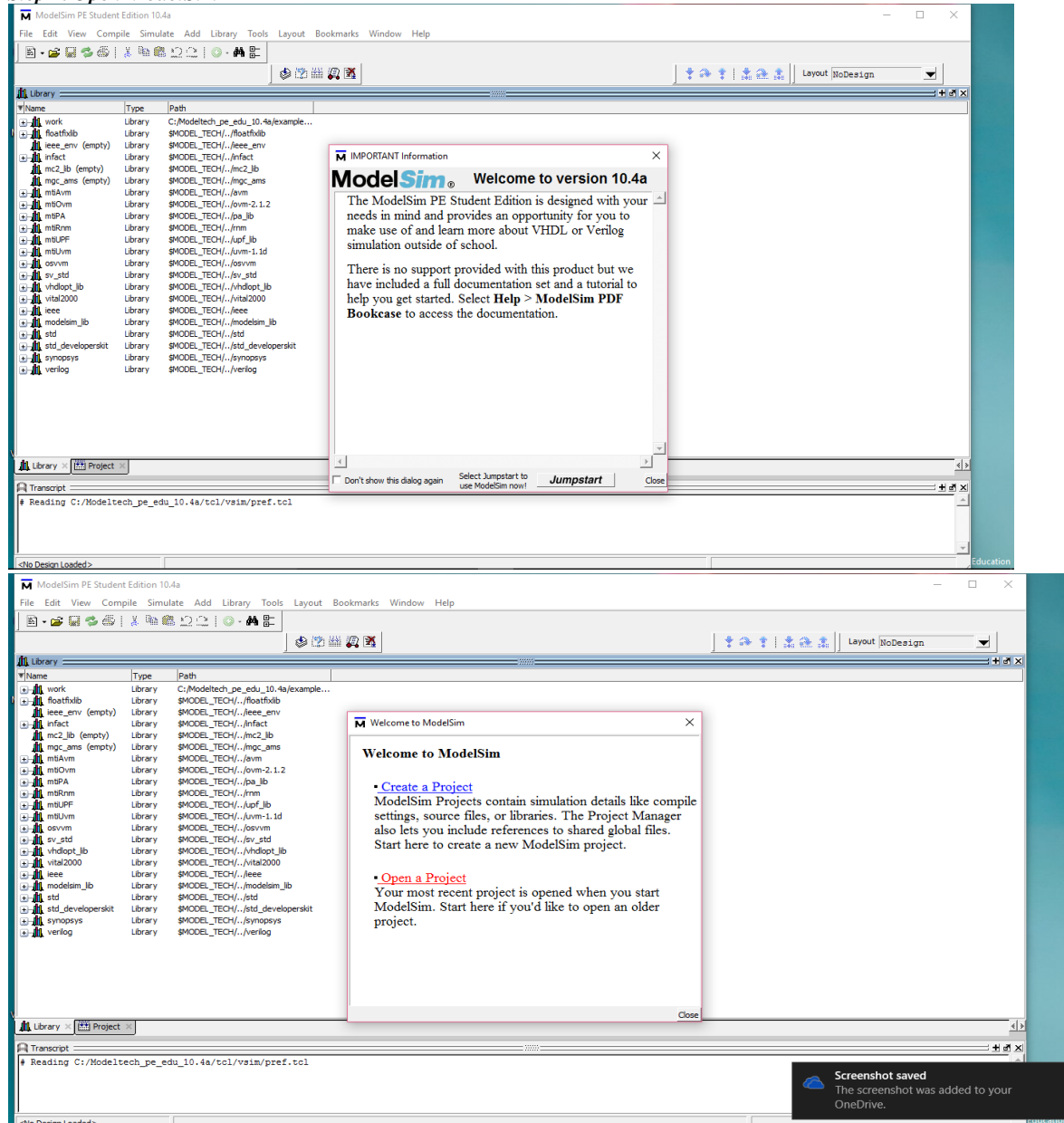


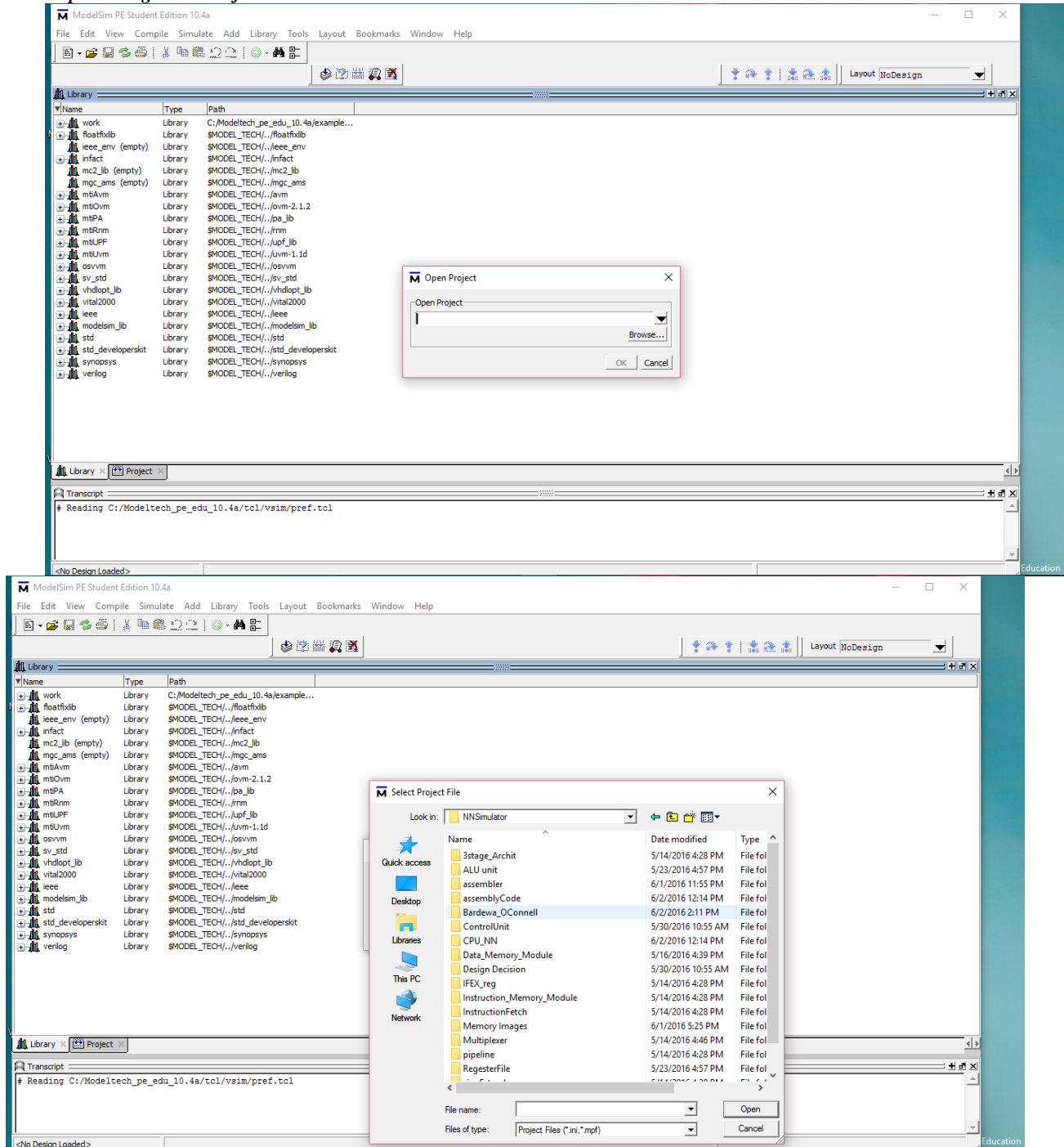
