

APPLICATION OF GENERAL TREE STRUCTURE FOR READILY MODIFIABLE UI MENU STRUCTURE

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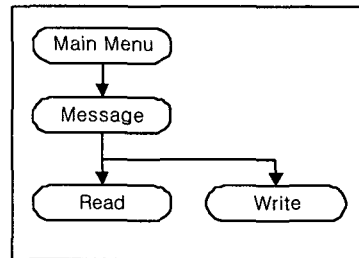
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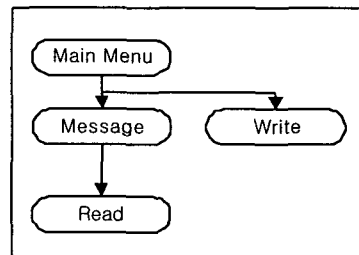
ABSTRACT

In this paper, considerations on the algorithm that makes the use of general tree structure to enable readily modifiable UI menu structure in efficient way in terms of time and resource (available memory) of CPUs are described. First, it describes the importance of UI (User Interface) and why UI menu structure must be readily modifiable. Following chapter introduces a few data structure as well as general tree type and why general tree is used to meet the goal. Then, source code written in C illustrates how the general tree is used to be able to modify the UI menu structure with some of examples. The primary goal of the algorithm is to help end-users and programmers to be able to modify the UI menu structure. For the end-users, the algorithm lets CPUs finish the task (modifying UI menu structure) instantaneously so that the user is not annoyed with waiting time. For the algorithm is very simple, programmers can use the algorithm easily.

The device has a menu called *Message* under *Main Menu*. Then, under *Message* menu, the user can select either to initiate a message (or to write a message) by selecting *Write* menu, or to read received messages by selecting *Read* menu. <Figure 1.1> illustrates this simple menu structure. However, some of users may not like this structure. They use the device more often to write messages; therefore, they want to have *Write* menu right under *Main Menu*, not under *Message* menu. Refer to <Figure 1.2> for this menu structure. A type menu structure, <Figure 1.1>, is preferable for those who like to have organized menu structure by category; whereas B type is better for those who use the devices to write messages repeatedly.



<Figure 1.1> Menu Structure Type A



<Figure 1.2> Menu Structure Type B

1. Introduction

For the last couple of decades, enormous amount of hand-held devices have been introduced in market. Certainly, every single hand-held device has UI to be able to communicate or interact with a human being; and, UI is the only way to do so. Therefore, it will not be harm at all to exaggerate the importance of UI. However, it is almost end-users task to get familiar with UI menu structure of the device. Of course, most of developers survey (or spend time) to meet the taste of majority of potential customers. Nevertheless, it is just impossible to satisfy every single customer with UI menu structure. It will be easier to understand the necessity of readily modifiable UI menu structure with some of examples. A user has a two-way messaging device that can send or receive message over the air.

Moreover, one might think that there is no point to have *Message* menu for B type menu structure; thus, the device should remove *Message* menu and move *Read* menu right under *Main Menu*. Examples shown above are the tip of an iceberg that describes end-users' wishes with UI structures that their hand-held devices have. As a result, the devices must be intelligent enough to be