Web Mail

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# Introduction

## 1.1 What is this about?

iMail (Web Mail) is a web server application. It sits on a TCP port number and waits for HTTP requests. Users can fill an email form from any browser, which includes From, To, Subject, SMTP Server (Optional), Message. Users can also decide when the email should be sent out.

## 1.2 Features

* SMTP Server is optional
* Schedule sending time
* All fields have validation
* Result notification via email
* All mails’ status can be seen from a list
* Support character set ISO-8859-15

# Problem

* Web Server, Schedule and Status List
  + Response HTTP request
* SMTP Client and Character Set
  + Find MX by DNS lookup of receiver address
  + Conversation with SMTP server
  + ISO-8859-15 character encoding in subject
  + MIME support in message body
  + Error handling

# Solution

## 3.1 Web Server, Schedule and Status List

## 3.2 Smtp Client and Character Set

**Find MX by DNS lookup of receiver address**

MX records are retrieved by Java Naming and Directory Interface. First and foremost, domain name is parsed out by splitting receiver’s address with “@” sign, then JNDI contacts with DNS and returns a list of mail exchange servers for that domain.

**Conversation with SMTP server**

A TCP session is set up to certain SMTP server, and the server is either specified by user, or picked from the first entry in the list of mail exchange servers obtained before. After that, an input stream as well as an output stream is initialized, the input stream is used to issues SMTP instructions, while the output stream gives the responses from the server, and each and every response is checked in order to make error handling feasible.

**ISO-8859-15 character encoding in subject**

Subject is interpreted as encoded-word [rfc2231], more precisely as "=?iso-8859-15?q?*encoded-text*?=", *encoded-text* is quoted printable.

**MIME support in message body**

Three MME headers are inserted, “mime-version: 1.0”, “content-type: text/plain; charset=ISO-8859-15” and “content-transfer-encoding: quoted-printable”, the content of message is put to MIME body, and the content is quoted-printable encoded as well. Class assignment1.util.UrlDecoder transfers url-encoded string to quoted-printable one. For example, “<CR><LF>” in the message is posted as “%0D%0A” and replaced by “=0D=0A” to be sent.

**Error handling**

As said in “Conversation with SMTP server”, the SmtpClient checks the response from the server, if there is any unexpected return code, a SmtpException will be thrown and given to the status page.

# Discussion and conclusions

## Possible application areas

This application is relatively simple, and we consider it mainly as an academic try-out. It is suitable to send western European text message.

## 4.2 Possible extensions and modifications