

Development of Task Scheduler for Platforms Windows 8 UI and iOS.

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Abstract This article describes how to create a task scheduler for Windows 8 UI and iOS, which would allow us to send reports on progress, break tasks into subtasks and follow the percentage of the task.

Keywords Scheduler, Windows 8 UI, iOS.

1. Introduction

Software engineering allow to solve a lot of specific tasks like automated control system, mathematic calculations, working with data arrays, implementation of corporate communication and collaboration, personal planning tools and many others.

Here we'll be talking about personal planning tools that are currently presented at mobile platforms.

Currently there are few products with quote similar functionality are presented, such as:

- Wunderlist HD[1], Things[2] and Clear[3] for *iOS*;
- Zero[4], Clearer[5] for *Windows Phone*;
- Remember the Milk[6] for *Android*; and many others.

All the above products provide users with a basic personal

task management. At the same time they don't have an advanced management features like task partitioning, analysis, reporting and sending out comprehensive reports to a direct manager. Therefore they don't suit well for a small business users, that does need such a features but cannot afford more powerful but excess professional corporate products, such as Microsoft Project, Lotus Notes etc.

The mission of developing this product is to provide a user with a simple but quite powerful mobile application that allows user to:

- create and order user's tasks;
- task prioritization;
- task portioning;
- managing delayed tasks;
- generating of comprehensive reports based on task history;
- automatic reporting manager when the task gets complete by email and/or sms.

The overall task management workflow realized in application is presented in Fig. 1.

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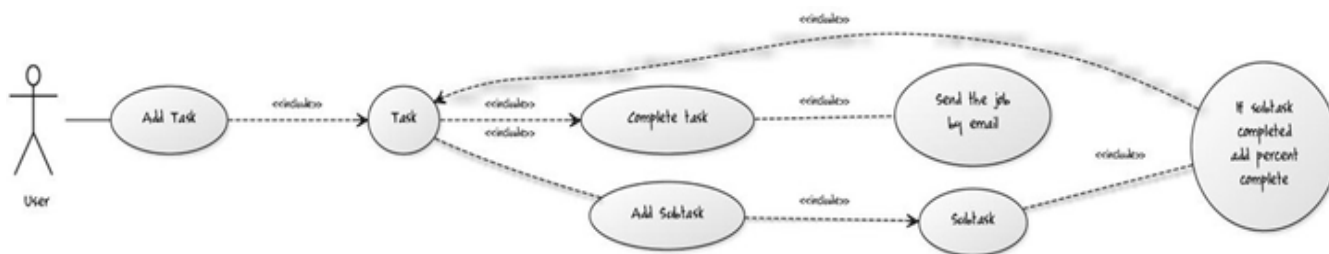


Figure 1. Activity Diagram

2. Integration Development Environment, Toolkit

For developing an application for Microsoft Windows 8 we used *Visual Studio 2012 IDE*[7] with *HTML5* and *JavaScript* language.

For *iOS* application development we chose an *XCode IDE*[8] and *Objective-C* programming language.

3. Windows 8 UI Realization

Choosing *HTML5* + *JavaScript* as a language development due to ease of writing code, meet security requirements (application process isolation) and it's functional sufficiency.

Also implement a feature code can easily be extended to more components written with high-level languages such as *C#*, *VB* and *C++*.

The application is made in a single design with the operating system *Windows 8* and developed in compliance with the markup standards of the location of data blocks and controls in accordance with the OS developer recommendations

(<http://msdn.microsoft.com/en-us/library/windows/apps/hh779072.aspx>).

The application was named *TaskBoard*.

When you run the application, the user screen displays *In Progress* screen with its current tasks. The progress of each task can be quickly adjusted with the circular movement of the finger on the element of the problem in a clockwise direction. For processing of gesture a *jQuery Knob*[9] plugin was used.

If a task consists of several subtasks, the percentage of the parent task calculated as the sum of the percentage of completion of subtasks, and determined by the formula:

$$x = 100 / n$$

where x - the percentage of completion of the task; n - the number of subtasks.

