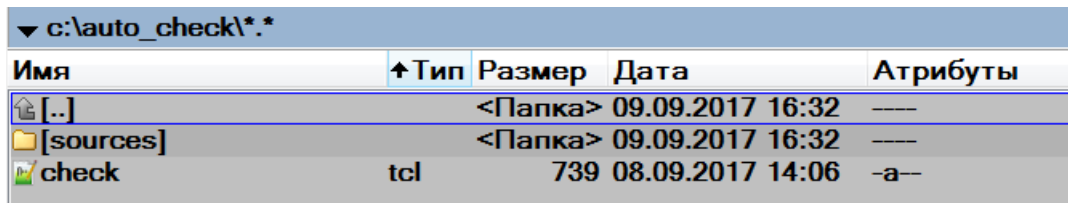# Autocheking of lab source codes

In general the source code of a lab task requires autochecking, except those where it is explicitly said "not for autochecking". The autochecking generates a number (a hash), one have to send this number in the corresponding form of online course. Each task is autochecked separately. E.g., if there are 4 tasks in the lab, than the source code for each task is to be checked. Finally, 4 hashes are required.

The autochecking is performed using tcl scripts for automatic Vivado project generation and simulation.

The steps to perform the autochecking (to get the hash) is the following.

1. Unpack the archive *check_X.rar* (X – the lab and task number, e.g., 01 – archive for the first lab) to any folder on your PC. Note that the path to this folder should not contain whitespaces or Cyrillic symbols. Check that the script *check.tcl* is inside the folder.
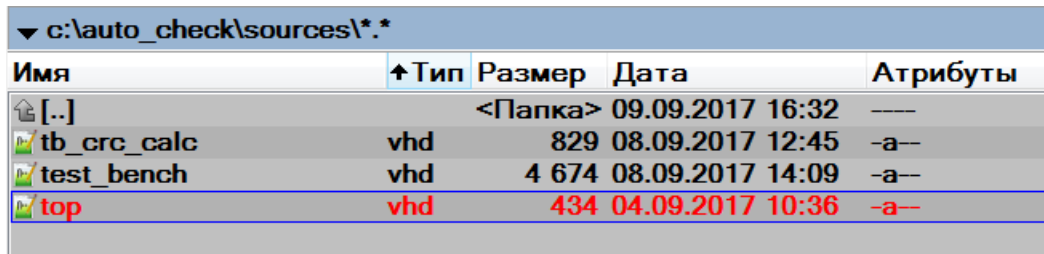

2. Add all your *.vhd files into the *sources* folder. The VHDL entity declaration (entity name, input and output ports' names and bit widths) must be the one, which is proposed in the corresponding lab task description.

In the following example the autochecked entity is in the *top.vhd*. Files *test_bench.vhd* and *tb_crc_calc.vhd* are already present in the *sources* folder.
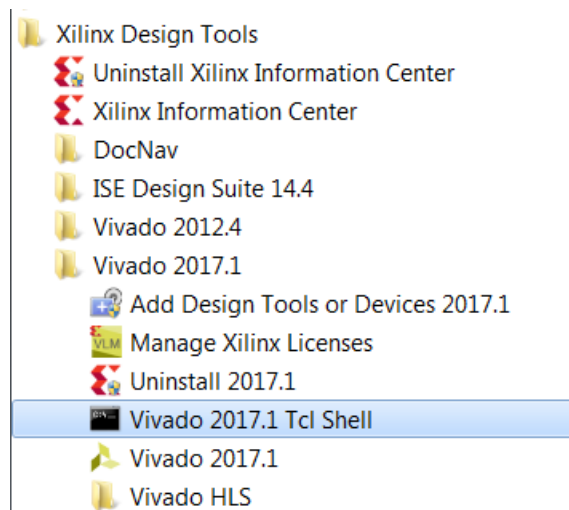
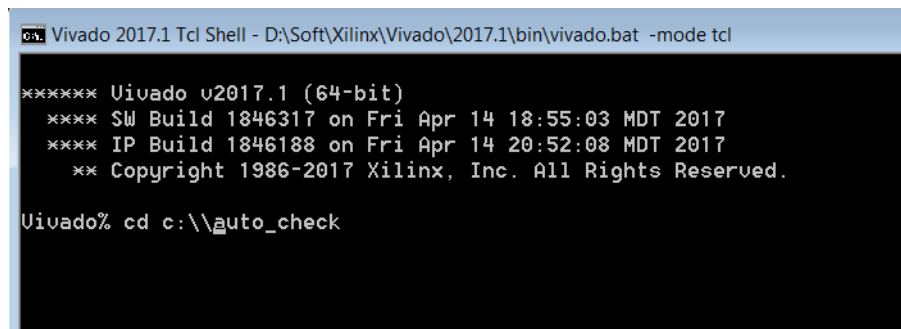Add all your source files in case when the autochecked design consists of several entities.