How to run our project in ModelSim

Step 1. Open ModelSim

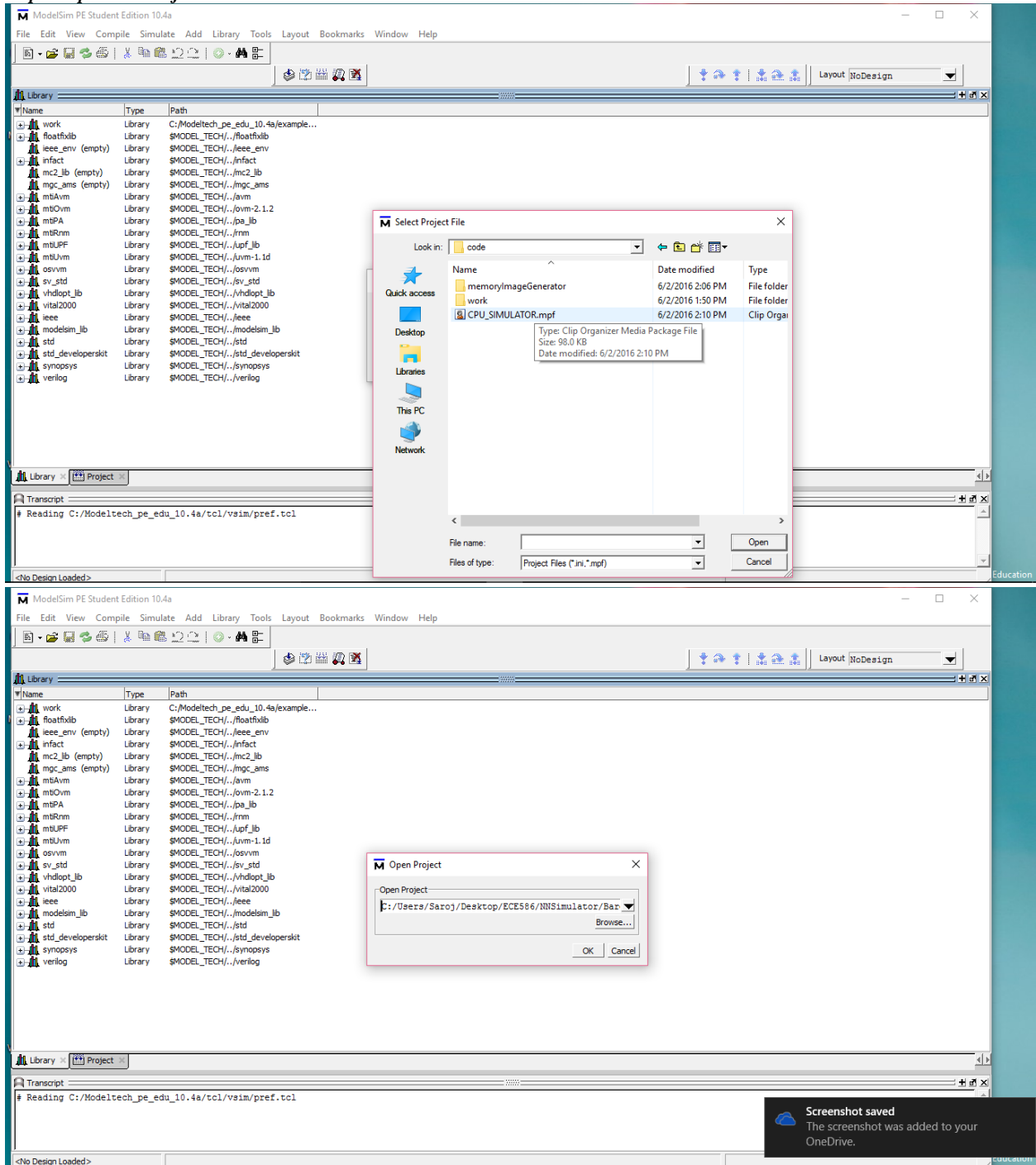


Step 2. Click on "Open a project"

