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Phone Addiction Monitoring : An android Application for Smartphones

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ABSTRACT

Phone Addiction Monitor is application which is based on android platform. The "Phone Addiction Monitor" is to developed for manage the time of phone usage and overcome the spending time on social media. Using an advanced algorithm, the app studies your phone usage and calculates addiction score in real time. Show the graph on daily, weekly & monthly basis, so it is easy to analyse the data and manage time. Application show the Analysis application wise so you can see how much time you spend on each application. An adult checks his phone a taping 110 times a day. That makes it once every 14 minutes. And for most people this peak to once every 6 seconds in the evenings. So, people easily track the phone usage.

Keywords : Phone Addiction, Phone Usage, Social Media.

I. INTRODUCTION

Smartphone are used more often by people today in comparison to past. The mean time spend on social media by a person in 2019 is almost twice of 2015.There is also decrement of 24% (49% to 25%) in use of communication platforms for all time spent on mobiles. People are engaged with Smartphone significantly in terms of time [1].

Addiction mechanism was first observed in 1990 with the appearance of the blackberry. In restaurants, smartphone is generally on the dining table as if all of them are popular doctors of the town or some cops. In multiplexes, people also use their mobiles continuously while watching movie [2].

Recent research, states that a mobile user is likely get undesired outcomes when it becomes addictive. It is becoming a major concern that addiction to technology causes some serious threats for individuals, organization and even society. School performance, family conflicts and many other problems are brought by mobile addiction.[3].

Smartphone used by the people for long duration of time with unhealthy postures such as, bending forward of upper body or bending of neck. If people keep these types of postures for long duration of time their neck and back muscles get strained and spine will be bend, which might cause diseases such as cervical myalgia [4].

Korean government studied and said that the greatest risk of addiction out of all age groups is of children and teenagers. Their ministry also decided upgrade methods and increase the distribution of monitoring smartphone apps, which will block and filter harmful information, to more teenagers, smartphones. Because a youth spent most of its time on playing games on the mobile. To become stress free youth, play mobile games and get addicted with it. The

initiative of reducing addiction should be begin with teenagers [5].

Therefore, to reduce the above-mentioned issues and troubles, we developed an android application for Smartphone users termed as 'Phone Addiction Monitor'.

The advantages of using this application are

- To manage time and overcome with the spending time over social media.
- To let people, know about smartphone addiction.
- To know your addiction, score i.e. How much you are addicted.

II. BACKGROUND AND RELATED WORK

A. Smartphone Addiction

The uncontrollable overuse of smartphone, generally quantified as the time spends by a user accessing their smartphones. It is a type of technology addiction. Cause of overuse of smartphone is unlike PCs and laptops, it can be easily carried by the people anywhere [6].

According to some surveys and studies smartphone addiction is damaging our mind in more than one way. Some studies also indicate that it may affect brain functioning. Smartphone addiction can reduce your ability to focus. It is also harmful to your relationship [7].

Table 1. addictive behaviour category wise.

	OS	App. wise usage	Total Mobile usage	Weekly / Monthly usage	Unlocks Counts	Notification
Your Hour	Android	Y	Y	N	Y	Y
Flipd	Android	N	Y	Y	Y	Y
Moment	iOS	N	Y	Y	N	N
Offtime	Android / iOS	Y	N	Y	N	Y
Phone Addiction Monitor	Android	Y	Y	Y	Y	Y

From the table we get to know that people who are addicted with smartphone spent maximum time on the phone per day and have more physical pain than others[8].

B. Survey existing applications

Some similar applications related with the development of 'Phone Addiction Monitor' are:

1. 'Your Hour' is an android app that will track your addiction category to remove phone addiction
2. 'Flipd' is also an android application that will lock your device for sometime after user crosses threshold criteria.
3. 'Moment' can be used in both android OS and iOS which shows daily usage in minutes, but not application wise.
4. 'Offtime' can also be used in both android os and iOS. It allow user to take actions such as turning off notifications and stop incoming SMSs.

