MODELSIM

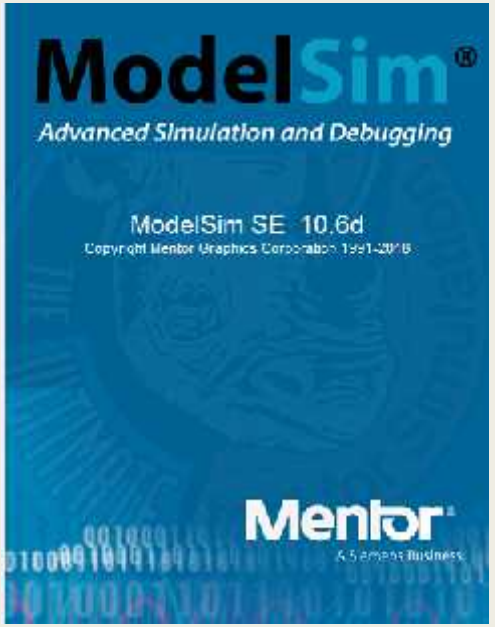
Introduction to Modelsim

By

Daniel Jerban

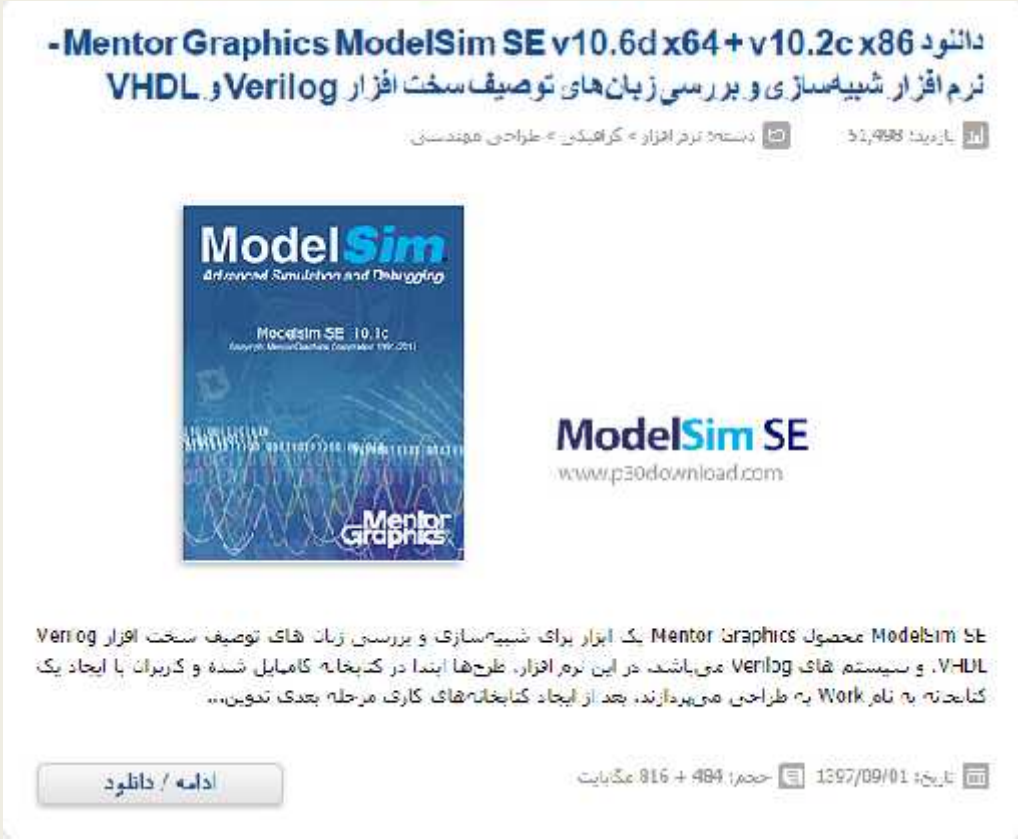
What is ModelSim ?

- **ModelSim** is a multi-language HDL simulation environment by Mentor Graphics.
- **HDL**: Hardware Description Languages such as VHDL, Verilog and SystemC
- **Mentor Graphics**: Mentor, a Siemens Business is a US-based electronic design automation (EDA) multinational corporation for electrical engineering and electronics.