3. Run the Vivado Tcl Shell.

Run=>Xilinx Design Tools=>Vivado 20xx=> Vivado 20xx Tcl Shell.

4. The command line for tcl shell is opened. Change the current directory to the folder where the script *check.tcl* is located, using *cd* command. Note that symbols \\ instead of \ are used in the path definition.

5. Run the autochecking script using *source* command.
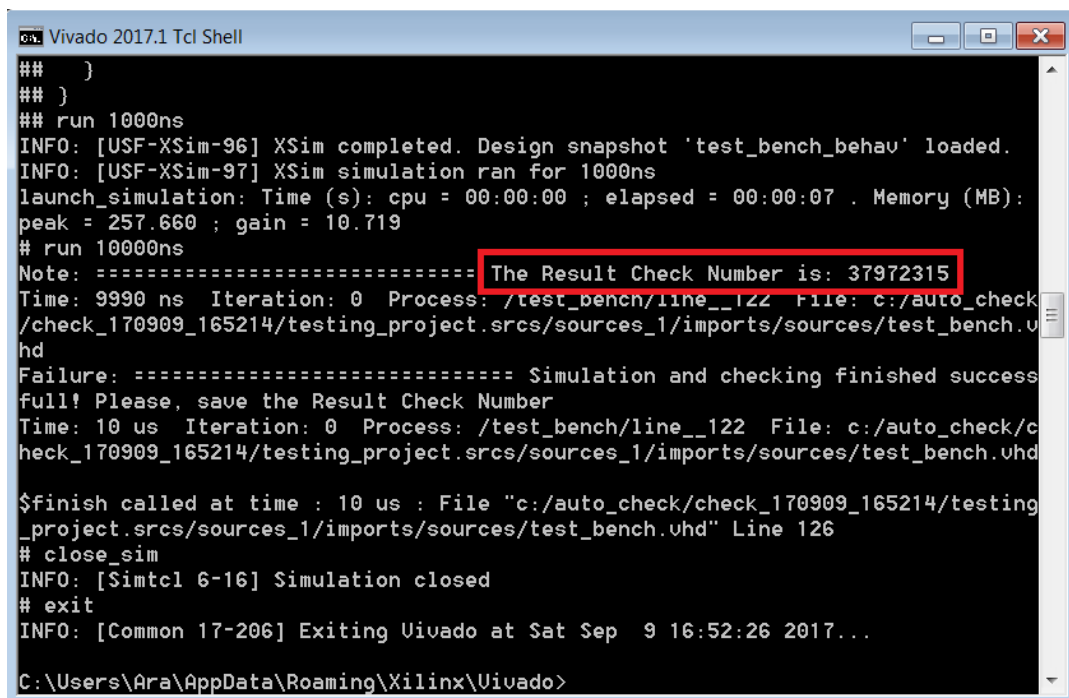
Note, that steps 4 and 5 could be performed by the following single command without *cd*: just *source {source c:\auto_check\check.tcl}*.

6. Wait for autochecking to be fully completed. Copy the hash (it is in red on the following figure). In the following example the hash is 37972315. Note, that the new folder is created in the folder with *check.tcl* script after the check. This new folder contains the Vivado project, which was automatically created for autochecking.