

Android Parental Control and Guidance Application

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Abstract— Nowadays more children get access to mobile devices equipped with applications and web sites that are useful or harmful for them. Moreover, if children spend too much time on their mobile devices, they will have less time on developing their social skills. Thus, it is important to have an application that uses an Android operating system that helps parents take control of the child to use their mobile device. Parents and teachers can choose applications and time periods that allow children to use the devices. Moreover, parents or teachers can block inappropriate web sites according to the third party DNS suggestion, such as Norton Connect Safe for Home. Furthermore, parents or teachers can remotely view the web site that displays applications and web sites that children have accessed.

Keywords-component; Android, Parental control

I. INTRODUCTION

Currently more get access to mobile devices equipped with applications and web sites that are useful or harmful for them. Moreover, if children spend too much time on their mobile devices, they will have less time on developing their social skills. Thus, it is important to have an application that uses an Android operating system that helps parents take control of the child to use their mobile device. Parents and teachers can choose applications and time periods that allow children to use the devices. Moreover, parents or teachers can block inappropriate web sites according to the third party DNS suggestion, such as Norton Connect Safe for Home. Furthermore, parents or teachers can remotely view the web site associated with this app to view current applications and web sites that children have accessed. Last but not least, it also supports multiple profiles for personalized usage of each child.

In this paper, we focus on developing a mobile app on Android which as of September 12, 2012, there are 500 million Android activations [1]. Although there are many available Android parental control but none of them has satisfied our needs. Compared with other related Android applications for parental control [2,3,4], our proposed app can perform these following tasks which other apps cannot provide.

1) It provides the log or history of mobile applications and web sites that children have used. Such information is also updated in real-time and accessible online.

2) It suggests the list of applications for children to use by listing installed applications along with its category information.

3) It restricts the access to inappropriate web sites by providing several available DNS servers that perform such tasks.

II. APPLICATION FEATURES

The proposed and developed application has been uploaded on Google play which can be downloaded at <https://play.google.com/store/apps/details?id=com.zerclc.parentalcontrol&hl=en> It can support these following five main tasks.

- 1) Authentication via a four digit password.
- 2) Creating a children profile to set up allowed applications and times.
- 3) Setting up third-party program to provide information about restricted web sites.
- 4) Monitoring mobile application and web sites that children have accessed.
- 5) Separating launchers of guidances and children.

A. Authentication

The application sets up the authentication via a four digit password as shown in Figure 1. In the figure, there are two text fields for a user to enter a new password and reenter the same password to confirm.

This password is to prevent children to access allowed applications or usage times. The password should be kept secret for only parents or teachers.

As children or other people try to get access to the setting of applications or usage times, the lock screen will appear when trying to access the applications and times setting

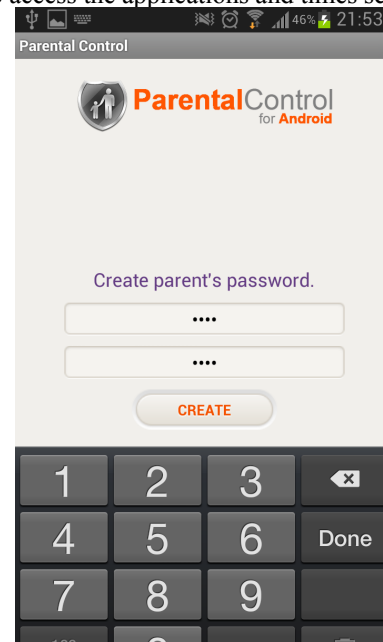


Figure 1. Setting a password on the first use.

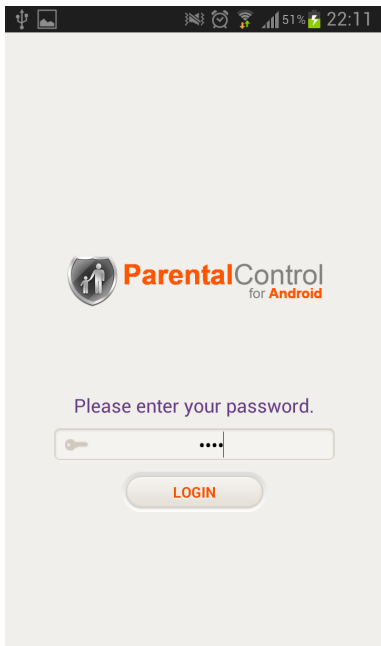


Figure 2. Lock screen will appear when trying to access the applications and times setting

B. Children Profile

Each child can have his/her individual profile which has the setting that specifies 1) mobile applications that children are allowed to access and 2) time periods that allow children to access the mobile device. Parents can set up a new profile for his/her child by clicking at menu plus and then choose one of the available three kinds of profiles. We separate in these three kinds of profiles by Google Play's application content ratings everyone and low maturity for children, medium maturity and below for adolescence, high maturity and below for adult.

