

# Development of an Education-Oriented E-mail Application "Seemit" and its Utilization in a Information Literacy Course

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**Abstract:** We have developed a simple E-mail application named Seemit which is designed for being used in information literacy courses. It has necessary and sufficient functions for an E-mail application, and it has been developed for the purpose of learning basic operations and mechanisms of E-mail transfer easily. It has been developed in HSP scripting language, which can create compact Windows native binaries. The E-mail application is indented to help users to avoid common mistakes in typing E-mail addresses and to understand the mechanisms of E-mail transfer over the net. It is a small set of binaries usable in removable media such as a floppy disk without installation procedures and has been released on the Web as a free software. It is equipped with the function to set automatically the configuration of user's SMTP/POP3 servers and E-mail address, etc. The process of transferring E-mail via SMTP and POP3 can be demonstrated step by step showing actual messages passed from the client to a server and vice versa. We have utilized Seemit in a information literacy course which holds all the freshmen of our university, about 1800 students. Investigation for students and teachers' impressions of how useful and effective in learning E-mail basic functions and mechanisms show good results.

## I. INTRODUCTION

Nowadays university students are socially required to master basics of information technology regardless of the faculty they belong to. Since 2002, Kumamoto University has offered courses named "Basic Course of Information Technologies A" and "Basic Course of Information Technologies B" both of which all the 1800 freshmen of the university are required to take. E-mail operation and E-mail delivery mechanisms have become indispensable items in these courses as E-mail is the one of the most important and common media in the Internet.

Several of the authors, as teaching staff of these courses, have used existing E-mail applications and felt existing softwares were not always suitable for the purpose of teaching

beginners unfamiliar with PCs. We have developed E-mail application[1-2] designed to be beginner-proof and instructive.

## II. SPECIFIC FEATURES

### A. Characteristics and specifications of Seemit

The initial screen of Seemit[3] which we developed is shown in Fig. 1.

The feature and specification of Seemit are summarized as follows:

- It has necessary and sufficient functions for an E-mail application. It aims at learning of the basic operation and principle of E-mails.
- We developed using the free interpreter language HSP[4]. Building the small executable file for Windows is also possible.
- Library for the E-mail sending and reception API BSMTP.DLL[5] via extended plug-in BsmtpHsp.hpi[6] are used.
- In order to avoid for the user to forget the E-mail password, the function to save a password on a disk was intentionally eliminated.
- Fundamental operations can be done on one window, and required functions can be called only by clicking the icon and menu bar.
- The created binary file is about 600KB, even if it includes DLLs, such as BSMTP.DLL, and it can be used sufficiently practical only by copying all to one FD or other removable medias.

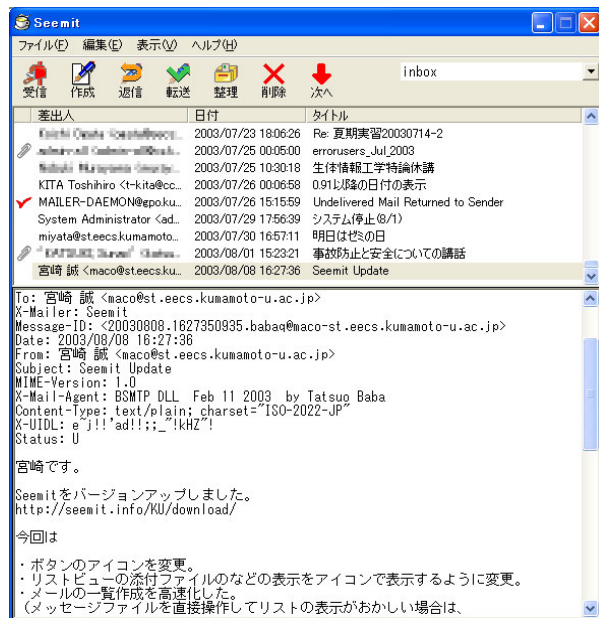


Fig. 1. Initial window of Seemit (Mail view window).

### B. Expansion display window

A fixed-width large font is used for the part where beginners tend to make a typing mistakes, such as the E-mail address field. And the input box is indicated enlarged as shown in Fig. 2.