In the bottom of *In Progress* screen there is field for entering the name of the new task and *Add Task* button. After entering the name into the field and clicking on the *Add task* button (Fig. 2), a task is created with a *Not Started* status and the user is redirected to the task edit form, where he can put the detailed description of the problem, set the task priority (Low, Normal or High) and specify its duration. After clicking *Save* button all the entries are added to the task and the user is redirected to the *Not Started* screen, where are displayed all the tasks that waiting to run with its deadlines, including the newly created task.

Clicking on the desired task the user is notified about task start, and after the user confirms it he is redirected to the *In Progress* screen and the task appears in the list.

By clicking on any of the tasks user moves to the task edit screen, where he can edit task title, change it's description, add the information on it's progress, or divide it to multiple sub-tasks.

Also user can send the status of the task and its progress details by selecting a contact from the address book.

The application will generate task report, generate a message and send it to the address listed in the contact by E-mail or SMS.

It is also possible to mark a task as completed. In this case, the task report will be automatically generated and sent to the contact chosen as a manager in the application settings.

After you click *Save* the user returns to the screen from which he invoked task editing dialog.

Navigation between screens tasks implemented by shifting the screen to the left or right.

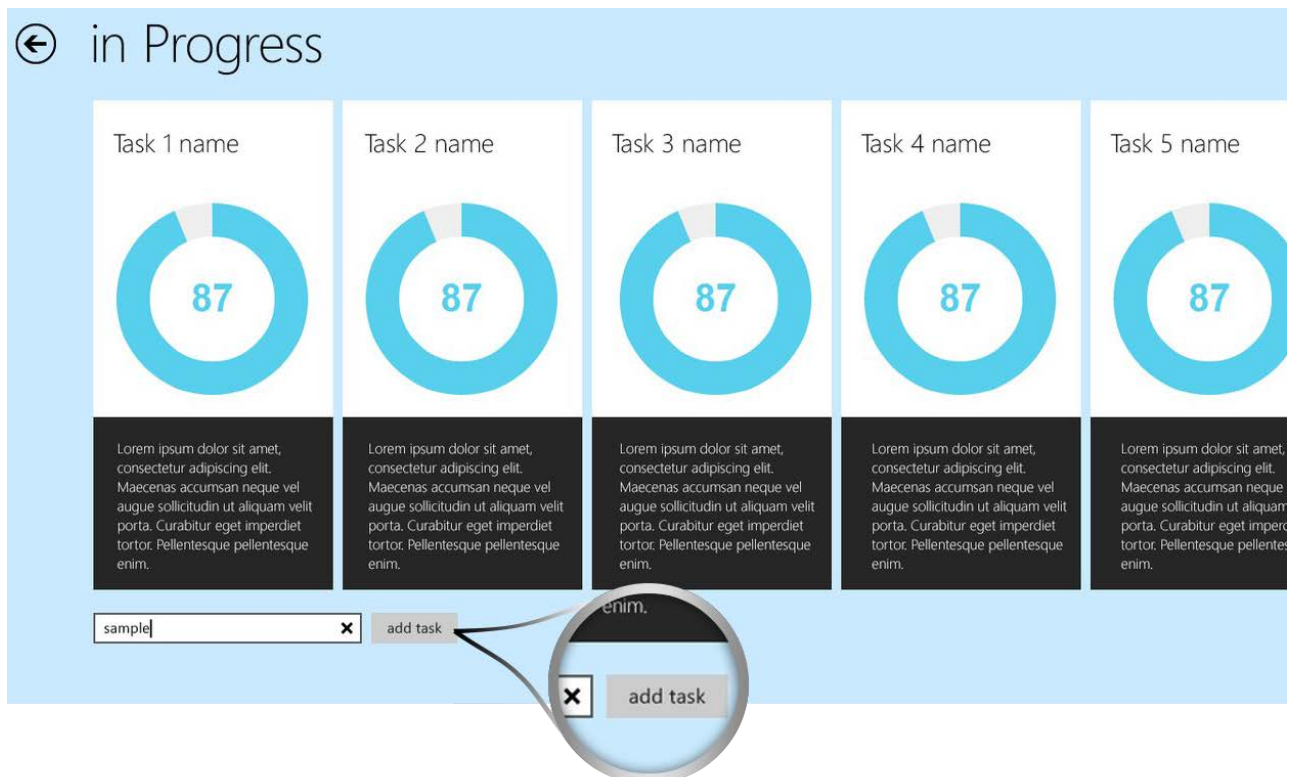


Figure 2. Main program interface and "Add task" button

4. Apple iOS Realization

After studying modern market of mobile technology, it was concluded that the largest share of the market occupied with tablets and smartphones based on Apple *iOS*: iPad, iPhone and iPod Touch. Drawing attention to this fact, it was decided to create a version of the product for the platform.

TaskBoard product for the *iOS* platform is built on an analog version of *Windows 8 UI*, although the concept is a little different.