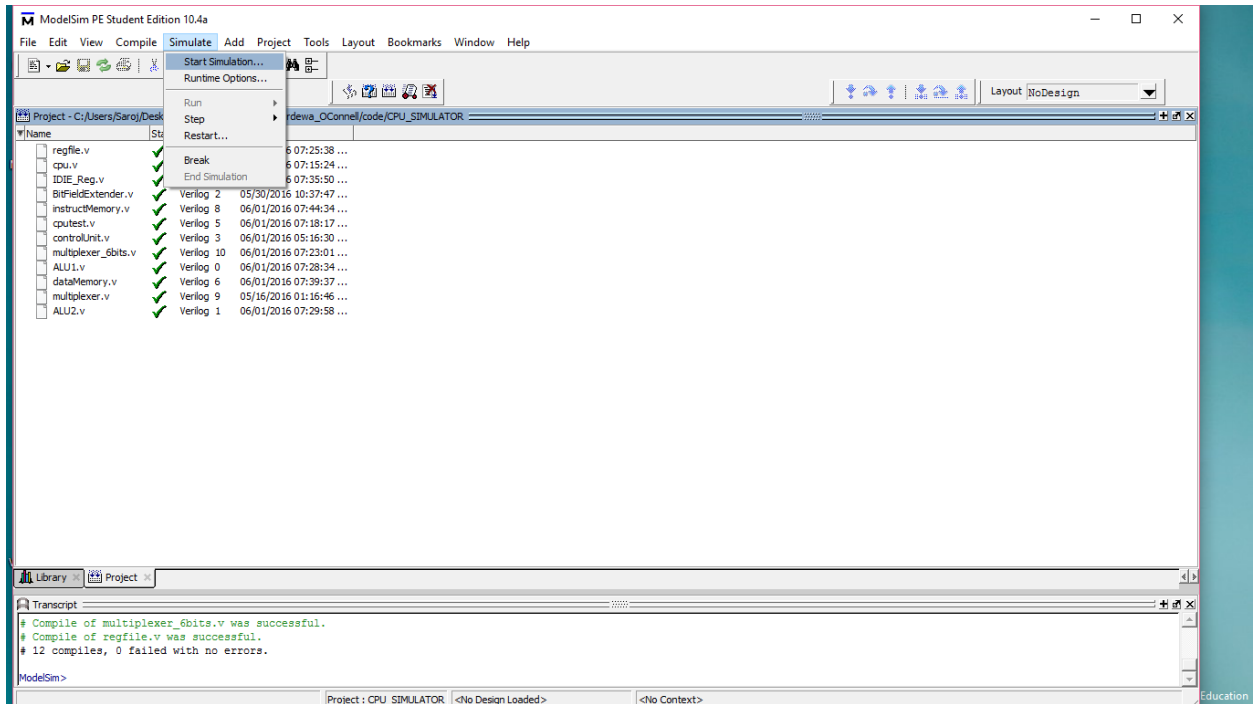
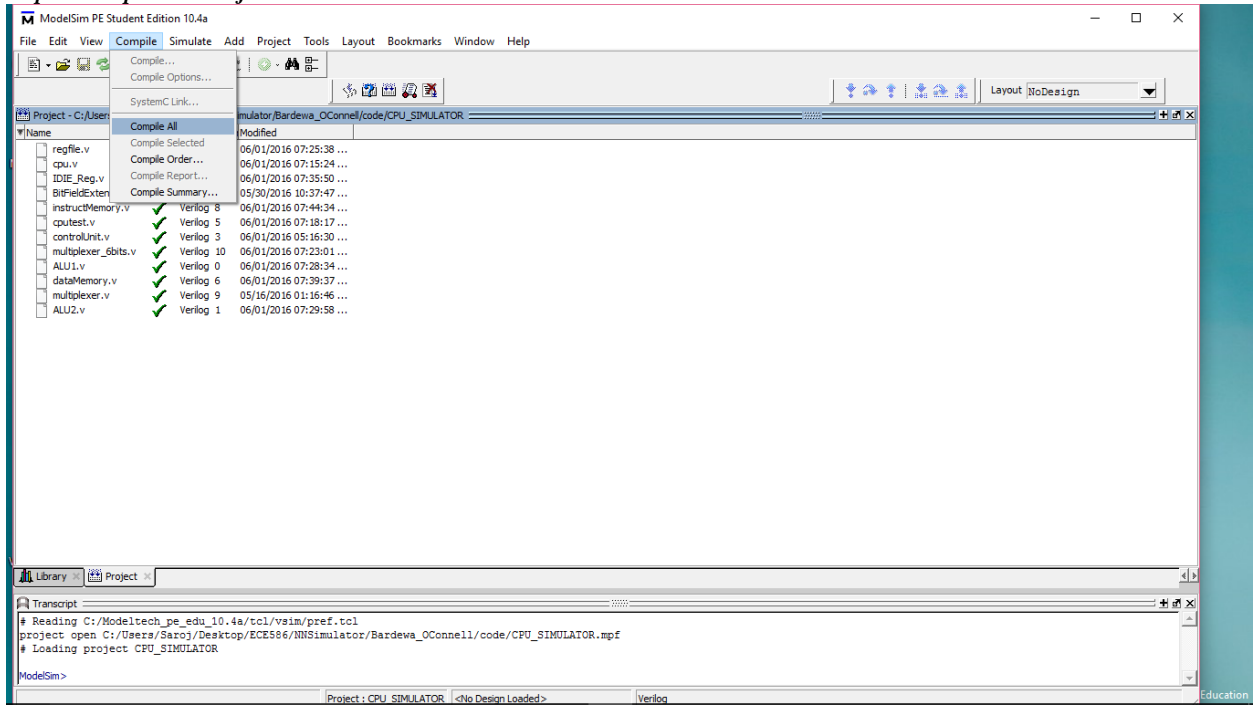
Step 3. Navigate to our folder



Step 4. Open the Project



Step 5. Compile the Project



Step 6. Simulate the program

Step 7. Click on *cpuTest* to simulate it

The screenshot shows the ModelSim PE Student Edition 10.4a interface. The main window displays a project named "CPU_SIMULATOR" with a list of Verilog files. The "Start Simulation" dialog box is open, showing the "Design" tab with a tree view of the project files. The "Design Unit(s)" field is set to "work.cpuTest". The "Resolution" is set to "default".