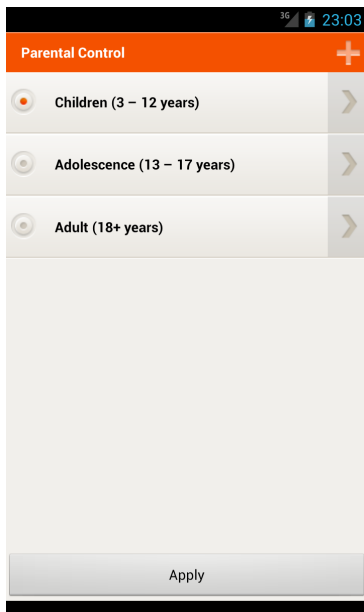


Figure 3. Available three kinds of profiles to choose

In Figure 4, the application displays the list of mobile apps that will appear in the home screen when the child of the current profile.

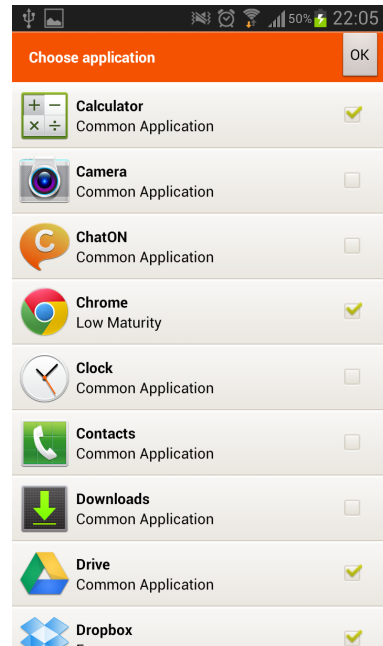


Figure 4. List of applications installed on the device.

It is important that children should be limited with the amount of time spent on the mobile devices so that they have time to do other activities such as reading, writing, playing sports, and doing outdoor activities, and chatting face-to-face with friends.

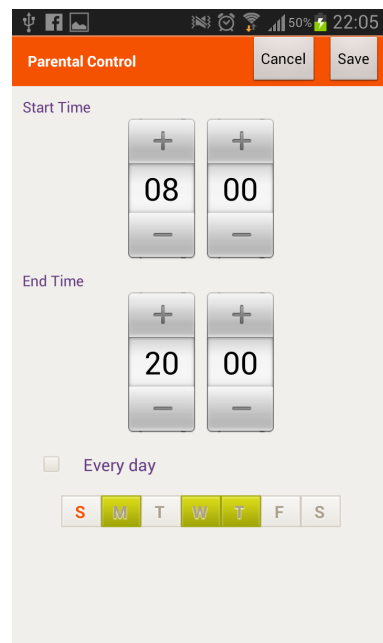


Figure 5. Parents can add, edit, or remove time periods

C. Web Filters

Since there are many unappropriated web sites such as pornography web sites accessible on the Internet, children should not be able to access such web sites especially when they are very young. In Figure 8, it is shown that the developed application has use available free DNS servers as web filters to check whether web sites that children try to access are restricted. If such web sites are restricted, the DNS service will restrict improper web sites as shown in Figure 9.

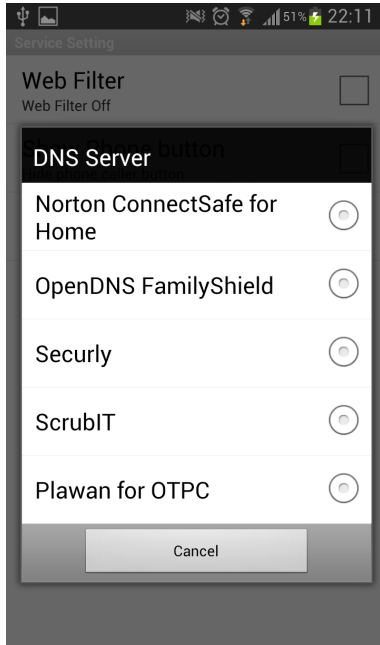


Figure 8. Parents can use web filter by select Safe DNS service to restrict improper web sites.

