming language.

The general hardware requirements for a typical PC control app:

- Processor: A modern multi-core processor with a speed of at least 1.5 GHz is recommended.

- Memory: At least 4 GB of RAM is required, although 8 GB or more is recommended for optimal performance.
- Storage: A solid-state drive (SSD) with at least 100 GB of free space is recommended, although a traditional

hard drive (HDD) with at least 500 GB of free space may also be sufficient.

- Network: A high-speed internet connection with a minimum upload and download speed of 10 Mbps is recommended.
- Display: A monitor with a resolution of at least 1024 x 768 pixels is required, although a higher resolution display may provide a better user experience.
- Input devices: A keyboard and mouse are required, although a touch screen display may also be used.

In addition to these specifications, it's important to choose a computer with a reliable and fast internet connection to ensure seamless communication between the mobile device and the PC.

When developing an app for Android, it's recommended to use Windows 10 or higher as the operating system and the latest version of the Android Studio IDE. For iOS mobile app development, the minimum Xcode IDE version is Xcode 11, and the minimum Mac operating system is macOS Mojave 10.14.3 or higher.

Overall, a high-performance computer with the above specifications can help ensure efficient and productive mobile PC control app development.

- Processor: Intel Core i7 or equivalent
- Memory: 16GB DDR4 RAM
- Storage: 512GB SSD
- Graphics: NVIDIA GeForce GTX 1650 or equivalent
- Display: 15.6" Full HD IPS
- Operating System: Windows 10 or macOS
- Connectivity: Wi-Fi 6 and Bluetooth 5.0
- Ports: USB 3.1, HDMI, and headphone jack

3. SYSTEM ANALYSIS

3.1 EXISTING SYSTEM

- PC Control App is used to smoothly control cursor and keyboard activities on laptop/pc using android phone.
- To send and receive data from phone and laptop.
- To transfer android files to desktop as well as to download desktop files to android.
- To play media player on fly and to view gallery controlled by android. To control presentation on desktop and to enable shutdown of computer from android.

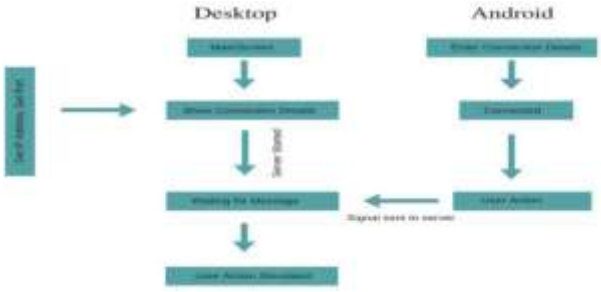
3.2 PROPOSED SYSTEM PRE-CONDITION:

- The remote computer and the local computer must be connected to the same network or the internet.
- The remote computer and the local computer must have the necessary software and hardware required for remote access.
- The remote computer and the local computer must have a unique IP address or hostname.
- The user must have the necessary permissions to access the remote computer.
- The user must have the remote PC control app installed on the local computer.

POST-CONDITION:

- The app is installed and functioning correctly on the target PC.
- The app is able to connect to the remote server or control center.
- The app is able to receive and execute commands from the remote server or control center.
- The app is able to send data and status information back to the remote server or control center.
- The app is able to perform any required actions on the target PC, such as starting or stopping services, installing or uninstalling software, or modifying system settings.
- The app is able to handle errors and exceptions gracefully, and provide informative error messages to the user or administrator.
- The app is able to log all activity and events for auditing and compliance purposes.
- The app is able to terminate cleanly and release any resources it has allocated.
- The remote computer and the local computer should establish a secure connection.
- The user should be able to control the remote computer remotely using the remote PC control app.
- The user should be able to view the remote computer's desktop, files, and applications.
- The user should be able to transfer files between the remote computer and the local computer.
- The user should be able to perform remote tasks such as remote printing, remote registry editing, and remote command line execution.
- The remote PC control app should provide a user-friendly interface that allows users to perform remote tasks easily and efficiently.
- The remote PC control app should ensure the security and privacy of the remote computer and the data being transferred.
- The remote PC control app should provide a reliable and fast connection between the remote computer and the local computer.
- The remote PC control app should be able to handle multiple remote connections simultaneously. The remote PC control app should provide logging and reporting capabilities for auditing and troubleshooting purposes.

