1. Create a LaTeX document which contains Feynman graphs for the lowest order contributions to electron-positron annihilation. Place the two figures in parallel, and use a joint caption below the figures. Add reference using BibTeX.

2. Write a Makefile which produces a pdf file from the source files used in 1.

3. Write a C++ program which takes a number as input 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) csh

   (c) Perl

   (d) Python

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

4. We have root files (files ending .root) in a directory structure

   ```
   a/b1|b2|..|bn/c/x1.root,x2.root,..xn.root.
   ```

   Write a python script to scan the directory a/ recursively to make a list of the root files. Print on screen the file names with full paths and in the end the number of root files found. Use the subprocess module and regular expressions. (Hint: create dummy directory structure and root files for testing)

Please make a tar-ball from your files and return it by email to
sami.lehti(at)cern.ch.