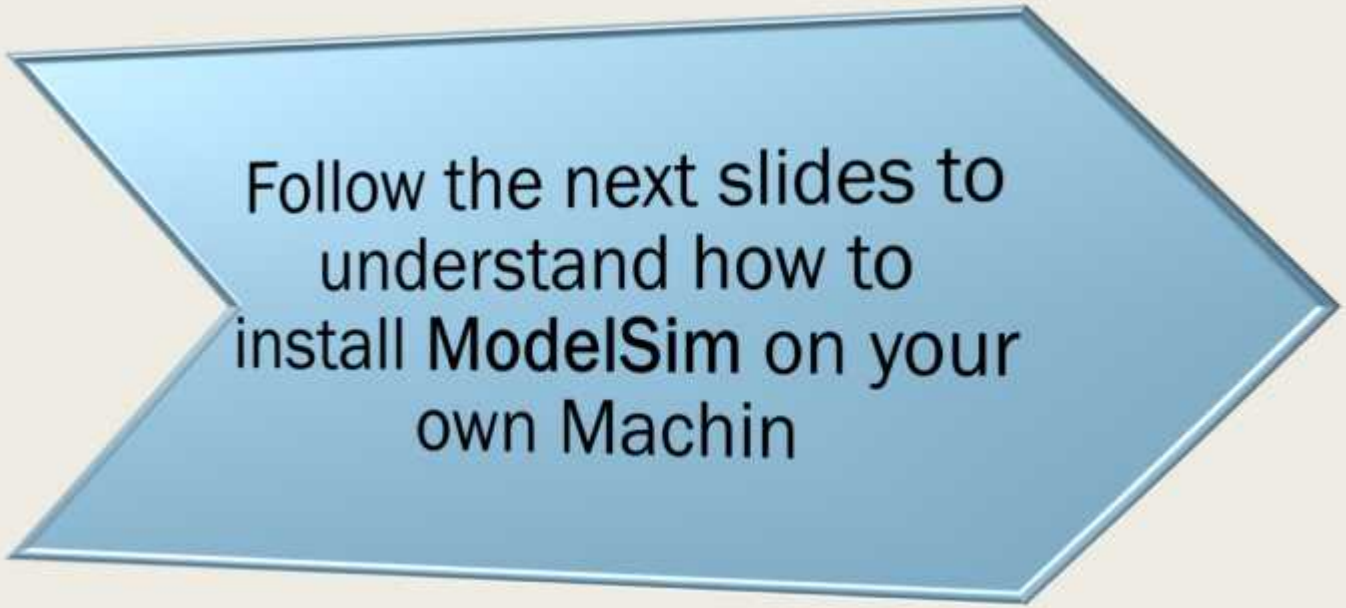


Download ModelSim!