### C. Demonstration function of SMTP or POP session

It has the demonstration function of SMTP or POP which displays the exchange between the server and the client in an SMTP or POP session so that the mechanisms of E-mail

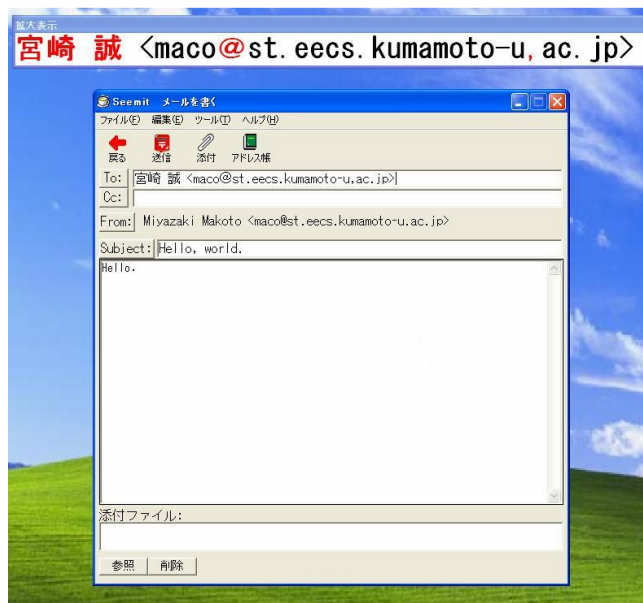


Fig. 2. The input box is indicated by expansion.

transmission may be known as shown in Fig. 3. In SMTP demonstration mode, the mail header and the text that are actually transmitted can be edited freely, and the E-mail which misrepresented the From header can actually be transmitted. However the destination E-mail address in the SMTP demonstration mode is fixed to the user him/herself.

### D. Glossary window for header information

All the parts of the E-mail header are displayed on the same window as the body text, and a window explaining what various header items mean. Clicking each line of the header displays explanation of the corresponding header item as shown in Fig. 4.

### E. Released as freeware

Seemit is a free software. Anyone can use it free of charge. And the source code is offered free of charge on the request and user can customize it freely.

### F. Automatic setting function

It has the automatic setting function with which automatic setup of the mail server, user's mail address, etc. can be performed. Moreover, the signature of E-mail and the address book are also automatically created. The automatic setup transmits the user ID of Windows logon to an HTTP server, and the server returns setting information to Seemit.



Fig. 3. Illustration window of SMTP session

### G. Error mail attention

For the error mail with which a beginner tends to be puzzled, as shown in Fig. 5, the body text is displayed in red.

### H. Computer virus refusal function

When the user is going to save the attached file with the extension often used by computer virus, it is designed to warn the danger of a virus and refuse to save the file by default.

## III. UTILIZATION IN INFORMATION LITERACY COURSE

Kumamoto University has offered information literacy courses named "Basic Course of Information Technologies A" and "Basic Course of Information Technologies B" both of which all the 1800 freshmen of the university are required to take.

Naturally, the course includes How-to's and principles of e-mail. We let all the learners use Seemit. As contents to learn the e-mail basics with Seemit, we prepared movie files which explained the installation and operation methods on Web. Students can browse these files freely and can review the class. One scene of the movie contents is shown in Fig. 6.

### A. Utilization of automatic setting function

With a function of automatic setting of Seemit, we let students set e-mail configurations.

Because setting is done without mistakes by automatic setting, students can send and receive e-mails immediately.

In addition, the signature and the address book are made at the same time, too.

Of course, there must be an opinion that "making e-mail configuration for him/herself is a part of learning", we think it

is most important to learn first of all operation of send and receive e-mails and manners and rules.

Understanding of the meaning of setting items (SMTP server, POP server) should be taught afterwards.

If we explain the meaning of the setting item at the first stage, it seems that most students forget them after all.

Since the setup was automatically done, time could be enough spared to instruction of items, such as reception transmission of an e-mail, and there was also time for on-line degree-of-comprehension checks for each student.

### B. Reception and reply

We sent an e-mail to each student beforehand and let them practice receiving and replying. The point is to "check carefully the destination addresses when replying an e-mail" to avoid to send it to undesired destinations. In addition, we sent an e-mail via a mailing list on purpose for an exercise of replying, expecting some careless students reply it to the mailing list and let them experience what to happen.