4. DATA FLOW DIAGRAM



5. SYSTEM TESTING

- System testing for a remote PC control app involves testing the app as a whole to ensure that it meets the specified requirements and works as expected. This type of testing is typically performed after functional testing and aims to identify any system-level issues that may affect the app's performance, reliability, and security.
- In system testing for a remote PC control app, various types of testing may be performed.
- Performance testing: This involves testing the app's performance under different conditions, such as high network latency, low bandwidth, and heavy load. The goal is to ensure that the app can perform well under various conditions.
- Security testing: This involves testing the app's security measures to ensure that they are effective and can protect against unauthorized access and data breaches. This may include testing the app's encryption, authentication, and authorization mechanisms.
- Compatibility testing: This involves testing the app's compatibility with different operating systems, hardware configurations, and network environments. The goal is to ensure that the app can work seamlessly across different platforms.
- Usability testing: This involves testing the app's user interface and overall user experience to ensure that it is easy to use and meets the needs of the intended users.
- Recovery testing: This involves testing the app's ability to recover from various types of failures, such as network failures, hardware failures, and power outages. The goal is to ensure that the app can handle failures gracefully and recover quickly
- By performing system testing for a remote PC control app, you can ensure that the app is reliable, secure, and performs well under various conditions. This can help to build user trust and confidence in the app, and ultimately lead to a better user experience.

Packages and Classes structure- Desktop Part-

Java Packages	Java Classes
Image	ImageViewer
Music	MusicPlayer
remotecontrolpc.desktop	MainScreen Utility
remotecontrolpc.desktop.filesharing	FileAPI ReceiveFile SendFile SendFilesList
remotecontrolpc.desktop.ipaddress	GetFreePort GetMyIpAddress
remotecontrolpc.desktop.mousekeyboardcontrol	MouseKeyboardControl
remotecontrolpc.desktop.poweroff	PowerOff
remotecontrolpc.desktop.server	Server

6. SYSTEM IMPLEMENTATION

1. How to connect :

- Start hotspot on phone and connect your laptop via wifi
- Open the desktop app on your laptop
- Open Android app and enter connection details provided by desktop app to connect

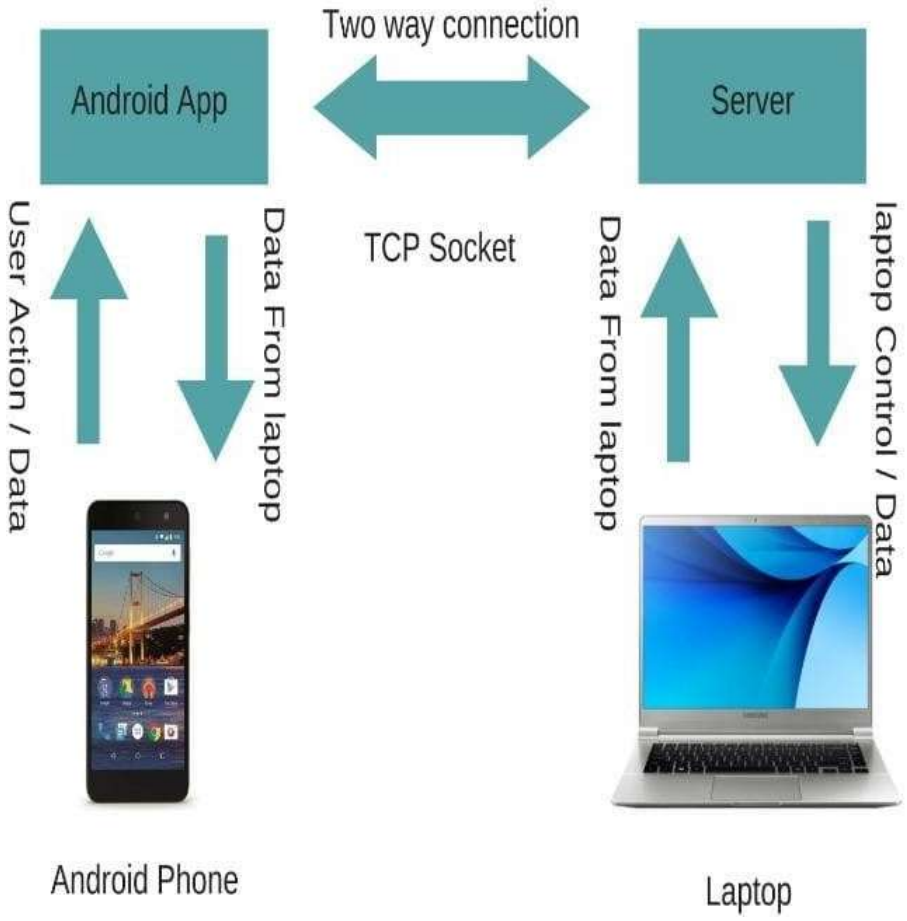
2. App Dependencies :