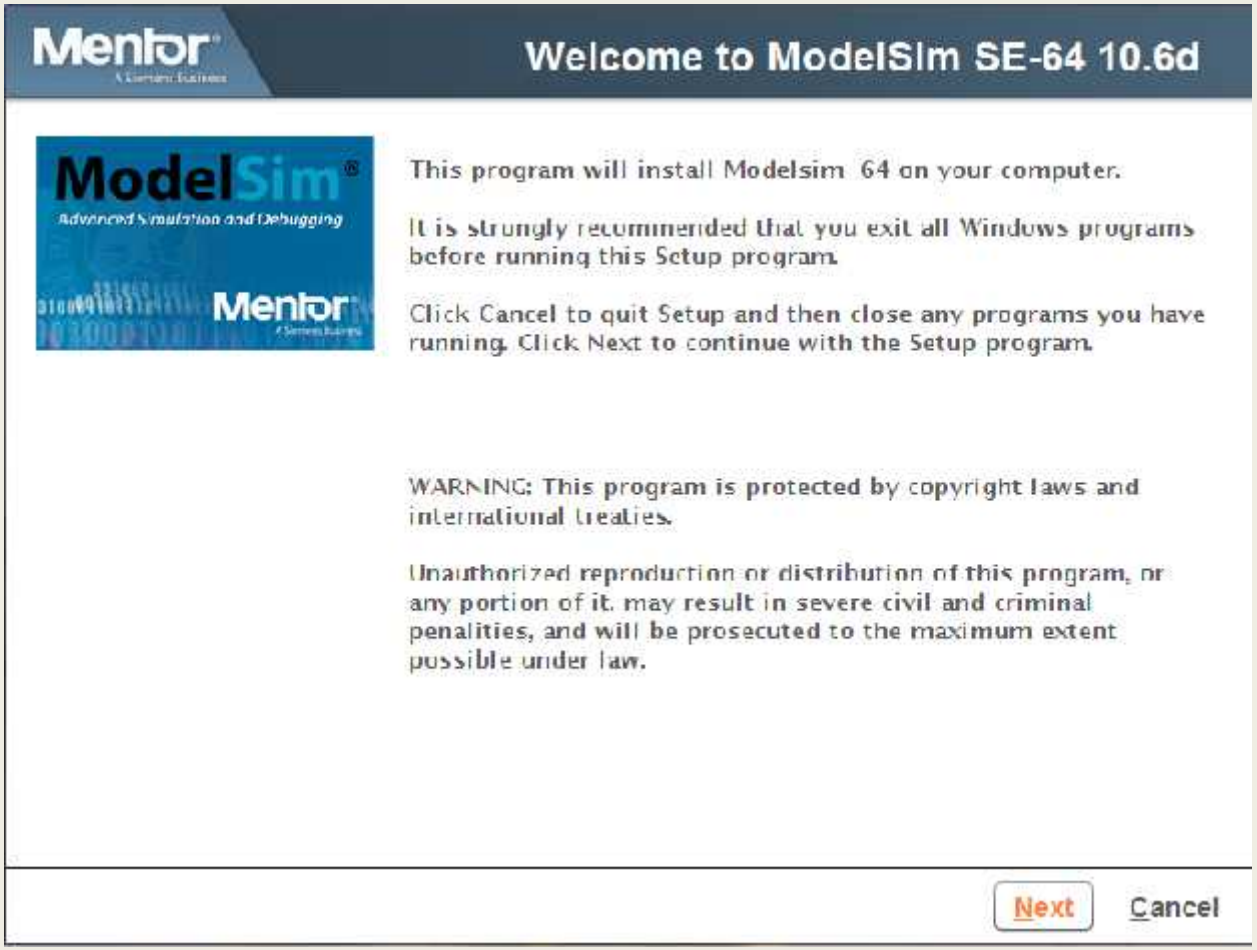
- Web Address:
  - P30download.com



ModelSim Installation Tutorial



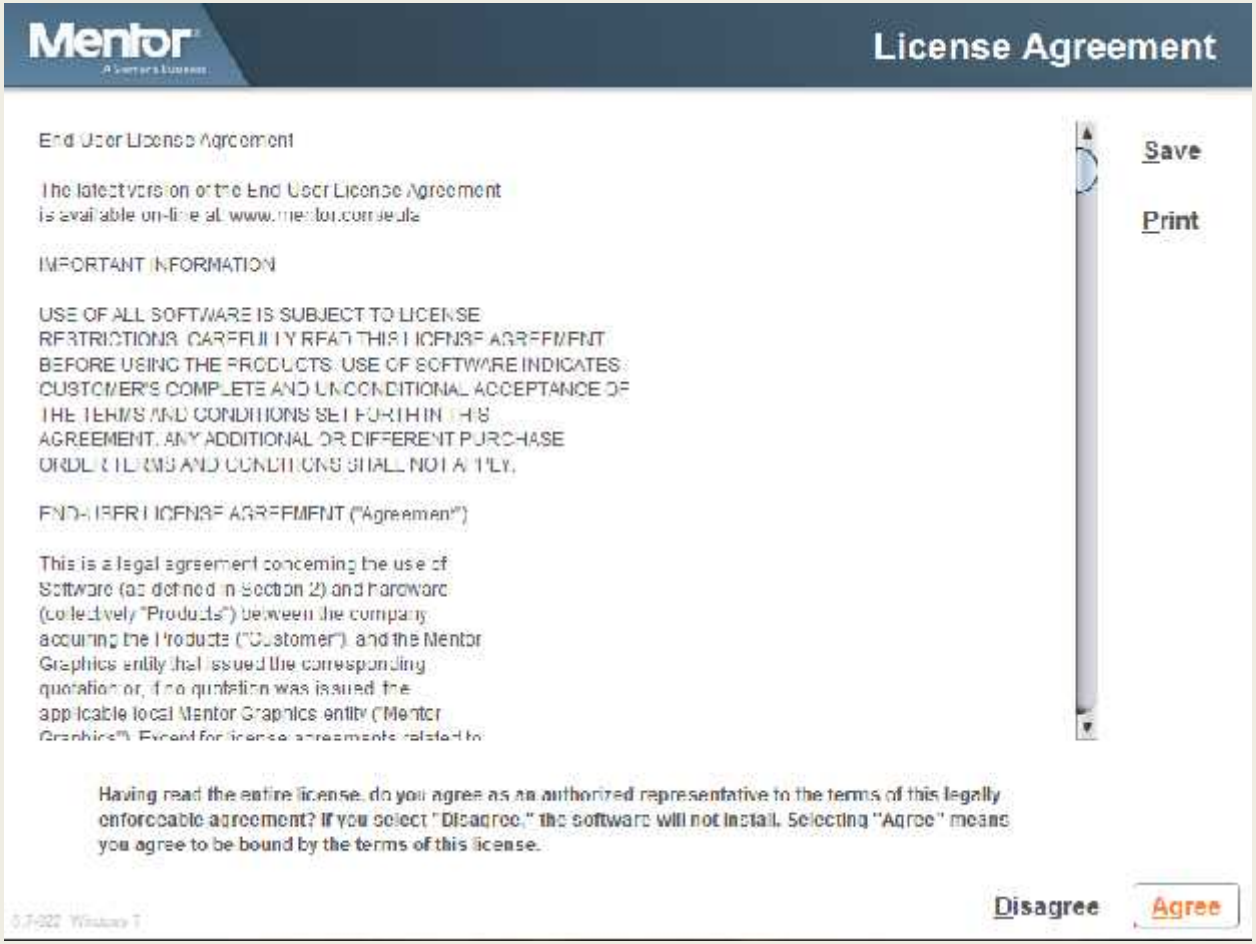
Step 1.


