# **Working with Quartos**

**Open Quartos** 

## 1. Define the project

File -> new project wizard or in the gui



Click next

Give the project a name

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Click next

Select empty project

Click next

Add files: click next

Family, Device & Settings:

Select family: cyclone IV E

Mark specific device selected in "available devices" list

In available devices list choose: EP4CE6E22C8

Next

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EDA Tool Setting:

Select in design entry/synthesis: synplify

Select in Simulation: modelsim



Next

A summary of the project's definitions



Finish

#### 2. Write the VHDL file

File - > new - > design files - > vhdl file -> OK

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Write the VHDL code and save as \*.vhd file

The name of the file should be same as the name of the entity

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To view the design after synthesis:

Tools - > netlist viewer -> RTL viewer

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#### 3. Driving inputs

File - > new - > verification/debugging files - > university program VWF -> OK



Click the right button in the name area. Select" Insert Node or Bus"



Push "Node Finder"



Push "List". All inputs & outputs will be displayed

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Move the inputs and outputs to the right window by pressing the arrow

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Generate stimuli:

Option 1: Mark the cubes you would like to change

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### Option 2: press the signal name

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<ul> <li>OUT_XOR BX</li> </ul>				

Define frequency.



#### 4. Running simulation

Simulation -> run functional simulation



Simulation -> run timing simulation

You can see there is a delay between the inputs and the outputs