- User must have JRE 8 installed
- Only Android mobiles are supported
- Working wifi/hotspot is necessary

3. Limitations :

- Media Player and Image Viewer work only after transferring complete file. There is no live streaming. This cause some delay depending on file size.
- Shutdown, Restart and Suspend features do not work on Linux due to security issues.

Working Model of Remote Control PC



A socket connection is established between android device and desktop. This two way connection is used to send as well as receive data from phone and PC. Any user activities on phone is simulated on PC using desktop app.

Implementing a remote control PC app typically involves the following steps:

1) Identify the specific requirements: Determine the features and functionality you need in your remote control PC app. This could include things like support for different operating systems, encryption for secure connections, and the ability to transfer files.

2) Choose a remote desktop protocol: There are several remote desktop protocols available, each with its own strengths and weaknesses. Some popular options include Remote Desktop Protocol (RDP), Virtual Network Computing (VNC), and Independent Computing Architecture (ICA).

3) Develop the client application: This is the software that will be installed on the user's local machine. It needs to be able to initiate a connection to the remote machine, encode and transmit the user's input, and display the remote machine's output.

4) Develop the server application: This is the software that will be installed on the remote machine. It needs to be able to accept incoming connections, decode the user's input, and send the output back to the client.

5) Implement the authentication and authorization system: This is to ensure that only authorized users can access the remote machine. This could involve a simple username and password system, or something more complex like multi-factor authentication.

6) Implement the remote machine control mechanisms: This includes things like the ability to transfer files, print documents, and remotely restart the machine.

7) Test the application: Make sure the application works as expected in a variety of scenarios. This could include testing the application on different networks, with different firewall configurations, and with different operating systems.

8) Deploy the application: Once the application has been tested and is working as expected, it can be deployed to the users. This could involve creating an installer for the client application, setting up the server application on the remote machines, and providing documentation and support for the users.

RemoteControlPC-Android:

Android part of the project which has been developed in Eclipse.

Eclipse IDB

Eclipse is an integrated development environment (IDE) used in computer programming, and is the most widely used Java IDE.[3] It contains a base workspace and an extensible plug-in system for customizing the environment.
Eclipse is written mostly in Java and its primary use is for developing Java applications, but it may also be used to develop applications in other programming languages through the use of plugins, including: Ada, ABAP, C, C++,

COBOL, D, Fortran, Haskell, JavaScript, Julia,[4] Lasso, Lua, NATURAL, Perl, PHP, Prolog, Python, R, Ruby (including Ruby on Rails framework), Rust, Scala, Clojure, Groovy, Scheme, and Erlang. It can also be used to develop documents with LaTeX (through the use of the TeXlipse plugin) and packages for the software Mathematica.
Development environments include the Eclipse Java development tools (JDT) for Java and Scala, Eclipse CDT for C/C++ and Eclipse PDT for PHP, among others.

- The initial codebase originated from IBM VisualAge.[5] The Eclipse software development kit (SDK), which includes the Java development tools, is meant for Java developers. Users can extend its abilities by installing plug-ins written for the Eclipse Platform, such as development toolkits for other programming languages, and can write and contribute their own plug-in modules.

- Released under the terms of the Eclipse Public License, Eclipse SDK is free and open-source software, although it is incompatible with the GNU General Public License.[6] It was one of the first IDEs to run under GNU Classpath and it runs without problems under IcedTea.

- Eclipse was inspired by the Smalltalk-based VisualAge family of integrated development environment (IDE) products.[5] Although fairly successful, a major drawback of the Visual Age products was that developed code was not in a component model; instead, all code for a project was held in a compressed lump (somewhat like a zip file but in a proprietary format called .dat); individual classes could not be easily accessed, certainly not outside the tool. A team primarily at the IBM Cary NC lab developed the new product as a Java-based replacement.[7] In November 2001, a consortium was formed with a board of stewards to further the development of Eclipse as open-source software. It is estimated that IBM had already invested close to $40 million by that time.[8] The original members were Borland, IBM, Merant, QNX Software Systems, Rational Software, Red Hat, SuSE, TogetherSoft and WebGain.[9] The number of stewards increased to over 80 by the end of 2003. In January 2004, the Eclipse Foundation was created.

