ABSTRACT

In this paper, a Campus Information Providing System (CIPS) for cellular phones is proposed. By using this system, the search time to find the necessary information in the campus is reduced. Users can access the system using the cellular phone terminal and by clicking the links or by inserting a keyword in the form from which they can easily get the campus information. The system has four agents that deal with Web information required by users, Net News, the student’s login state, campus navigation, and the filtering of the received campus information for cellular phone terminal. Therefore, the proposed system can provide different media information to a cellular phone. By using the proposed system, the users are able to get the information anywhere and anytime. The system performance was evaluated using a questionnaire. From the questionnaire results, we found that the system was able to show the required information. However, the system operation should be improved and the information content should be shown better.

Keywords: agent; cellular phone; mobile communication; campus information

INTRODUCTION

In Japan, there are more than 67 million people using cellular phones, and the number of browser phones is over 47 million, that can access the Internet and thus get various kinds of information (ZDNet, 2001). Now, by using a cellular phone, it is possible to get various services such as everyday life information, money exchange rates, databases, games, and music distribution. Recently, NTT DoCoMo (2003) started a new service called IMT-2000, which is an international standard of the mobile communication systems and can be used all over the world. Therefore, more and more information can be handled using the cellular phone.

Now, many universities have their own campus information on their homepages and the students, by using homepage, e-mail, Net News, and campus bulletin board, can get a lot of information.
However, logging in a terminal, starting to work with a personal computer (PC), or going to see a bulletin board takes a lot of time. Also, getting information by starting a browser and typing a command such as “mnews” will take time because two or more systems would be used. Therefore, getting the information by using only one system anywhere and anytime will decrease the number of operations and will save more time for users.

In order to solve these problems, we propose a Campus Information Providing System (CIPS). This system supports a user who acquires the campus information. By using the cellular phone, the user is able to get the information anywhere and anytime. The proposed system is implemented by the Common Gateway Interface (CGI) and consists of four agents (Hattori, 1998). The Web Information Agent (WIA) gets the information on Web databases, such as a timetable, examination schedule and syllabus information. The Net News Agent (NNA) gets the information on Net News, such as newsgroups of the university. The Personal Information Agent (PIA) can search the information of a vacant terminal or the users who login. The Navigation Agent (NA) navigates a room in the campus. Using these agents, the proposed system can provide different media information for the cellular phone. When a user wants to get the information using the proposed system, the system gets the information and filters it in order to optimize the information for the cellular phone. To evaluate the performance of the proposed system, the system was used by ten cellular phone users, and by using a questionnaire we asked them some questions such as: How was the information search by the proposed system compared with other information searching systems? How was the system operation? What merits and demerits does the proposed system have?

The paper is organized as follows. First, we introduce the proposed system. Then the performance evaluation is discussed. Finally, some conclusions are given.

**PROPOSED SYSTEM**

**System Outline**

The proposed system has the following features:

- It is possible to check the campus information anytime and anywhere.
- One system realizes various services (Web, news, students’ login state, vacant terminal information in the computer rooms and campus navigation).
- The information retrieval and the information filtering are done in real time. If the information is updated, a new information can be retrieved automatically.

*Figure 1: System Structure*
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