Mentor
Welcome to ModelSim SE-64 10.6d
ModelSim
Advanced Simulation and Debugging
Mentor
This program will install Modelsim 64 on your computer.
It is strongly recommended that you exit all Windows programs before running this Setup program.
Click Cancel to quit Setup and then close any programs you have running. Click Next to continue with the Setup program.
WARNING: This program is protected by copyright laws and international treaties.
Unauthorized reproduction or distribution of this program, or any portion of it, may result in severe civil and criminal penalities, and will be prosecuted to the maximum extent possible under law.
Next
Cancel

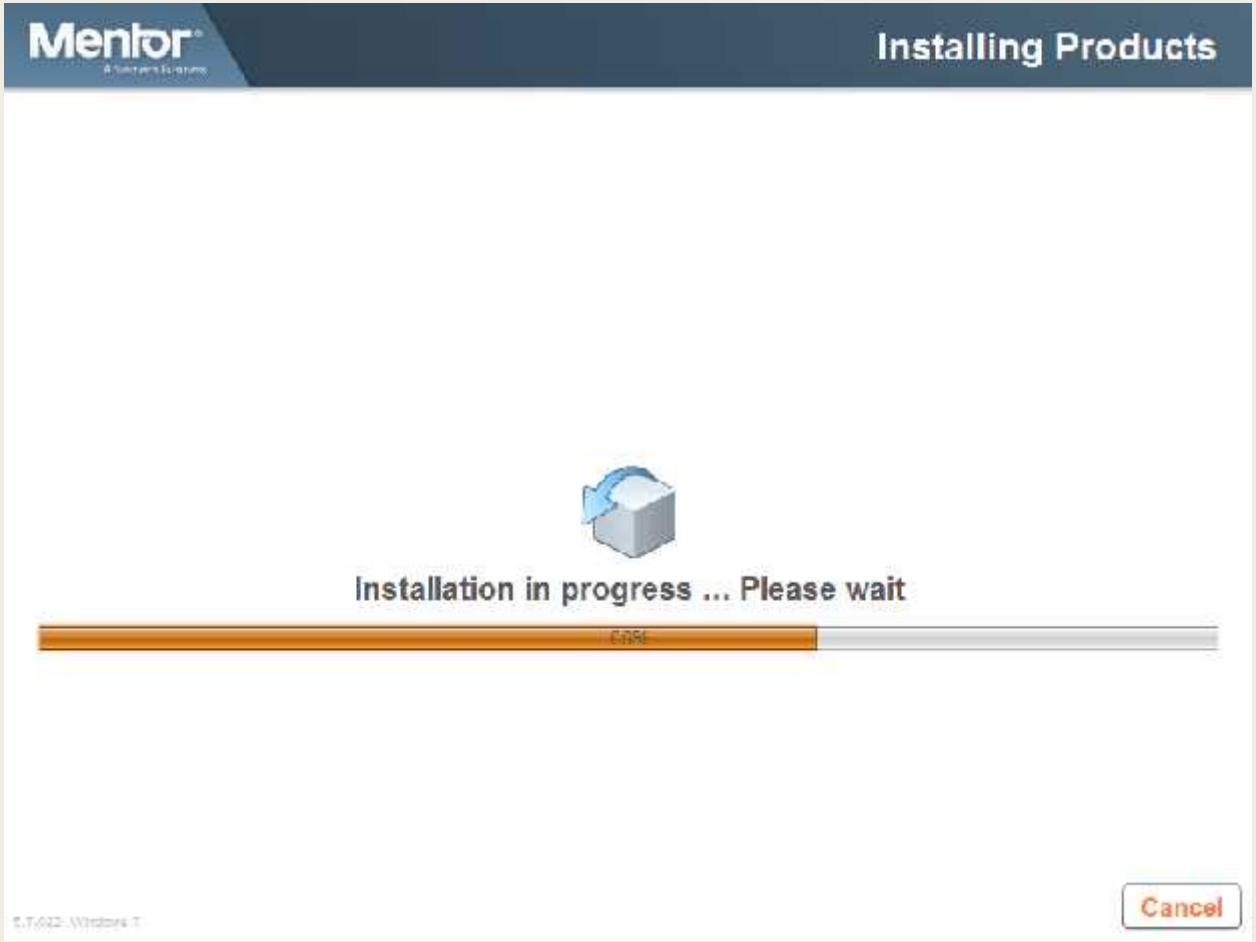
Step 2.


Mentor
Source and Target
Select a target location:
C:\modeltech64_10.5d
Browse
Back
Next

Step 3.