- Eclipse 3.0 (released on 21 June 2004) selected the OSGi Service Platform specifications as the runtime architecture.

- The Association for Computing Machinery recognized Eclipse with the 2011 ACM Software Systems Award on 26 April 2012.

- The Eclipse Public License (EPL) is the fundamental license under which Eclipse projects are released. Some projects require dual licensing, for which the Eclipse Distribution License (EDL) is available, although use of this license must be applied for and is considered on a case-by-case basis.

- Eclipse was originally released under the Common Public License, but was later re-licensed under the Eclipse Public License. The Free Software Foundation has said that both licenses are free software licenses, but are incompatible with the GNU General Public License (GPL).

RemoteControlPC-Desktop:

Desktop part of the project which has been developed in Netbeans.

RemoteControlPC-Libraries:

Library (jar file) used by both android as well as desktop part. It has been developed in Netbeans.

NetBeans IDE:

- NetBeans IDE is an open-source, free, and cross-platform integrated development environment.
- It supports development in various programming languages, including Java, JavaScript, PHP, HTML5, CSS, and C++.
- NetBeans IDE provides a complete development cycle from project creation to deployment.
- It supports the latest Java technologies, including JDK 8, Java EE 7, and JavaFX 2, and provides full support for the GlassFish Server.
- NetBeans IDE is modular, allowing applications to be developed from a set of modular software components called modules.
- It has a built-in profiler for monitoring Java applications and finding memory leaks.
- NetBeans IDE includes a drag-and-drop GUI design tool for Swing GUIs.
- It provides extended support for JavaScript, Ajax, and CSS, including code completion, refactoring, and automatic browser compatibility checks.
- NetBeans IDE supports PHP, Ruby, and Groovy development.
- It includes a visual debugger, version control, and support for Maven and Ant build tools.
- NetBeans IDE is available for Windows, Linux, Mac OS X, and other UNIX- based systems.
- It has a large and active community of developers and contributors.
- NetBeans IDE is licensed under the Apache License 2.0.
- NetBeans IDE supports development of all Java application types (Java SE, Java EE, Java ME, web, EJB, and mobile applications) out of the box.
- It has a built-in support for CVS, Subversion, Git, Mercurial, and Clearcase .

7. FUTURE ENHANCEMENTS

Here are some potential future enhancements for a remote control PC app:

Integration with cloud services: This could include the ability to save and load sessions in the cloud, or the ability to access remote machines from any device with an internet connection.

Support for mobile devices: This could include the ability to control a remote PC from a smartphone or tablet.

Improved security: This could include things like support for multi-factor authentication, end-to-end encryption, and the ability to set up permissions for different users.

Automated backups: The ability to automatically backup important files on the remote machine to a local or cloud-based storage location.

Integration with productivity tools: The ability to integrate with other productivity tools, such as project management software, to make it easier for users to manage their workflow.

Improved performance: This could include things like support for higher resolution displays, faster data transfer rates, and the ability to handle multiple simultaneous connections.

Support for virtual machines: The ability to connect to virtual machines, allowing users to run multiple operating systems on a single physical machine.

Integration with IOT devices: The ability to control IoT devices, such as smart home appliances, from the remote control PC app.

Automated maintenance: The ability to perform automated maintenance tasks, such as updating software and running system diagnostics, on the remote machine.

Integration with AI and machine learning: The ability to use AI and machine learning algorithms to improve the performance and functionality of the remote control PC app.

8. BIBLIOGRAPHY

References

[1] https://en.wikipedia.org/wiki/Android_(operating_system)

[2] http://www.cs.rutgers.edu/~pxk/rutgers/notes/sockets/

[3] Y. Yang and L. Li, "Turn Smartphones into Computer Remote Controllers " International Journal of Computer Theory and Engineering, Vol. 4, No. 4, Page No 561 - 564

[4] https://docs.oracle.com/javase/7/docs/api/java/awt/Robot.html

[5] https://developer.android.com/guide/index.html

[6] https://blog.idrsolutions.com/2015/04/javafx-mp3-music-player-embedding-sound- in-your-application/

[7] http://stackoverflow.com/questions/12715321/java-networking-explain- inputstream-and-outputstream-in-socket