# MC²MU- An Android Parental Control

## Prof Rohini Temkar[1], Sandesh Nambiar[2], Sidharth Purohit[3]

[1]*Department of M.C.A, VES Institute of Technology, Mumbai*
[2, 3]*Student, Department of M.C.A, VES Institute of Technology, Mumbai*
*Corresponding Author: Prof Rohini Temkar*

**ABSTRACT**:MC²MU is an application designed for **M**onitoring and **C**ontrolling **C**hilds **M**obile **U**sage as children nowadays are over exposed to technology at a very early age. The presence of advanced technology in daily activities increase their skills to adapt to latest trends. However, the user-friendly android applications enable the children to obtain any type of information which may or may not be appropriate for them. We must consider that they are incapable of differentiating what is right or wrong, which may result in serious situations that impact the growth of a child. This paper proposes a system that helps to monitor and remotely control the child activities. Cases have been reported of teenagers running away from home and following strangers, using mobile phone to send Short Message Service (SMS) that consist of inappropriate words among couples, downloading pornographic videos and images, accessing unrated websites, over exposure to social network and so on [3]. It is not feasible to deny a feature like internet browser or messaging to prevent inappropriate use [4]. This paper proposes an android parental control application which enables users to be free from complex interfaces and thus allows monitoring using simple web pages, enabling content filtering without complete denial. This application consists of UI for both parents and children as per the configuration done during installation. The system uses device id of mobile to identify parent and child.

The next section of the paper presents related work on parental control. Section III describes the need of the application with section IV defines the modules as proposed by the paper and section V presents the system architecture. The paper concludes in Section VI.

**KEYWORDS**:Parental control, monitoring application, android monitoring, MDM and application usage.

## I. INTRODUCTION

MC²MU is an application developed for **M**onitoring and **C**ontrolling **C**hilds **M**obile **U**sage.With the introduction of easily carriable devices like laptops and cell phones, internet has now gone from being a privilege to a necessity. It is also teeming with pages and sites that are inappropriate for the highly impressionable minds of children. Any type of information is available to access using a web browser, which may include dangerous content. Dangerous content generally refers to adult content that should be viewed by ages of 18 and over only. It also includes violence, offensive words, gambling related material [4]. With the boom in video games and android games youngsters are stuck to their phones, now more than ever. Teenagers are very much indulged in spending time on trending applications and games. Kids also, are privy to a lot of information, that might or might not be age appropriate, from social media sites like Facebook, Instagram or video sharing sites like YouTube. The amount of time children spend on these sites has also increased substantially. It is becoming very difficult to track, monitor and limit the children's mobile usages and the content they view. There are a lot of negative effects of spending time continuously in front of laptops, tabs, mobile phones or any other electronic devices, some of which are listed below:

*   The creative thinking and imagination of children are hampered. [11]
*   Shortened attention span in children.
*   Reduced opportunity to develop social skills.
*   Children become more passive or aggressive.
*   Lack of exercise that can lead to obesity and other negative health effects.

Even though the adverse effect of inappropriate content is a known and accepted fact, there is a startling lack of tools to curb the increasing usage of internet, apps and by association, the mobiles, laptops etcetera. The existing parental control applications notify parent of the apps and games child uses, they do not restrict its use. A system where the parent decides that x hours can be allotted in a week for a game, after which the application do not show up is of utmost importance at this moment. This will not only monitor but also help children to spend more time in productive activities rather than games.

As compared to existing systems that just reports usage of dangerous material to parent, we need a system that blocks content that are considered to be inappropriate. The proposed system blocks such access to in appropriate content and reports the activity to parent. The parent app UI consist of options to control the child's mobile app and display statistical information of the activities undergone in child's mobile, while child's application is a background process that gets information and controls the mobile as per guidelines set by parent. The system is solely online and does not require any special installation to use it, which makes it very easy to handle.

## II. RELATED WORK

The current applications based on parental control provide monitoring service and controlling service to an extent. Considering the scenario of tracking the child location, the existing system notifies parent location of the child's phone. However, the tracking is only possible if the GPS (Global Positioning System) is enabled, which is controlled by the child. This makes it inefficient for the parent to rely on application for tracking location. A system is needed where the parent can force enabling of GPS overriding the child's preferences.However, the control can be achieved by getting root access of the child's mobile.