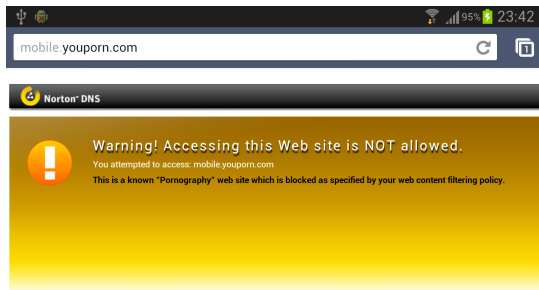


Figure 9. Safe DNS service will restrict improper web sites.

D. Application and Web Monitoring

It is often that parents or teachers may be away from their children but they would like to know what applications or web sites that children have been used. Thus, the proposed Android parental control has the feature that allows parents or teachers to login the online account with an email address and password to view the history of mobile applications and web sites access. Figure 10 shows that the user needs to enter the email address and password to set up an online account. Figure 11 shows the history of apps usage which can be accessible via <http://apps.zeracle.com/pcontrol/index.php>

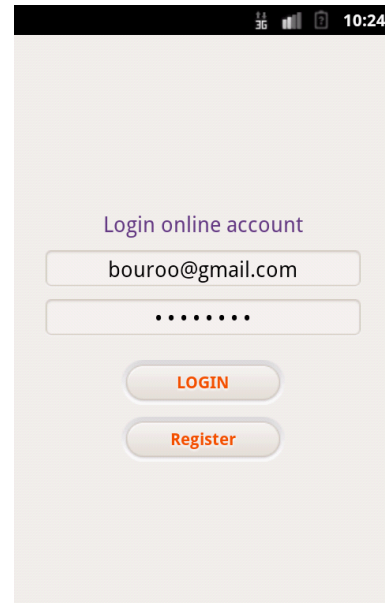


Figure 10. Setting up an online account



Figure 11. Apps monitoring via an online account

E. Launcher Separation

After the parent or teacher creates a profile for their child, their child will have his/her own. Figure 12 shows the new profile newly created by the parent or teacher.

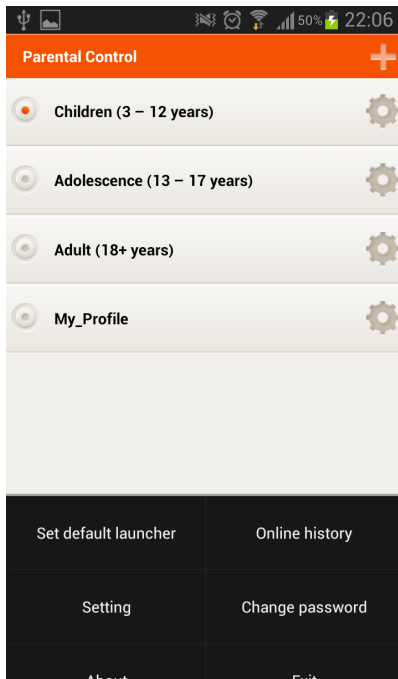


Figure 12. A newly created profile

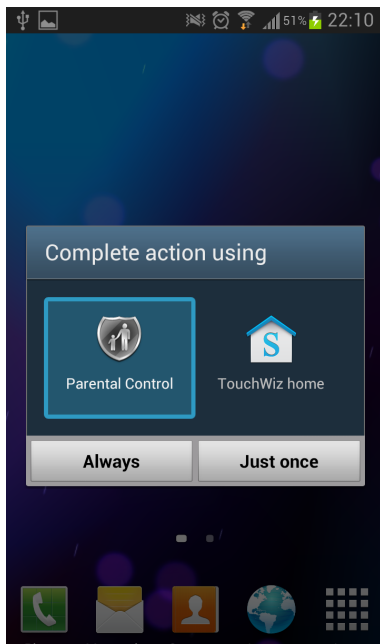


Figure 13. Parents use parent control as a separate launcher

III. DESIGN AND DEVELOPMENT

The work is divided into three parts. First is setting policy for parents. Second is home screen that will show to children to access allowed applications. Third is applications and websites monitoring used to track children's device usage behavior

Development tools

- A. Android SDK [5] set of android API.
- B. Eclipse IDE [6] editor used for develop application.
- C. Java Development Kit [7] used for develop application in java language.

IV. CONCLUSION

We have developed a mobile app to help parents or teachers to restrict only appropriate apps and web sites for children to use. Moreover, it can also sets time periods as well as monitors apps and webs usage.

V. ACKNOWLEDGMENT

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