The "Start Simulation" dialog box has the following content:

Name	Type	Path
work	Library	work
ALU1	Module	C:/Users/Saroj/Desktop/ECE586/NNSI...
ALU2	Module	C:/Users/Saroj/Desktop/ECE586/NNSI...
bitFieldExt	Module	C:/Users/Saroj/Desktop/ECE586/NNSI...
controlUnit	Module	C:/Users/Saroj/Desktop/ECE586/NNSI...
cpu	Module	C:/Users/Saroj/Desktop/ECE586/NNSI...
cpuTest	Module	C:/Users/Saroj/Desktop/ECE586/NNSI...
dataMemory	Module	C:/Users/Saroj/Desktop/ECE586/NNSI...
IFEX_Reg	Module	C:/Users/Saroj/Desktop/ECE586/NNSI...
InstructionMemo...	Module	C:/Users/Saroj/Desktop/ECE586/NNSI...

The "Design Unit(s)" field contains "work.cpuTest". The "Resolution" dropdown is set to "default".

The "Start Simulation" dialog box has "OK" and "Cancel" buttons.

The main window shows the "Project: CPU_SIMULATOR" and "cpuTest" tabs. The "Transcript" window displays the following output:

```
# Compile of multiplexer_6bits.v was successful.
# Compile of regfile.v was successful.
# 12 compiles, 0 failed with no errors.

ModelSim>
```

The "Run" window shows the "Run - Default" tab with a "Welcome to the Enhanced Dataflow Window!" message. The "Dataflow" window shows a list of signals:

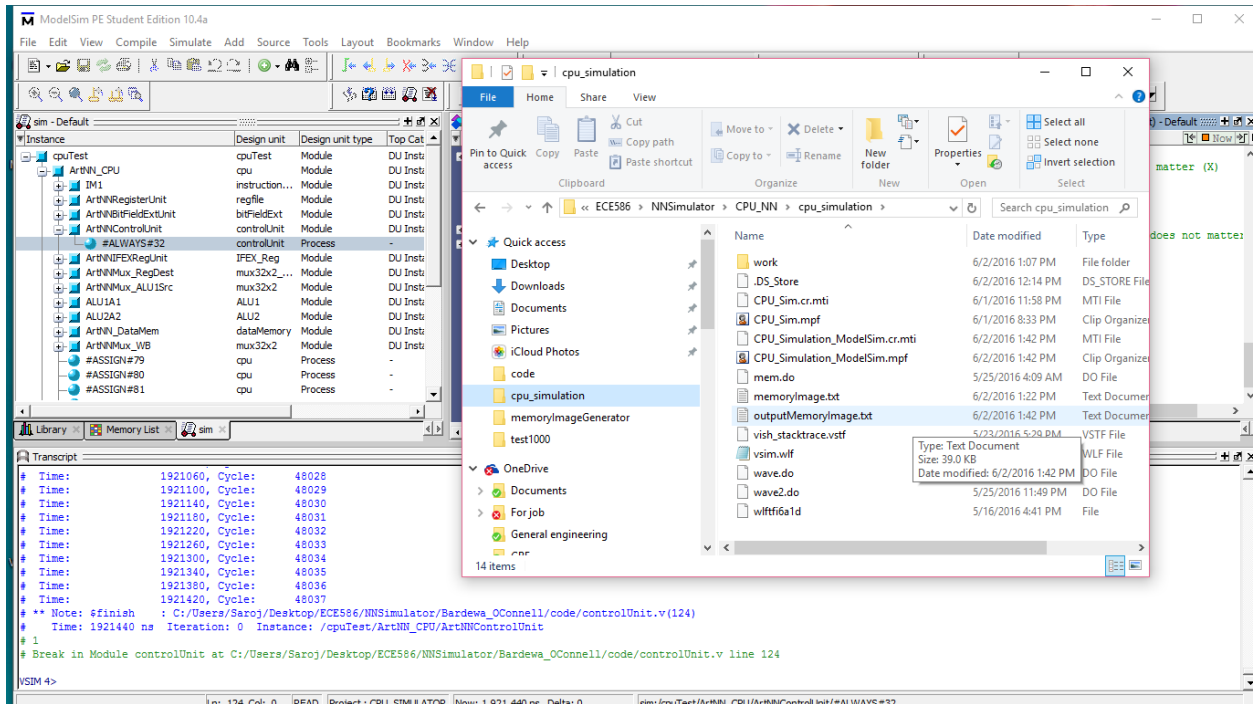
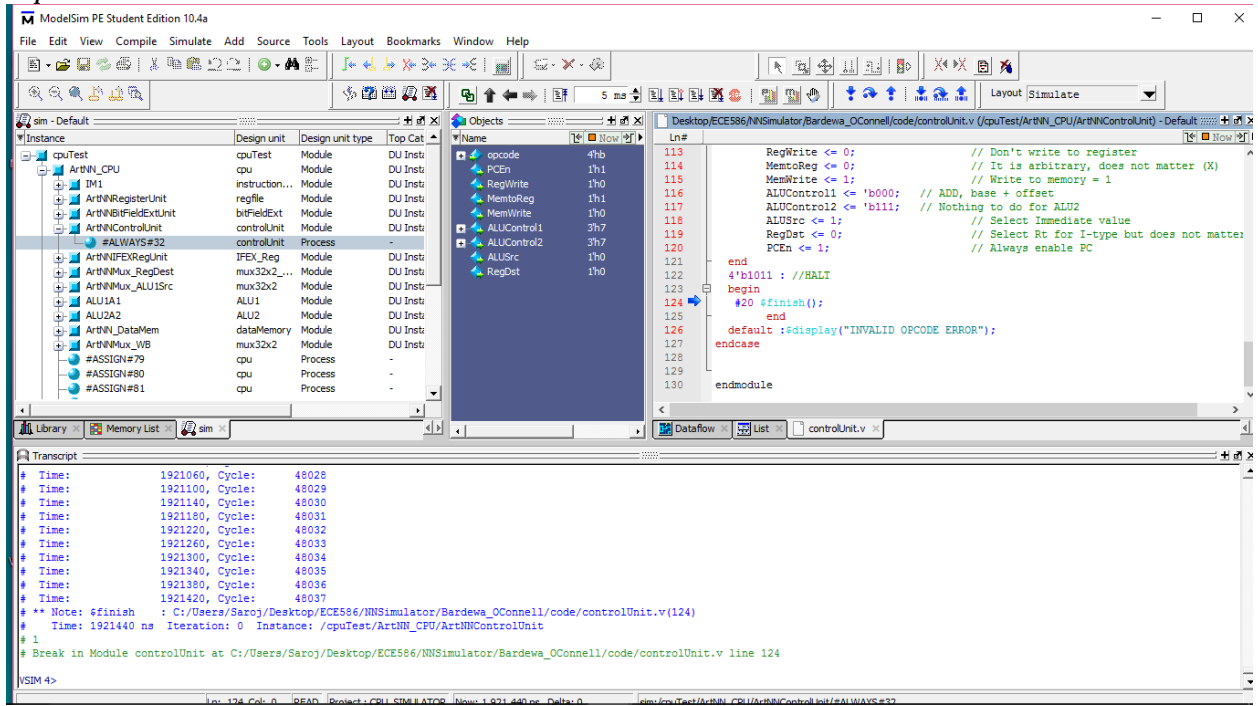
Name	Value
BUS_WIDTH	32h0000002
CLK	1hx
CLK_cycle	32hxxxxxxx

The "Transcript" window shows the following output:

```
# vsim -gui
# Start time: 14:13:40 on Jun 02, 2016
# Loading work.cpuTest
# Loading work.cpu
# Loading work.instructionMemory
# Loading work.regfile
# Loading work.bitFieldExt
# Loading work.controlUnit
# Loading work.IFEX_Reg
# Loading work.mux32x2_6bits
# Loading work.mux32x2
# Loading work.ALU1
# Loading work.ALU2
# Loading work.dataMemory

VSI3M 3>
```

Step 8. Set the simulation time to 5ms and Run it



Step 9. Compare the output of MemoryImageFile to the expected output file