Mentor
License Agreement
End User License Agreement
The latest version of the End User License Agreement
is available on-line at www.mentor.com/eula
IMPORTANT INFORMATION
USE OF ALL SOFTWARE IS SUBJECT TO LICENSE
RESTRICTIONS. CAREFULLY READ THIS LICENSE AGREEMENT
BEFORE USING THE PRODUCTS. USE OF SOFTWARE INDICATES
CUSTOMER'S COMPLETE AND UNCONDITIONAL ACCEPTANCE OF
THE TERMS AND CONDITIONS SET FORTH IN THIS
AGREEMENT. ANY ADDITIONAL OR DIFFERENT PURCHASE
ORDER TERMS AND CONDITIONS SHALL NOT APPLY.
END-USER LICENSE AGREEMENT ("Agreement")
This is a legal agreement concerning the use of
Software (as defined in Section 2) and hardware
(collectively "Products") between the company
acquiring the Products ("Customer"), and the Mentor
Graphics entity that issued the corresponding
quotation or, if no quotation was issued, the
applicable local Mentor Graphics entity ("Mentor
Graphics"). Except for license agreements related to
Save
Print
Having read the entire license, do you agree as an authorized representative to the terms of this legally enforceable agreement? If you select "Disagree," the software will not install. Selecting "Agree" means you agree to be bound by the terms of this license.
Disagree
Agree

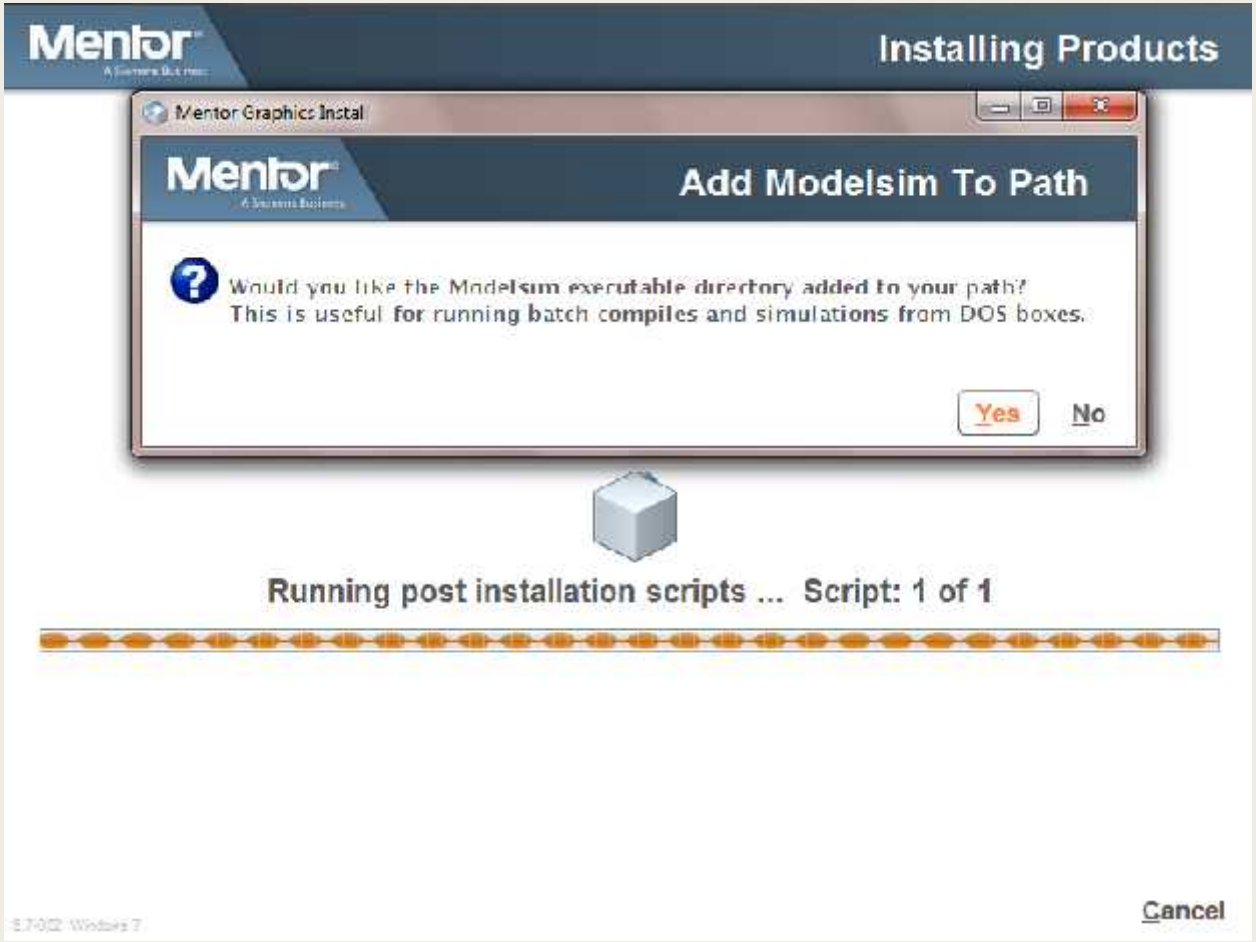
Step 4.


