SRC: Smart Reminder Clock

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Abstract. Nowadays, some people facing the problem to wake up in the morning. This was result to absence of the classes, meetings, and even exams. The aim of this project is to develop an android application that can force the user to wake up. The method used in this application are pedometer and Short Message Service (SMS) function. This application need the user to take their smartphone and walk about 10 steps to disable it, when the alarm clock is activated. After that, when the alarm clock was rang, this alarm application has automatically send a message to the users’ friends or parents phone to wake them up.

1. Introduction

People always have needs to measure time. The first mechanical alarm clock was invented in 1787 by Levi Hutchins, of New Hampshire in United States. However, the alarm on his clock only rang at 4am because the alarm clock was invented only for him, in order to wake him for his job. An alarm clock is a clock that is designed to make a sound, or some other signal, at a designated time. The primary utility of alarm clock is to wake up people from their sleep. Alarms are used to perform tasks at scheduled times. Normally, most of the alarm clock use sound or vibration as method to wake the person up. To disable the alarm, a button or handle on the clock is designed as the trigger to do so. Most of the alarm clock was turn off automatically after few minutes upon activated.

The student of Anglia Ruskin University, Garry S. has developed an alarm clock that was combine existing traffic and weather web services with local temperature sensor reading to provide a suitable alarm time for the user [1]. Nowadays, smartphones have alarm clock built in, with many additional
features to let the users to turn off the alarm clock. Alarm clock has been implemented into all the mobile phones in these modern days. These alarm clocks have basic function that is similar to real alarm clock, which rang at a designated time. There are many similar alarm clock applications developed to enhance the user experience of turning off the alarm clock. There are many types of methods to disable an alarm clock, including answer a mathematic question correctly, play a mini game, or do some task. All of these methods were used to refresh the user’s mind after switching off the alarm. Taipei Municipal University of Education has proposed a new alarm clock application, which combined fuzzy systems with the social networking facility of Facebook as applied to the design of an alarm clock [3]. Other applications are [2] and [4], [6].

As everyone knows an alarm clock is a very important device that help people to wake up, which can be found in all homes. An alarm clock is used to wake someone up at the specific time to do some specific chore. Thus, many people need an alarm clock to wake them up on time. Today, the alarm clock is developed as an application for the smartphones or tablets. The existence of alarm clock application can be improved, which is how easy it is to disable the alarm clock when it is rang. Many people have problem in waking up early in the morning even after they set the alarm clock to a specific time. Some of the people are still unwilling to wake up even when they have set the alarm clock at the specific time the night before. Some of the people may also encounter the problem which is when the alarm is activated, they has switch it off without realising it. This project aims to develop an android alarm clock application to make sure users can wake up on time. This project has enhanced the capability of the alarm clock by adding new feature such as the pedometer system, so that it has not easy for the user to turn it off. The goal of this project was to develop an android Smart Reminder Clock (SRC) application for the target user. The project is to design and develop an alarm clock that allows the user to do a specific task before switching it off. Also, this project aim to enhance the capability of alarm clock by integrating it with Short Message Service (SMS) and pedometer.

The proposed application has several enhanced capabilities. Firstly, user can take the phone and walk about 10 steps, or just touch the button to switch off the alarm clock. After that, user can choose an advanced setting, which is to automatically send a message to their friends or parents’ phone when the alarm clock is rang to ask them to wake the user up. This setting is designed for users who have important events on next day and to make sure they can wake up on time. In this situation, user need to insert the receiver’s phone number and the content of message. These features can be set by the user in the system setting, so that they can set their own requirement based on their needs.

2. Implementation of SRC

The Smart Reminder Clock application has made the alpha and beta testing. The result was showed and explained. This application has constructed in Java Programming Language with Android Studio 2.0. User can pick a time and choose the days for the activation of the alarm clock. User also can pick a song as the ringtone of the alarm clock. If the user pick the song with “Random Song” topic, the alarm was rang with a random song. Once the user click the “SET ALARM” button, the alarm is set as the time picked by the user. Figure 1 and 2 shows the interface when the alarm clock is set. User can also select to switch on or off the Send the Message, this function was make the device send a SMS to the receiver phone when the alarm was activated.
The phone was showed a notification to notify the user that the alarm has activated. User can click on the notification to enter the alarm clock. After that, the user can click the UNSET ALARM button to turn off the alarm clock. The SRC was allowed user set the receivers to receive the message that was send automatically from the phone when the alarm clock was activated. The user can set the phone number and the content of the message. The number of receiver can be 1 or 2 (Figure 3, 4, 5, 6).
Figure 3. The interface of Register Phone Number.

Figure 4. The interface of the data that user has key in and want to store in the phone.

Figure 5. The interface of the data has successful store in the phone.
3. SRC User Performance Testing

The user acceptance testing was carried out by given the questionnaire to the user. The users of this testing are from students and lecturers. Figure 7 showed that all of the users agree with the Walk It Up Alarm Clock make them wake up on time and satisfy with the Short Message Service (SMS) function provided in this application. Figure 8 showed the number of users agree that this application was easy to use, 20 of users agree with very easy, 7 users agree with easy, 2 of user agree with moderate, 1 user agree with difficult and none of the user agree with very difficult. From this testing, it showed that SRC is successfully developed and can be used widely.
4. Discussion and Conclusion

In future, SRC application can be enhance several tasks such as ability to disable the alarm clock unlike the current method. This application also will provide multiple alarms in order to let the user in setting more than one alarm clock. In conclusion, Smart Reminder Clock (SRC) application has been successes deployed by achieving the objectives outline. This application was built to help the user that has an emergency task to do in the coming day and need to wake up on time. With this application, the user will wake up on time.

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