

BOOK'S MARKING

The System for Finding the Books based on Location Information

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Abstract: The Availability and use of digital books has greatly increased in recent years, and eBook technologies now allow books to be downloaded and read almost anywhere. While method of reading and experiencing books are changing, method of finding books are relatively unchanged. Most people select books based on their impression of the front cover seen in the library or bookstore, or on reviews found on the internet. In our research we have attempted to enrich the process of finding and experiencing books by developing the "Book's Marking" system where books are linked to places. In this system, users ("editors" or "annotators") put information about books on a shared map. In this way information about locations can be linked to the contents of books. For example, the place where the story is set, the area where the author was born, and the experiences of other readers can all be linked together. Once books are linked to places other readers can then find the books that refer to, or are associated with, places that they are interested in, or are visiting.

1 INTRODUCTION

During recent years, various kinds of devices for reading digital books have appeared, and the numbers of people using those devices has increased rapidly. Schilit, Price, Golovchinsky, Tanaka and Marshall(1999) showed that digital readers occupy an important space between print and online media, and they allow large number of books to be carried around and read anywhere. Digital books can also enhance text in a variety of ways, with hypermedia links (e.g., to summary information about characters in the books, or to places mentioned), and with new types of embedded search and annotation within the text. This creates the opportunity for new styles of reading. However, while the way to read books has been changing, the way to find books has yet to change. People typically select books based on traditional methods such as looking at book covers in stores or reading reviews in newspapers and on the internets. In this method, mistakes can be made as people have to decide whether or not to get the book based on limited information.

In addition to offering new ways to search for

books, online media also offer the possibility to embed books more effectively within social and geographical contexts. People may travel to experience the worlds of a books characters or author to experience the real atmosphere of places they had previously only imagined. This style is called 'Contents tourism'(Okamoto, 2010), (Shimizu and Kobayashi, 2006), (Masubuchi, 2010) In our research we have sought to develop augmented interactions with electronic books that will facilitate search for books and contents tourism.

2 BOOK'S MARKING

People differ in terms of the places that have special meaning for them. For example, some people are impressed by beautiful scenery or historical legacy when they travel, while others are attracted to familiar locations and paths near their homes (Sonoda, 2002). Book's Marking enables people to search for books that are related to places in diverse ways. The system enables users to find and

experience books that are of interest to them based not only on existing information such as pictures or reviews, but also on locations that are associated with books in some way.

3 DESIGN OF THE SYSTEM

Book's Marking is comprised of two kinds of Web Application involving either desktop computers or mobile devices (Figure.1). Desktop computer users can attach information about books to places on a shared map and browse the locations that have been tagged with books by other users. The connection between the books and the place is based on the subjective view of the users who make the tags. When assigning tasks using the system, users also comment on the tag, providing the reason why they linked the book to each place. Other users can browse the book tags assigned to locations and make further comments in association with the tag.

Users with mobile devices can get access to book tags at the current location using a GPS equipped in device. As people move around they can see which books are linked to nearby locations.

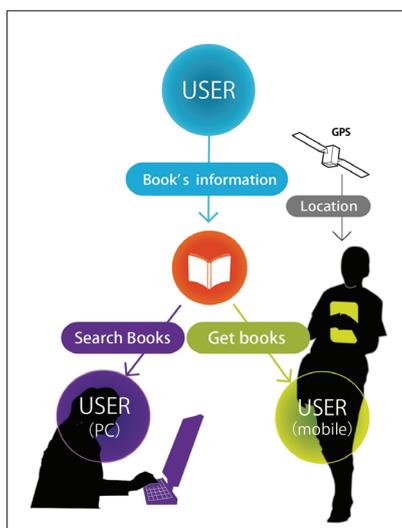


Figure 1: System configuration diagram.

4 IMPLEMENTATION

The main system is built as a Web application which works on the Google App Engine. The data about books is referred from the Amazon Product Advertising API, and the map data is collected from Google Maps API. The system saves information

about books in the database with the GeoHash-code converted from the latitude and longitude of the place where the book information was tagged. This information can then be output on the shared map or mobile device as required.

5 USE CASE

In order to put the information about books on the map, at first have to move to the web page named "Marking" on Book's Marking (Figure.2), and search for the book data that they want by entering keywords. Then select some book data and move to the next page. On that page, users set the place to put the information. They then enter the comments and category of the books. After this procedure, the information and comments appears as icons on the map, and other users can browse them by clicking icons (figure.3).

In the case of using the system from a mobile device, users start up the application at a place they are interested in. If book information has already been stored at or near that place, users can get access to that information based on their GPS location. For example, if a user put the information about "The Sun Also Rises" (written by Ernest Hemingway) at Pamplona (Spain), with the comment "Here, Pamplona provided the setting for Hemingway!!" as a reason for the tag. Later, another user who visited Pamplona and was intrigued by the place, could find the associated information about "The Sun Also Rises" there using Book's Marking (figure.4).

In addition, Book's Marking has a function to search for a place by consulting keywords such as the title of the books, the name of author, and the category of books. For example, a user who likes "The Sun Also Rises" can get information about locations that the book is linked to by searching with keywords from the book title.

6 DISCUSSIONS

Book's Marking is now on release on a trial basis. To get some initial user feedback, we made a demo of Book's Marking at an exhibition on learning applications that was held in Tokyo in 2010. In that exhibition, we received a variety of opinions, with some visitors using Book's Marking after that event. Most books which were put on the map are novels, and they are normally put on a location either connected to the story or to a place that is associated with the author (e.g., place of birth or where the

author lived while writing books). In addition, we have observed a trend for different types of location to be associated with different types of book. For example, in Shinjuku City, a major hub within Tokyo, Japan, a lot of dark stories about gangland bloodletting and lives of the homeless were tagged. On the other hand, In Jiyugaoka, a residential community in Tokyo, most stories tended to be happier, involving topics such as stories about animals or discussion of cooking. Based on this finding, the system will be adapted to allow better visualization of data such as categories, authors, the date of publication, etc. on maps. We are currently designing a set of icons that can meet this requirement.



Figure 2: Top page of Book's Marking.



Figure 3: Example of GUI.

7 CONCLUSIONS

Initial feedback from users indicates that Book's

Marking functionality, linking books to places, is useful. In addition, to the usages of the system discussed in this paper, other applications of the system may include using the system in tourism, regional promotion, and social science. We believe that tagging locations with books is a useful activity that may lead to a variety of innovative applications as the number of book tags and tagged locations increases.

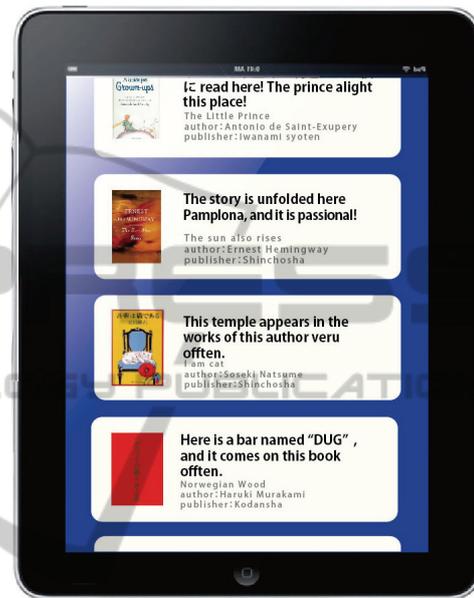


Figure 4: Example of GUI on mobile terminal.

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