Mentor
Installing Products
Installation in progress ... Please wait
Cancel

Step 5.


Mentor
Installing Products
Mentor Graphics Install
Mentor
ModelSim Desktop Shortcut
Would you like a shortcut to ModelSim placed on your desktop?
Yes
No
Running post installation scripts ... Script: 1 of 1
Cancel

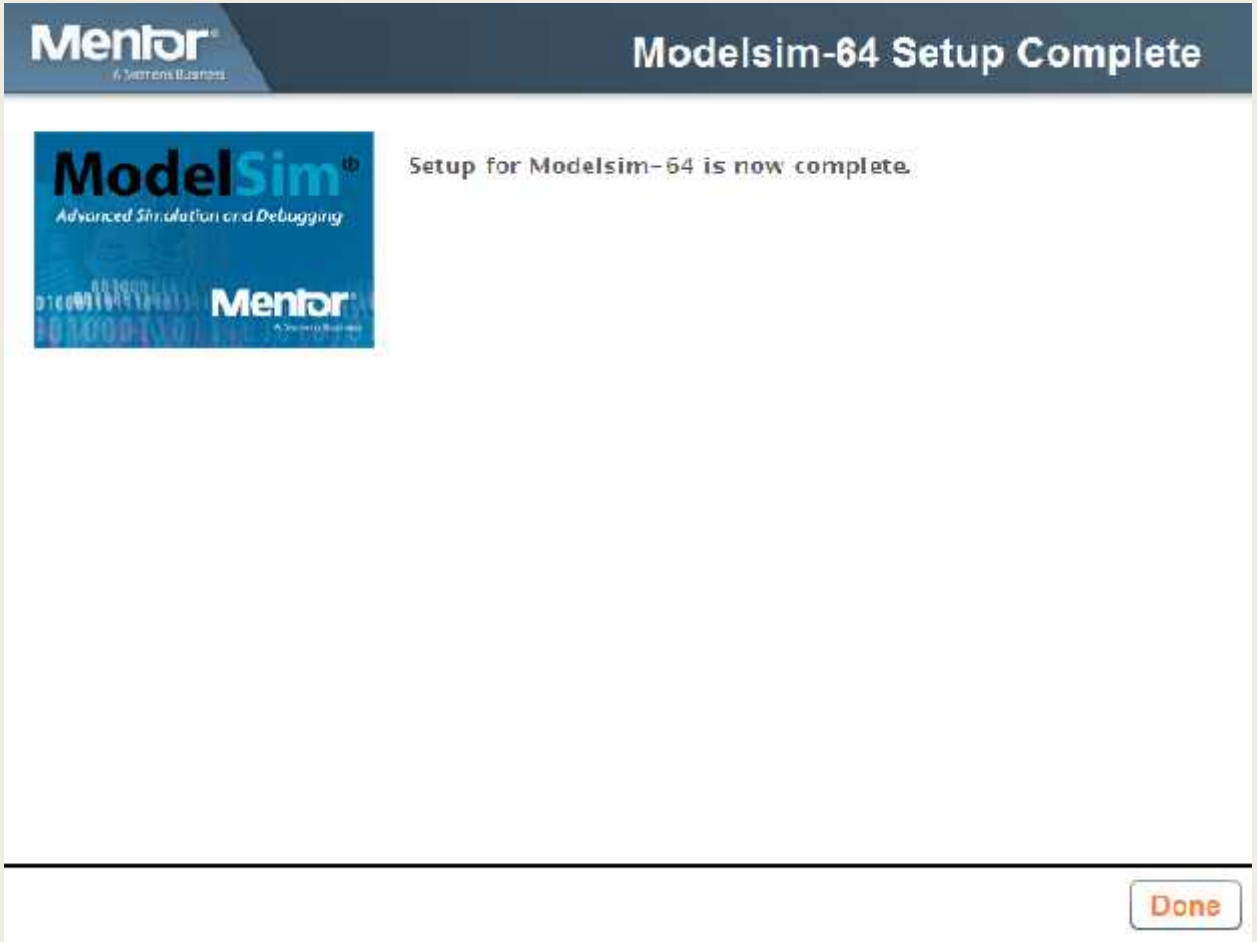
Step 6.


Mentor
Installing Products
Mentor Graphics Instal
Mentor
Add Modelsim To Path
Would you like the Modelsim executable directory added to your path?
This is useful for running batch compiles and simulations from DOS boxes.
Yes
No
Running post installation scripts ... Script: 1 of 1
Cancel

Step 7.