Table 2 Comparison of Application

		Addicts	Copycats	Regulars	Moderates
Total = 182		28 (10.98%)	45 (25.73%)	70 (38.46%)	39 (16.48%)
Usage	Average time spent	5.24 hrs.	3.73 hrs.	1.9958 hrs.	1.76 hrs.
	Time range	2 - 20 hrs.	1 - 10 hrs.	5 min. - 10 hrs.	5 min. - 6 hrs.
Physical Pains	Neck	15%	12%	3%	1%
	Back	1%	1%	1%	1%
	Arm	9%	4%	1%	0%

Table 2 shows the comparisons of applications on the basis of supported OS, application wise usage, total mobile usage, weekly/monthly usage ,daily unlocks, notification.

C. Related Work

Thoniwut Rapeepisarn[9], developed iRelief which is designed for treatment of smartphone addiction by yoga tips.

I. Liaqat[10], developed a cell-phone activity monitoring device for human behavioral classification using hidden markov model.

Etuk Enefiok A[11], developed an android based application which will track employees while at work.

Ahmed M. Elmogy[12] , developed an android application that automatically send the current address location of the user to the server database.

III. SYSTEM ANALYSIS AND DESIGN

There are 6 modules in our application:

1. Log In - User has to login his account if he already have account.
2. Register - If user does not have account, user has to register. Otherwise user is not able to monitor or analyze application usage.
3. Monitoring- User can monitor how much time spent on each application and number of time he is unlocking his phone on that day. Monitoring will be shown graphically.
4. Analysis- User can anlyse the time spent on application on weekly and monthly basis to reduce the use of smartphone.
5. Report- Everyday repoprt will be sent on the parent application, so that parent can see what their child did on mobile.
6. Tracking- In emergency situation parents can track the child if child's internet is active, otherwise it will show location where his internet was last time active.

IV. RESULTS AND DISCUSSION

Fig. 1 Starting page

Fig .2 Sign In page

Fig. 1 shows the starting page of the application. On this page user has to choose whether he is child or parent. As there are different module for child and parent.

Fig. 2 shows the sign in page in which user has to enter valid email id and password to monitor and analyze usage of applications.

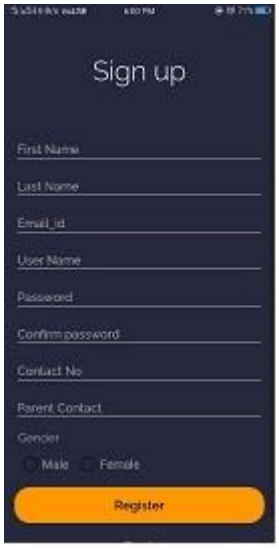

Fig. 3 Sign Up page

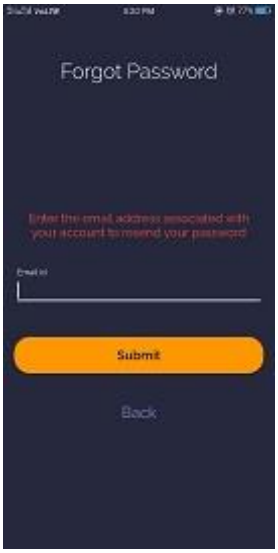

Fig.4 Forgot Password

Fig. 3 displays sign up page. If user does not have account. User must register his account by simply filling these information.

Fig. 4 shows forgot password page. If user forgot his password then he will got otp on his email id from which he can change his password

Fig. 5 Unlock count

Fig. 6 Daily Usage

Fig. 5 shows the first page of main activity .It shows no. of times user unlock his phone.

Fig.6 shows the daily usage of all the application totally and separately

Fig. 7 Weekly Usage

Fig. 8 Monthly Usage

Fig. 7 displays weekly usage of application. And Fig. 8 displays monthly usage of application.

V. IMPLEMENTATION

The Phone Addiction Monitor application has been developed using android studio with the use of java and XML for the frontend purpose and Php and MySQL is used for backend purpose. Android APIs is implemented to retrieve information about daily unlocks and for application usage.

VI. CONCLUSION

This paper depicts the design and implementation of an application called “Phone Addiction Monitoring” which is an android based application for smartphone users. User can analyse and monitor the application usage and reduce addiction level. It is hoped that by using these application user will receive the benefits in day to day life.

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