In this application, it is also possible to schedule two types of tasks: a common task and the task with subtasks. In both cases, the cell is created with the headline and the slider that user to pull as you complete tasks. The main difference between these two states is that in the second application automatically divides the slider on the interest. This obliges the user to strictly follow a "markup." That is, by not performing a subtask number 2, you cannot drag the slider to the mark at 75%.

The application contains three working screen: "*Objectives*", "*Calendar*" and "*Settings*". Switching between them is carried out by means of the bottom navigation bar (Fig. 3).



Figure 3. Main window of TaskBoard for iOS

When you create a new task it's required to fill three text fields: "*Abbreviation*", "*Full task name*" and "*Task List*" (Fig. 4). Next, there is a switch on "*Steps*", which lets you specify the number of steps and automatically split the slider on the progress.



Figure 4. Add new task on board

Next to the abbreviation of each task there is a button "*Extension*", by pressing on which it is possible to edit or delete the selected task (Fig. 5).

In the case of 100% completion of the task, you have the opportunity to send an email with a small report on the work that was done or to share it someone via social networks (Fig. 6).

The main difference between the two versions *TaskBoard* consists not only in design but also in the concept of the project. In terms of design, while the platform is *Windows 8 UI* strive for minimalism, the *iOS* platform welcomes more colorful application that makes the interface more friendly and interesting.

TaskBoard for *iOS* includes slightly more features than the implementation on *Windows 8 UI*.

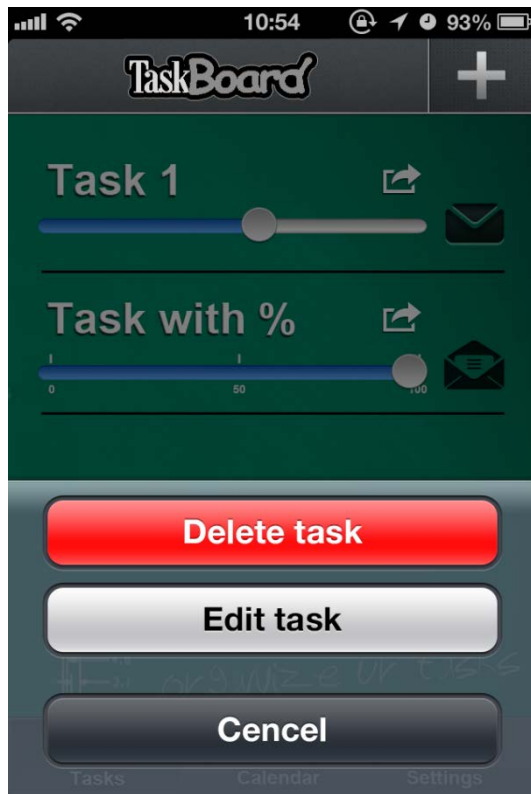


Figure 5. Editing the task



Figure 6. Sharing result

5. Conclusions

Therefore, our application has been created for two of three latest and actual mobile platforms today - Windows 8 UI and iOS, and solves all the above set and not the solution.

In the future, the goals for our development are:

1) the creation of a web service in a cloud which will allow users to synchronize all tasks and manage it from many devices.

2) the creation of application for Android and Windows Phone platforms

3) the creation of an application for desktops and laptops running Windows 7 and Mac OS X.

The novelty and simplicity of the idea ensure the successful development and relevance of the project in the future.

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