Timer - Mobile Application for Android OS

Kiril Prihodko, Vladimir Sayenko
Kharkov National University of Radioelectronics (KhNURE)
Kharkiv, Ukraine
kyrylo68@gmail.com, vladimir.sayenko@nure.ua

***Abstract*—An Android based application is proposed. This is Timer. It maintains standard time counting functions. It could help to develop special applications and could be considered as a software designing approach.**

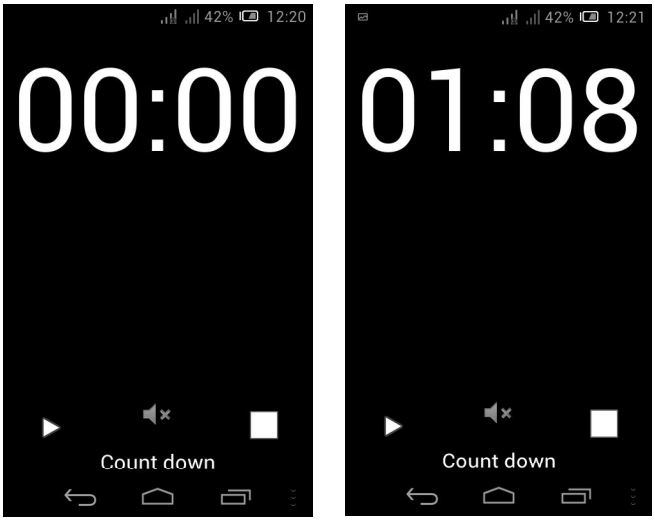
I. INTRODUCTION

The application Timer is one of most popular among any mobile applications. It isn't a typical in the OS Android so there are a lot of such modifications. The differences concern interface and any functions. It is useful for any users but it is useful also as basic component for a many special applications. The proposed application is one of such implementation (see Fig 1a, 1b). The actual of such solutions is that this program could be a basic component for a lot of special counting systems and be integrated in them.

II. MAIN PART

The proposed application implements set of operations: start, pause, stop, sound on\off, set countdown time, countdown function, automatic landscape orientation.

The application is a cross-platform and uses the modern concept of program design [1, 2]. It is developed in the Eclips environment with plagins of Android Development Tools for Eclipse. It uses multithreading object-oriented approach. The basic components are ControlPanel, MusicCounting and Time classes (see Fig. 2).



a) b)

Fig.1. Screen forms Start Timer (a) and Stop Timer (b)

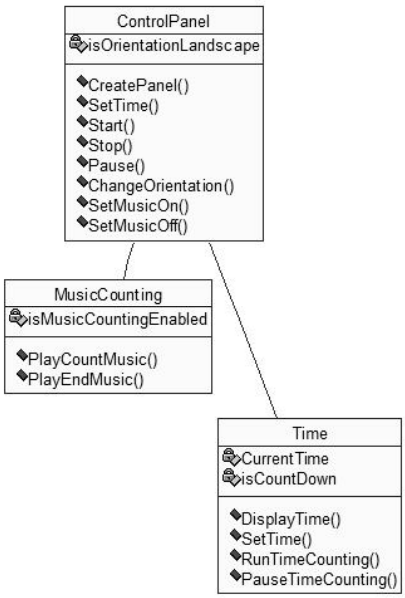


Fig. 2. Schema of classes

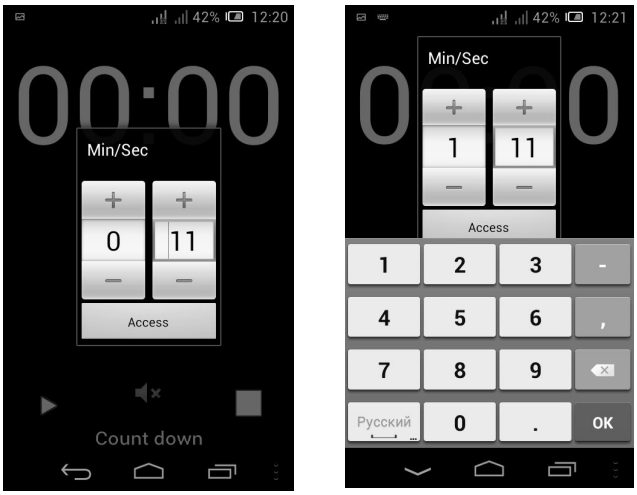
The ControlPanel class and CreatePanel function maintain graphical interface and interface components (see Fig.1a, 1b). This function maintains a landscape function by setting a Boolean variable isOrientationLandscape. «Start», «Stop» and «Pause» are functions that maintain operations of counting and countdown time.

In different phases varied set of functions of operations are used as shown in the Table I.

TABLE I. USABILITY OF FUNCTIONS

Phase of operation	Functions					
	Start	Pause	Stop	On\off sounds	Countdown	Landscape
Start of application	+	—	—	+	+	+
Start of time counter	—	+	+	+	+	—
Start of countdown	—	+	+	+	+	—
Pause	—	+	+	+	+	+
Stop	+	—	—	+	+	+

The Start function starts counting the seconds and generates sound per each second. The Pause function pauses operation and maintains conditions to restart. The Stop is a function to stops all operations and reload values for all variables. The “Set count down” function helps to set the time by use special interface and symbols “+”, “-”(see Fig. 3a, 3b).



a) b)

Fig.3. Screen forms Countdown without keyboards (a) and Countdown with keyboards (b)

The SetTime function sets the time for a countdown operation. After finishing countdown the application generate beep. SetMusicOn and SetMusicOff are functions that set on\off the beep sound. The MusicCounting class maintains sounds for countdown operations and could be generated per each a second. This function could be used to develop a metronome

The Time class storages information about current time at <msec> format and maintains pause and restart at the fixed msec point

III. Analysis of the Suggested Solutions

The proposed application can also be used as a separate application, and as a module for a different application. In spite of the library classes in the JAVA programming language offer a specific set of functions, the binding of them is difficult. Such functions with trivial tasks as start, pause, and stop the stopwatch, and a countdown function are not available and have to be constructed. They should use such classes as Chronometer, CountDownTimer, MediaPlayer, SystemClock, Thread and many others.

The example of that usage could be an application to control the time of cooking. This app uses a countdown function with different parameters, which can be pre-stored for each of the dishes.

Another example would be an application to control the run-time of any kind of sports competitions for different participants. In fact, it is several counter down applications at the same time.

Another interesting application is the usage of multiple countdown timers. For example, it is an application to control overlapping of the day events (see Fig. 4).

Fig. 4. several counter down applications

The following application is a metronome. An application, that set the pace, is often used in medicine, physical therapy and sports. This is a countdown timer and it reproduces a short loud sound at predetermined time intervals. These intervals usually are not more than a few seconds. In some cases, the number of metronome ticks could be unlimited. The screen displays the number of remaining and/or passed metronome ticks.

IV. Conclusion

The simple, convenient, application for a Android OS is proposed. It’s a Timer. It’s published at Google Play Market. This application forms a first release as a basic component to future programs. It could help to develop special applications as metronome, load racing counter, any special counters. It’s a tool on future programming to develop personal software IT environment.

References

[1] C.E.Hashimi, *Software Development for Android.* Kiev: Ranok, 2014.

[2] News of Mobile Technology and Software, Web: http://www.macdigger.ru/iphone-ipod/android-i-ios-zaxvatili-964-rynka-smartfonov-dolya-windows-phone-padaet.html.