

Context-Awareness Feature in Octotask Task Manager

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Abstract

Octotask is GTD-style task collector and manager, which is developed for Symbian and Harmattan platforms. GTD here stands for “Getting Things Done” — the first class method of self management, proposed by David Allen [1].

One of the important things of the method is the concept of a context. A context is some place or special conditions, required to get the task done. Users can see the tasks they can perform in concrete situation by choosing the appropriate context in Octotask. Thought being useful, this operation becomes a routine, which user has to perform manually day by day.

In this abstract we describe automatic context switching based on the predefined rule sets in Octotask. Such a feature should reduce the amount of actions required to be performed on a regular basis. The typical use case for this feature is the detection of contexts, which user enters frequently. For example, a person spends most of ones time at work and at home, creates “Home” and “Office” contexts, and defines switching rules. Octotask, configured that way, eliminates the need to select contexts each time manually, doing it automatically when the user comes to work or returns home. This feature saves the person from everyday routine actions.

Several independent switching rules can be associated with the same context. For example, “Home” context can be detected by the building’s location or by SSID of home’s Wi-Fi network.

Context activator is a condition or a pair of events which specify when the context activates and when it deactivates. To activate the context means to show bound tasks to the user, to deactivate — means to hide them from user, if they are shown.

Context activators in Octotask can be divided into three groups:

- Geographical-position-based activators. Such activators associate the context with the concrete geographical location and some area around it. The context activates when a mobile device enters the defined area and deactivates when one leaves the area. An area can be detected by satellite-based positioning methods such as GPS, by geographical position calculated using coordinates and distance from cell network base stations and towers, by cell identifiers of base stations and towers.
- Wireless-network-based activators. Such activators associate the context with a wireless network (Wi-Fi, Bluetooth). Context activates when device finds or connects to the previously defined wireless network; deactivates when device lose or disconnects from the wireless network. The user specifies whether the connection to the some network/device or just a notion of a network presence is required.
- Event-based activators. The context activates when some predefined event happens: When a user receives a call or a message from the contact or a member of the contact group; when mobile device detects the NFC tag. Context is deactivated manually when the user decides that he or she is no longer in the context or automatically by the specified event.

There could be context overlapping problem, when two or more contexts are active at the same time. For example, the user is currently at his home, therefore “Home” context is active, and he or she receives an incoming call from the boss, which activates “Work” context. Such a problem can also appear because of inaccuracy of positioning systems for contexts bound to areas located near each other.

To resolve this problem the main screen in Octotask organized as following, it displays a list of all the tasks, that the user has, grouped by contexts. The order of the contexts in the screen is initially defined by the user. When some context becomes active, it is moved to the top of the list and context name is highlighted. Context deactivation provokes it's highlight to be removed and context is moved to the its initial location. Such approach allows to display several active contexts at the same time.

For example, there is a student, who studies at the university and works in a department of the university. This student created two contexts: "Studies" defined by the location of the university and "Work" defined by the department's Wi-Fi network hotspot. When the student comes to the university, the "Studies" context with bound tasks moves to the top of the list on the main screen. When the student's mobile phone connects to the department's Wi-Fi network, the "Work" context is moved to the top of the list. The "Studies" context remains active, and placed after the "Work" context in the list, because student is still at the university and he may need to resolve some study tasks. When the student disconnects from the department's Wi-Fi network, it means that he or she left work. The "Work" context becomes inactive, and it is moved to it's initial location, giving it's top place in the list to "Studies" context, which is still active due to student's being at the university.

Octotask supplied with the context-awareness functionality can be used beyond GTD methodology, for example as the smart shopping list. In this case planned purchases can be added to application as tasks, which belong to one special context, which represents shops and bound with them. When the user enters some shop, Octotask recognizes it, for example by it's location, and shows shopping list to the user.

Context-awareness feature, along with synchronization with multiple external task systems [2], is the main feature of Octotask application. Octotask is the open source application, it is intended for Symbian and Harmattan platforms. You can get it's public version from Nokia Store: <http://store.nokia.com/content/174885>. The released version provides only a basic functionality and does not include context-awareness and synchronization features. These features are only included in the development version of Octotask. The sources of the development version can be downloaded from Octotask homepage at <https://yar.fruct.org/projects/octotask>.

Index Terms: Task management, Context, Prediction.

REFERENCES

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- [2] Denis Laure, Yury Krupin, Alexander Abdulloev, Ilya Paramonov, Andrey Vasilev. "Synchronization with External Task Systems in Octotask Application," in *Proceedings of the 10th Conference of Open Innovations Association FRUCT*, 2011, pp. 76-82.