Abstract—Since 2012 MONECT has been developing the conceptuality for making a remote controller for different types of device controlling where recently in 2017 the including of remote desktop session with gaming control of different games such as racing, Frames Per Seconds (FPS), Role-Playing Game (RPG) and many more where each type of game had its own different type of setup with a familiar layout for those who were used to having different types of controllers for each individual gaming style. Under that development project outcome, the application made full use of the onboard sensors to provide the user with the ultimate experience while playing (Accelerometer, G-Sensor, Gyro etc). Frames Per Second (FPS) mode enabled the gyroscope sensor allowing one to aim at their perspective targets while the Race mode used the G-Sensor to enable steering.

Keywords: Virtual Gaming Layout, Remote Sessions, User-Oriented, Simultaneous Interaction.

I. INTRODUCTION

Remote Desktop Connection (RDC) or Remote Desktop Protocol (RDP) is a proprietary protocol developed by Microsoft, which provides a user with a Graphical User Interphase (GUI) to connect to another computer over a network connection [10]. The user deploys the RDP client software for that purpose, while the other must run RDP server software. Microsoft currently refers to their official RDP client software as Remote Desktop Connection, formerly “Terminal Services Client” [5]. However, this protocol was a one-way connection as in one host session and no simultaneous interaction among devices. In other words, there were limitations [6]. But MONECT came up with the idea for an application which can have a simultaneous session for both hosts or both devices [1]. Thus, came the PC Remote application [2]. The application was a device compatible application so no rendering took place whether if one was an IOS or Android or whether a Windows Phone user. There had been no limitation towards device compatibility. Various functions had been integrated with the app however how much caliberable varied from user to user as each and every individual had a different set of needs from the privileged application. No need requirement for hardware but users had to install the provided driver in order to run the Application (link address: www.monect.com). Since it was an application user needed to download the main file from Google Play Store (Monect PC Remote). For better efficiency, the link for the individual platform was also provided in the webpage link address. The application was designated from Android Version 4.0 as Ice Cream Sandwich so that it would be compatible with almost 98% of apk platforms and if the usable devices were equipped with higher versions which would be much more better for the prospective users. The process was as simple as download and install afterward it’s installation configuration with basic wifi connection to configure with the system to the user who wanted to connect and run the application. The user had to be within the same network for the establishment regarding the connection. In this paper, the features and properties that were developed within the application will be described and the formulation of the application will be discussed.

II. FORMULATION OF THE APPLICATION

The Hardware implementation was configured and formulated within The Smartphones themselves. Each and every Smartphone was Unique in its own way with both Features and Functionality but one thing which still remained stagnant was the Sensors that were associated with it. Where almost 95% of the Smartphones had almost all the basic sensors which the application needed to collaborate with the devices associated with it and the rest was just Software implementation with some codings and terminal commanding sequence of the program.

Fig. 1: The sensors needed for the application

The application was built under three phases where each and every connection was confirmed through the Internet Protocol (IP) associated with the network connection. But this will work only when the user is within the same network [9].

Fig. 2.1: The block diagram of the application (Stage 1)
In order to use the Application first, the setup with configuration was needed and had to be configured. Firstly, from any browser the user would type in the link address and from the provided layout would choose the selected receivers from the version of the OS which the user was currently running and download that and install in their perspective Desktops or Laptops. The installation was a simple rundown so basically it’s just Plug and Play. For clarity, a database was created for user collaboration in the website for questions and steps to set up the application and configuration if one faced any problems.

Although some users would not have associated drivers, the formulation was processed that after installation it would automatically detect and would ask the user to install extensions for the receiver and the user must give access from the Firewall to Allow the connection (There would be pop-ups for Firewall Access after driver detection).

The Smartphone Distribution was also Available on The Google Play Store and on IOS and Windows Platforms. So, Users could use their Smartphone for Direct Download.
### III. VIRTUAL GAMING JOYSTICK

According to the stats, the gamepad was invented and introduced in 1983 which got released in 1985. But in that era of time, it was much complex and hard to manufacture. After Technological improvements in recent years, the scale and quality of gamepads had exceeded gamer expectancy. Still, it’s a costly deal when it comes resolving around gaming setup and control efficiency. One more fact to consider would be the implementation of wires associated with devices.

When the smartphone concept was first brought about it changed the complexion of the features landscape and created a must need for usage. In this era of time Smartphones has become a part of our everyday lives and in this century of modern technological establishments, Smartphones knows no bounds. The Technical Companies provides different sets of Smartphones which comes well equipped with many kinds of Sensors which is where the application comes to play. Not only gaining access to the Smartphone and Operating System simultaneously but also a set of Virtual Joystick Layouts for the User Experience For Almost all kinds of Games (figure 8, 9, 10, 11). Users would be able to control all of it at the same time with the Smartphone. It doesn’t end there as the user could add and design their own perspective layouts there as well cause it’s user-friendly and the scope for customization was also provided.

Each Prospective had its own set of Layout and if one wished one could make the personal layout as well because the user had the option for Adding their Design Layouts. For the configuration, it’s the same as for any wired controller which was normally used in gaming when plugged in. The Virtual Layout was shown in the Setup Control Menu in All Games but needs to be configured like any other Gamepad. The only difference was that it was Virtual and Remote.

### IV. REMOTE DESKTOP SESSION

Most Users today have been very familiar with Remote Desktop Connections since Windows was the Oldest and Optimum OS till Now. The Application also came with a wondrous feature for Remote Desktop Sessions which was directed to the functionality of the Smartphone. Microsoft introduced Remote Sessions since the development phase of Windows Operating Systems (OS) but there were setbacks which gave limitation for usage in multiple host or guest sessions which was developed and reconfigured in MONECT to give users the optimum experience [6].

While using Remote Desktop Connection (RDC) the user could access only one Session from a host or guest mode while the other mode switched to lock screen mode and the connection was a forward path [7]. In short one host...
machine but no simultaneous interaction. The application was calibrated to overcome that issue as it had simultaneous interaction and users would be able to control both sessions at the same time. As for how did that work needs to be used by users to see it for themselves then give the review upon the usage. Not only that, users got almost all root privileges except a certain few which were rendered for the development of both products and the functionality of usage with the application.

V. OTHER FEATURES AND USAGE

The mentioned two features were the top-notch features of the application as they were both developed in the time year 2017-2018. Besides those there were powerpoint presentation control with virtual keyboard which was associated with the Smartphone built-in features and configurable with even the simplest controls like Multimedia Layout control along with webpage Uniform Resource Locator (URL) loader and Operating System (OS) Shutdown and Mouse Selection protocol and there was also a Car Camcorder which one would use with their Car (varied from Car to Car) with some built-in games for just plug and play or in the applications term connect and control. There was also a Quick Response Code (QR) code Scanning protocol provided for users for immediate interaction and connection.

But there were still a lot of bugs left to fix within the application and more scope for Updation was required since it was still under development and there were few configuration problems with particular devices. Apart from that, The Application was User-friendly and Ready for Use. More Features and Functionality would be provided and would be updated which would be available to all the Users via The Webpage and Play Store.

VI. CONCLUSIONS

The major difference was that the users had the scope for operation of the application and could add their personal designs along with collaborating ideas to make the application more user-friendly and User-oriented. Remote Desktop Simultaneous Sessions were provided which were limited in other platforms plus no need for External Costing or Hardware implementation. The Application was available for any user with a Smartphone and any Desktop or Laptop associated with it. One could connect at any workplace or industry if there was an Internet Connection. To be more precise, A Remote Control to connect and control user devices.

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