### C. Sending a message and attention about attached files

We let the each student make a new e-mail. There were not so much input errors of an address, and we were able to confirm the effect of enlarged view of the input field which was a function of Seemit. In addition, we let students send an e-mail to an address for exercises. Successively, we let students receive an e-mail of the attached file that extension was ".bat". When they were going to save an attached file of the extension which was often used for computer virus, danger of viral e-mails was warned of and let them actually confirm that the saving was refused.

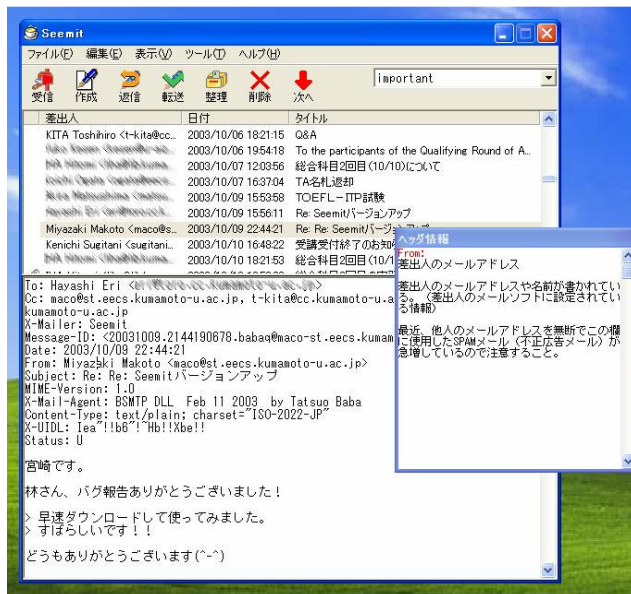


Fig. 4. Glossary window for header information.

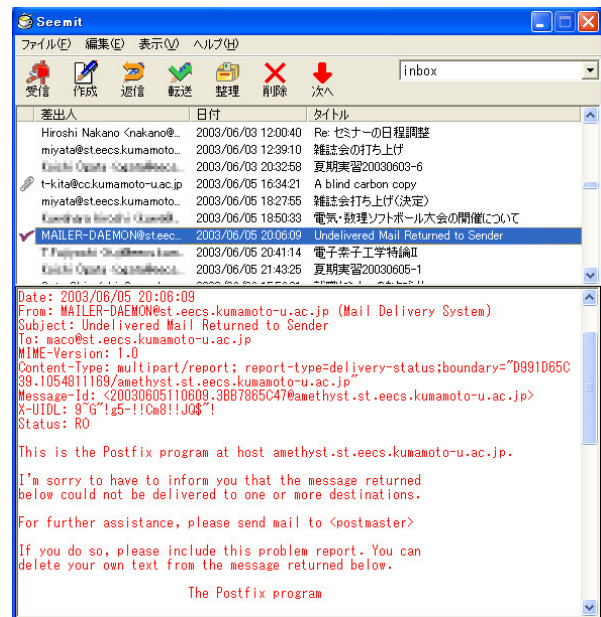


Fig. 5. Display of an error mail.



Fig. 6. Animation contents on a Web page for the information literacy course.

#### D. Understanding of the meaning of error e-mails

"Wrong address example 1" (an address yielding Host not found) "wrong address example 2" (an address yielding unknown user) are set automatically in their address books. we let students send e-mails to each address for confirming error e-mails bounced.

In addition, we explained the point for reading content of error e-mails to know the cause. When an error e-mail receives it in Seemit, a mark is added beside displaying it a list of an e-mail, and it is displayed all the body texts in red.

#### E. Other functions

After a half year of the first e-mail introduction class, in the e-mail class for the second time we used a demonstration function of a SMTP session and a POP session, the function of viewing the source of a received e-mail to teach e-mail delivery mechanisms.

## IV. SUMMARY

In this paper, we described E-mail software Seemit which we have developed aiming at information literacy education, and its utilization in information literacy courses in Kumamoto University.

In teaching beginners how to send and receive E-mails, we face difficulties as the learners do annoying things that cost much time of the class period. And the learners are troubled with trivial errors and can not concentrate on learning the manners, common rules and mechanisms of E-mails operations and delivery.

We think the E-mail applications as we developed will be much help to make effective and instructive course without these problems.

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