## III.NEEDOF THE APPLICATION

Parental control apps can help you maintain control in a wide variety of ways. Some of the most common types of monitoring include web content filtering, app blocking, time management, and location tracking.Parental control software tends to be more powerful on Android than on iOS since Apple locks down app permissions and device access. Most parental control apps for iPhones require you to install a mobile device management (MDM) profile in order for all of the features.

1.       Web Filtering: The hallmark feature of any parental control app is its ability to prevent kids from accessing inappropriate or dangerous websites. The majority of these apps bundle a proprietary browser that makes it easier for the services to manage, track, and control browsing activity. This makes more sense than trying to reverse engineer support for every conceivable mobile browser. As such, most of these apps instruct you to block every other browser or restrict your child from installing any other apps at all.

2.       App Blocking and Time Restrictions: One area in which most mobile parental control solutions excel is in their ability to prevent children from using selected apps. This can come in handy for parents looking to prevent their kids from using social media apps, messaging services that are difficult to monitor, or browsers that get around the defined web filters. Still, it can be difficult to keep track of every new app that your child installs. Better yet are those services, such as Boomerang, that automatically block new apps your child installs until you explicitly approve them.

3.       Location Tracking: A mobile parental control app should at the very least be able to keep track of a child's current location and some historical location data, too. It's also important for them to offer some level of control over notifications and the frequency of location reporting, to avoid bombarding the parent with useless data. Both Qustodio and Norton Family offer these features.

4.       Communication and Extras: The best parental control applications let you record and monitor who your child communicates with and what they talk about in said conversations. Keep in mind that this capability is almost exclusively limited to Android. The implementation of this feature varies from service to service, of course. FamilyTime Premium, for example, copies a child's entire SMS history and call log for parents to review. Norton and Boomerang take a less invasive approach and let you specify which conversations to monitor and log. Still others, like Locategy, only display the phone's call log.

5.       Keep in Touch With Your Kids: Although the range of features that parental control software supports is impressive, no system is perfect. If your children want to get around the limitations you impose, they will likely be able to do so either by using unmonitored devices or finding ways to wipe their devices clean of the controlling apps.

## IV.MODULES

Parent is provided with tracking and controlling following features of child's mobile:

- **Location:**

This module helps you to keep a track of child's movements around the city and be rest assured that your beloved tot is safe and sound. It includes a force GPS command that enables GPS on child's device if it is disabled by the child. Parent can thus know if the child is hanging out in the bad side of the town.

- **Messages and Call Logs:**

This module helps you to keep in touch with your child's everyday social interaction. It assures you that your child is not messing around with the wrong crowd. It keeps record of each incoming and outgoing calls and

SMS. The application also allows parent to block calls and SMS from specified numbers thus allowing control over the child's social interaction.

- **Websites:**

This module provide parent with features like blocking access specific types of websites (pornography, anti-social, narcotic), reporting keywords used to seek information and providing list of websites accessed. It acts as a filtering mechanism between child and internet, thus shielding them from anti-social elements.

- **Application Usage:**

This module allows parent to track usage of all application in child's device including the frequently used application and duration the application was used. It also allows the parent to allot time an application can be used, thus restricting over use of applications. To avoid multiple configuration for each application, groups can be created of applications that belong to similar category (games, social) and common configurations can be applied to specific groups.

## V. SYSTEM ARCHITECTURE

The proposed android application has two modes viz. parent and child. On the child's mobile it is a background process that runs till the device is powered on. It collects data from the child's mobile and stores it in database, which is then read by the parent using the same application in parent mode. The diagram below illustrates the working of application for both monitoring and controlling the child's device.
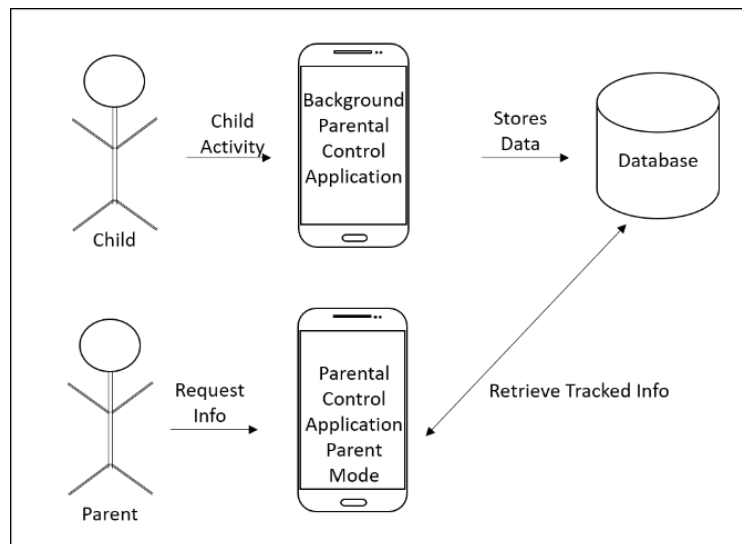