Mentor
Install Hardware Security Key Driver
ModelSim
Advanced Simulation and Debugging
Mentor
Do you have a HW security key attached to the parallel port or USB port on your computer to enable licensing?
If you get your license from another machine or use an ethernet address for your license, you should choose "No". If you do have a HW security key it requires a software driver.
Choose "Yes" to install the drivers for the hardware keys that can be used with Modelsim-64. We recommend you choose "Yes" if you are not certain that your driver is up-to-date.
If you choose "Yes", you will need to RESTART your computer after completing Modelsim-64 installation.
NOTES:
If you already have older drivers installed on this computer then the installation program will uninstall those and will automatically install the new drivers after you reboot your computer.
If prompted, please select the default responses.
Yes
No

Step 8.


Mentor
Modelsim-64 Setup Complete
ModelSim
Advanced Simulation and Debugging
Mentor
Setup for Modelsim-64 is now complete.
Done

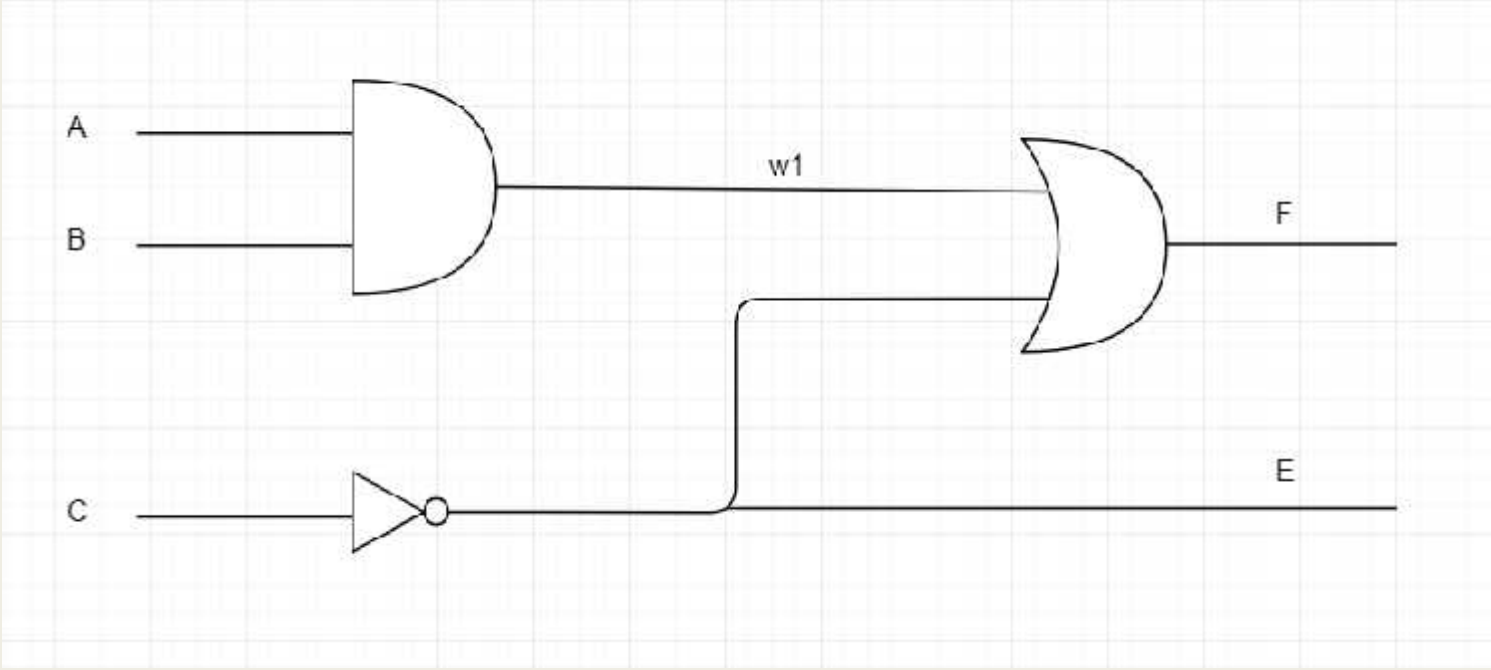
Adding License 1.

1. محتویات پوشه Keygen را در محل نصب نرم افزار (به طور پیش‌فرض C:\modeltech64_10.6d\win64 یا C:\modeltech_10.2c\win32) کپی کنید.
2. فایل patch64_dll.bat را به صورت Run as Administrator اجرا کنید.
3. Keygen شروع به Scan کردن پروژه‌ها و ماژول‌های برنامه‌های نصب شده کرده و بعد از مدتی یک صفحه Notepad برای شما تحت عنوان LICENSE.TXT باز می‌شود.
4. در درایو C یک پوشه به نام flexlm بسازید.
5. فایل LICENSE.TXT باز شده را Save As کرده و تحت عنوان license.dat در آدرس C:\flexlm ذخیره کنید.

