Lab 1 – WS2024/25

Legacy Software Engineering with PL/1 and COBOL

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1 Introduction

This is an introductory first exercise to get you started with software development on the mainframe. It is equally important to show understanding for the mainframe setup and development environment as to write and submit a suitable, working solution.

Please note that the lab is intended to be solved individually.

2 Exercise

In this first exercise, the focus lies on getting to know the environment, setting up a "project" and executing a program, rather than programming itself. Please complete the following steps

- Setup your local TK5 [1] (recommended) or TK4- [2] [3] mainframe emulation
- Setup your user and project space
- Execute one of the provided sample programs provided in the Turnkey-System in the partitioned dataset SYS2.JCLLIB
- Write your first program in PL/1 or COBOL to be executed on the emulated mainframe.
- Output the character string "Hello World!" to SYSPRINT (for PL/1) or SYSOUT (the default for COBOL).
- Document the steps necessary to create and execute your solution in the style of a brief how to tutorial

[1] `https://www.prince-webdesign.nl/tk5`
[2] `https://archive.org/details/tk4_ispf.tar`
[3] `https://wotho.pebble-beach.ch/tk4-/`

For the submission write a document explaining your solution. Write the document in a way that a colleague with no prior exposure to the environment could use it as a how-to. Document at least:

- the names and purposes of the required data sets
- an explanation how your program solves the posed problem
- the steps you performed to execute the program and obtain the output

3 Submission

The submission is due **on Friday 2024-11-22 at 23:59** via TUWEL.

Please submit the following items in an archive, either Zip or Tar:

- The source code of your implementation (including all complementary information and files, such as JCL)
- A sample execution of your program, consisting of
  - Input parameters (please select non-trivial input)
  - All output. Please separate the output of your program from the remaining job output.
- A document explaining your solution in either English or German language.
- Any known issues or limitations you are aware of.

4 Tipps

Do not hesitate to ask questions on the discussion forum or after lectures. If really stuck it is also possible to contact us via mail.

We also want to encourage you to engage in discussion with your colleagues.

If you encounter any restrictions that you think are due to the use of the (very) old compilers (as present in the TurnKey systems), please document as part of your solution.