

## Exercise Introduction

Before attempting the exercises in this document please ensure that you have read and understood the key topics covered in Tutorial.

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### Task 1: Writing a Makefile (10 min)

Complete the following tasks:

1. Clone the git repository  
`https://github.com/KTTrev/Exercises.git`
2. cd into Exercises/test\_make, and write a makefile to compile the following scripts: main\_age.c, main\_hallo.c, main\_hello.c Use target names of your choice
3. Execute the makefile, and check if the compilation worked properly by running the obtained files
4. Include a clean rule, recompile the files again, and clean them afterwards

### Task 2: Using Cmake (5 min)

In the previous git repository, if you cd into Exercises/test\_cmake, you will find the three C scripts that were used in the previous exercise, with an additional file: CMakeFiles.txt

1. Load cmake/3.21.4 with the following command:  
`module load cmake/3.21.4`
2. Use the steps provided in the previous slide to generate the executables

### Task 3: Building with Autotools (10 min)

Follow the instructions to build *nano* from source:

- Get the source code with the command `wget` :  
`wget https://mirrors.tripadvisor.com/gnu/nano/nano-6.4.tar.xz`

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- Unpack the nano source with `tar -xvf` :  
`tar -xvf nano-6.4.tar.xz`
  - Then:
    - `cd nano-6.4/`
    - `mkdir build`
    - `./configure --prefix=/usr/users/YOUR USERNAME/bin/`
    - `make`
    - `make install`
  - Confirm that it works via
    - `/bin/bin/nano --version`
    - This should show the version you just compiled, e.g., 6.4
  - Make it your default version via
    - `echo "alias nano='/usr/users/YOUR USERNAME/bin/bin/nano' >> ~/.bashrc`
    - `source ~/.bashrc`
    - `nano --version`

Now also build ncurses from source:

From <https://ftp.gnu.org/gnu/ncurses/>, download the source code of ncurses-6.3, and install it as in the previous example.