



Computer Science 2B

Practical Assignment 01

2024-07-23

Deadline: 2024-07-30 12h00

Marks: 100

This practical assignment must be uploaded to eve.uj.ac.za **before** 2024-07-30 12h00. Late or incorrect submissions **will not be accepted**, and will therefore not be marked. You are **not allowed to collaborate** with any other student.

Make use of [proper coding conventions](#) and [documentation](#). Marks will be deducted if these are not present. Your submission should include a batch file.

The reminder page includes details for submission and queries. Please ensure that **ALL** submissions follow the guidelines. The reminder page can be found on the last page of this practical - read the reminder page carefully.

This practical will focus on sending electronic mail using the SMTP protocol

Despite the various social chat and connect applications that are available today, e-mail still remains a popular communication tool. Wouldn't it be interesting to understand how some of the protocols behind this essential communication method work? This week you are being tasked to look at SMTP and build an SMTP client.

Create a GUI based Java application which will act as a mail client that sends e-mail. When the application starts up the user must be presented with a user interface. The interface should allow the user to enter the host-name and port number to which they wish to connect. Furthermore, the GUI should contain textfields (with associated labels) for sender name, recipient name and a text area for the contents of the email. Finally a send button on the interface will allow the message to be sent. Refer to the [SMTP protocol](#) for information on how this is done.

After the user has clicked send, the user will be notified on the status of the sent email. Any errors which occur must be displayed to the user, in a user friendly manner. Testing of the mail client will need to be setup. For a mail server which can be used for testing, refer to [SMTP Bucket](#) or [Papercut](#) (Papercut.Smtp.Setup.exe can be downloaded [here](#)). Being able to use SMTP Bucket or Papercut is not a requirement!

Please note: You may NOT use the JavaMail API (javax.mail package) to complete your practical. Failure to code the protocol from scratch will result in receiving 0 for your practical.

Bonus

Provide an additional attach button that also allows the user to send an attachment with their email. (Hint: An attachment is just DATA that is sent with an email.)

Marksheet

1. Create user specified socket connection	[10]
2. Initiate an SMTP session	[15]
3. Set the sender to be sender@csc2b.uj.ac.za.	[5]
4. Set the recipient to be recipient@csc2b.uj.ac.za.	[5]
5. Set the content of the email according to information in the text area.	[15]
6. Close the SMTP session.	[5]
7. Coding convention (structure, layout).	[10]
8. Commenting (normal and JavaDoc commenting)	[5]
9. Correctness of solution and GUI implementation	[30]
10. Attachments	[20 (bonus)]

NB

Submissions which **do not compile** will be capped at 40%

The awarding of marks is dependent on the student's ability to effectively justify and demonstrate understanding of the practical work presented.

Execution marks are awarded for a correctly functioning application and not for having some related code.

Reminder

Your submission must follow the naming convention as set out in the general learning guide:

SURNAME_INITIALS_STUDENTNUMBER_SUBJECTCODE_YEAR_PRACTICALNUMBER

Your submission must include the following folders:

- **bin** - (*Required*) - Should be empty at submission but will contain runnable binaries when your submission is compiled.
- **docs** - (*Required*) - Contains the batch file to compile your solution, and any additional documentation files. All documentation files must be in **PDF** format. Your details must be included at the top of any **PDF** files submitted. **Do not include generated JavaDoc.**
- **src** - (*Required*) - Contains all relevant source code. Source code must be placed in relevant sub-packages! Your details must be included at the top of the source code.
- **data** - (*Optional*) Contains all data files needed to run your solution.
- **lib** - (*Optional*) Contains all libraries needed to compile and run your solution.

Every submission **must** include a batch file that contains commands which will:

- Compile your Java application source code.
- Compile associated application JavaDoc.
- Run the application.

Do not include generated JavaDoc in your submission. All of the classes/methods which were created/updated need to have JavaDoc comments.

Note that only **one** main submission is marked. If you have already submitted once and want to upload a newer version, then submit a newer file with the same name as the uploaded file in order to overwrite it.

Bonus submissions should be uploaded separately and clearly named as the bonus submission - which will then be marked accordingly.

It is important to make use of **each practical opportunity** as preparation for the practical semester test (ST2). The practical assignments also contribute to the **Practical Component Mark** (PCM). There will be 9 practical assignments (P00-P08) this semester which will be released on a weekly basis except when tests are being written.

The process to **query** your practical assignment with an assistant is discussed in the learning guide as well as the first practical lecture.