**Figure 1:** Monitoring the child's mobile
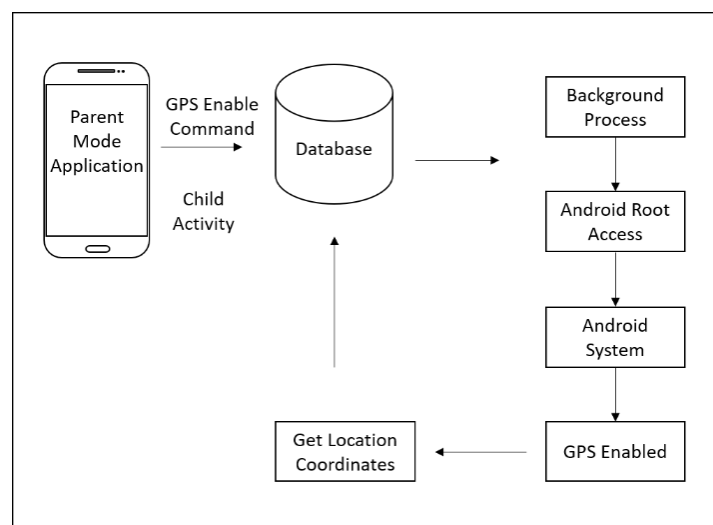


**Figure 2:** Controlling child's device

## VI.CONCLUSION

Children are shaped by the information they are exposed to. The kind of information they are exposed to not only can grant them healthy social life but also affect their decision making in a negative manner. A great portion of internet generated content viewable via smartphones is of harmful nature. It is responsibility of parent to decide what content is healthy and useful to their children. This paper provides a conclusive solution to provide safer the youth of nation and help countries to build better future generations. Parent app has various modules to facilitate this without curbing the child's knowledge about worldly things or putting a stop to their curiosity. It gives control to the parents about what their children view, which keeps them away from negative influences.

## REFERENCES

[1]     https://en.wikipedia.org/wiki/Parental_controls
[1].    http://arxiv.org/abs/1307.3321
[2].    https://www.researchgate.net/publication/249011610_Report_A_Model_for_Remote_Parental_Control_System_Using_Smartphones
[3].    Rafidah Md Noor, Sharifah Noor Sahila Syed Jamal and Khairil Hafizzee Zakaria, "Parental mobile control system for children's internet use", IEEE, 2012.
[4].    Jacques Marais, Johan van Niekerk and Rossouw von Solms, "Mobile parental control: South African youth at risk", IEEE Pervasive Computing and Applications (ICPCA), 2011 6th International Conference on 26-28 Oct. 2011.
[5].    Phakpoom Santisarun, Sirapat Boonkrong, "Social network monitoring application for parents with children under thirteen", Knowledge and Smart Technology (KST), 2015 7th International Conference on 28-31 Jan. 2015.
[6].    http://www.slideshare.net/AmandaBain/powerpoint-on-parental-control-styles
[7].    www.ousd.org/cms/lib07/CA01001176/Centricity/.../Internet_Safety_PowerPoint.ppt.
[8].    https://books.google.co.in/books?isbn=0231520115
[9].    arowe.pbworks.com/f/baumrind_1966_parenting.pdf.
[10].   https://www.parentcircle.com/article/negative-effects-of-internet-use-on-children/
[11].   http://in.pcmag.com/parental-control-monitoring/118921/guide/the-best-parental-control-apps-for-your-phone