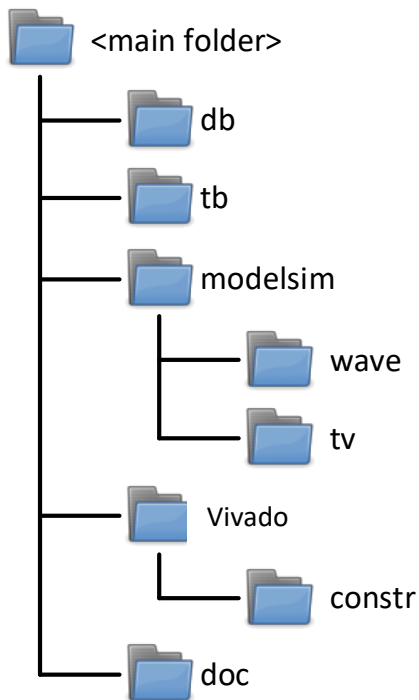# Environment setup

Before using the environment you need to satisfy the following requirements:

- Add (permanently) the path of the Modelsim executables to the PATH environment variable
  - for Modelsim, the path of the folder containing the vsim/vsim.exe executable

- Python (versions 2.x or 3.x), with packages
  - os
  - sys
  - shutil
  - glob

Environment guide

Structure of the environment:

The **doc/** folder contains all the documents related to the project development and this environment. Please, put here also the project report upon delivery.

The **db/** folder must be used for the RTL design files.

The **tb/** folder must be used for the testbench files.

Create and add a folder named **model/** for the high-level model files.

The **modelsim/** and **vivado/** folders are intended to be used for the Modelsim and Vivado tools, respectively. They include Python scripts and sub-folders that facilitate the use of these tools.

- **modelsim/**
  - Use **tv/** and **wave/** sub-folders to include test vectors and waveforms, respectively.
  - **build.py** script: it automatically creates a Modelsim project in the modelsim/ folder that includes all the VHDL files that are in the db/ and tb/ folders.
  - **clean.py** script: it cleans the modelsim/ folder by removing all files except tv/ and wave/ sub-folders, build.py script and the clean.py script itself.

- **Vivado/**
  - Use **constr/** sub-folder to include constraints file(s).

Note: before delivering the project for the exam, **please run the clean scripts inside folders Vivado/ and modelsim/**, so that Modelsim and Vivado projects files are not included within the delivery, but they are included <u>all and only the files relevant to the project</u>, i.e.

- **model file(s)** inside **model/[optional]**   (content of model/ not affected by clean scripts   )
- **design file(s)** inside <u>**db/**</u>   (content of db/ not affected by clean scripts   )
- **testbench(es) file(s)** inside **tb/**   (content of tb/ not affected by clean scripts   )
- **project report** inside **doc/**   (content of doc/ not affected by clean scripts   )
- **testvector(s) file(s)** in **modelsim/tv/**   (content of modelsim/tv/ not affected by clean scripts   )
- **constraint(s) file(s)** in **Vivado/constr/**   (content of Vivado/constr/ not affected by clean scripts)