Last updated 1/13/25

- VHDL Design Capture
 - Process
 - 1. Create a new Quartus Project see the Quartus Project Setup slides
 - 2. Open a new VHDL file(vhdl)
 - 3. Enter the VHDL code
 - 4. Set Top Level Entity
 - 5. Run Analysis to verify connectivity

Schematic Generation

1. Create a new Quartus Project – see the Quartus **Project Setup slides**

Project Navigator		IP Catalog	
Entity:Instance MAX 10: 10M50DAF484C7G MAX 10: 10M50DAF484C7G MAX 10: 10M50DAF484C7G MAX 10: 10M50DAF484C7G Task Task Task Compilation Task Task Tim Compile Design Analysis & Synthesis Fitter (Place & Route) Show Fitter (Place & Route) Show Fitter (Place & Route) Timing Analysis	Quartus* Prime Version 1 Werson 2 • Werson 1 Werson 2 • Documentation © Documentation • Notification Center	 Installed IP Project Directory No Selection Avail Library Basic Functions DSP Interface Protocol Memory Interface Processors and Pui University Program Search for Partner IP + Add 	lable Is Is and Co Veripherals m
Image: Type in the stage Project Directory: C:\Users\j Project Name: hdl_capture	<pre>ohnsontimoj\Quartus_Projects_CPE1500\HDL_Capture</pre>		

© tj

- 2. Open a new VHDL file (BDF)
 - File \rightarrow New \rightarrow VHDL File
 - OK

	New Quartus Prime Project
,	Design Files
	AHDL File
	Block Diagram/Schematic File
	EDIF File
	Qsys System File
	State Machine File
	SystemVerilog HDL File
	Tcl Script File
	Verilog HDL File
	VHDL File
,	Memory Files

			· · · · ·	· · ·	• · · · ·		
×		Vhd	l1.vhd	×			
		0 1	•		} ■	0 7	
	1						
×	def	fault	name	is Vh	dl1.vh	d	

- File \rightarrow Save As
 - Change the name to a descriptive name
- Save

File name:	hdl_capture.vhdl
Save as type:	VHDL Files (*.vhd *.vhdl)

Be sure to use the .vhdl file extension .vhd means virtual hard drive to Windows

3. Enter Code

End E	File Edit View Project Assignments Proce	Quartus_Projects_CPE1500/HDL_Capture/hdl_capture - hdl_capture	
Project Navigator Files Project Navigator Files Image: A did capture Project Navigator Files Image: A did capture Image: A did capture Project Navigator Files Image: A did capture Image: A did capture Image: A did capture Project Navigator Image: A did capture			Search altera.com
Project Navigator Piles Q Q Q Z Piles Piles <t< th=""><th></th><th></th><th>A 🔶 🚂 岁</th></t<>			A 🔶 🚂 岁
Files Image: Applicable of the second se	Project Navigator Files	🍲 mux_4_hdl.vhdl 🗵	IP Catalog
	Files Image: mux_4_hdl.vwf Image: mux_4_hdl_sim1vwf.vwf Image: mux_4_hdl_sim1vwf.vwf Tasks Compilation Task Image: mux_4_hdl_sim1vwf.vwf Tasks Compile Design Image: mux_4_hdl_sim1vwf.vwf Image: mux_4_hdl_sim1vwf.vwf.vwf Image: mux_4_hdl_sim1vwf.vwf.vwf.vwf Image: mux_4_hdl_sim1vwf.vwf.vwf.vwf.vwf.vwf.vwf.vwf.vw	<pre> 2 267 2 268 2 2 268 2 2 268 2 2 268 2 2 268 2 2 268 2 2 268 2 2 268 2 2 268 2 2 268 2 2 268 2 2 268 2 2 268 2 2 268 2 2 268 2 2 268 2 2 268 2 3 2 2 3 2 2 4 2 5 2 5 2 5 2 5 2 5 2 5 2 5 2 5 2 5 2 5</pre>	 Installed IP Project Directory No Selection Available Library Basic Functions DSP Interface Protocols Memory Interfaces and Controllers Processors and Peripherals University Program Search for Partner IP

© tj

- 4. Set the Top Level Entity
 - Select Files
 - Rt-click on the design → Set as Top Level Entity



- 5. Run Analysis to verify the connections
 - Processing → Analyze Current File

/pe	ID	Message
0		*******************************
0		Running Quartus Prime Analyze Current File
0		Command: quartus_mapread_settings_files=onwrite_settings_files=off hdl_capt
<u> </u>	18236	Number of processors has not been specified which may cause overloading on shared
0	20030	Parallel compliation is enabled and will use 10 of the in processors detected
-		Quantus Prime Analyze Current File was successful 0 ennors 2 warnings
0		Quartus Prime Analyze Current File was successful. 0 errors, 2 warnings
0		Quartus Prime Analyze Current File was successful. 0 errors, 2 warnings
0	121	Quartus Prime Analyze Current File was successful. 0 errors, 2 warnings
0	H	Quartus Prime Analyze Current File was successful. 0 errors, 2 warnings
•		Quartus Prime Analyze Current File was successful. 0 errors, 2 warnings
•		Quartus Prime Analyze Current File was successful. 0 errors, 2 warnings
0		Quartus Prime Analyze Current File was successful. 0 errors, 2 warnings
		Quartus Prime Analyze Current File was successful. 0 errors, 2 warnings

© ti