COMPUTING METHODS IN HEP **Exercise 2** **Spring 2023**
(To be returned by 10:15 on Friday 3.2.)

1. **Write a C++ program** which takes a number as a command line input parameter and writes "Hello world < *input number* >" in standard output. **Write a Makefile** which compiles and links the program. Create a job script in

   (a) bash

   (b) Python

   which runs in parallel n jobs ($n = 10$) with different input and returns the output of each job in a separate file.

2. In CMS we calculate the integrated luminosity of the collision data with a program called 'bril'. In the git repository

   https://www.mv.helsinki.fi/home/slehti/CompInHEP_k2023.git

   subdirectory Ex2 we have a bril output brilcalc.log. **Write a python script** which takes the summary luminosity from column 'totrecorded(/pb)' and prints the luminosity on screen in units of fb^{-1} and with one decimal precision.

   (Hint: Use re (regular expressions))

3. (Extra, voluntary) Extend your python script from **2.** to sum the recorded luminosity from different run:fill's and confirm the sum is the same as given in the summary.

Please save your results in your git repository.