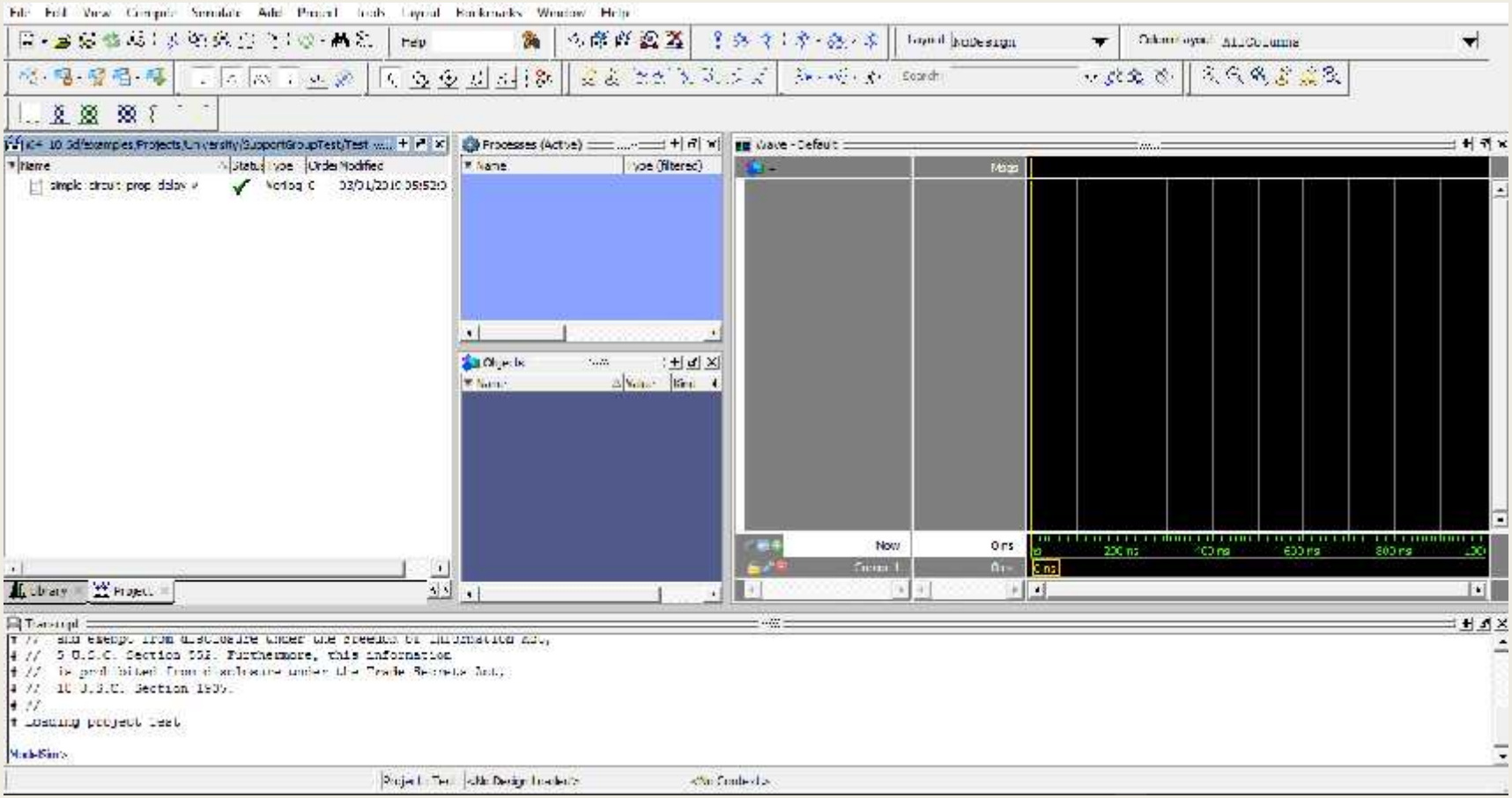
Adding License 2.

6. وارد مسیر Control Panel -> System and Security -> System -> Advanced system settings -> Advanced -> Enviroment Variables شوید. در قسمت Systemگزینه Newرا زده و اطلاعات زیر را وارد کنید:
   1. **Variable name:** MGLS_LICENSE_FILE
      Variable value: C:\flexlm\license.dat
   2. **Variable name:** LM_LICENSE_FILE
      Variable value: C:\flexlm\license.dat
7. فایل Install.exeرا از مسیر C:\MentorGraphics\Installاجرا کنید.
8. در پنجره باز شده Manage Licensingو سپس Configure Licensingرا بزنید.
9. در پنجره باز شده Import License Fileرا زده و آدرس فایل C:\flexlm\license.datرا بدهید.

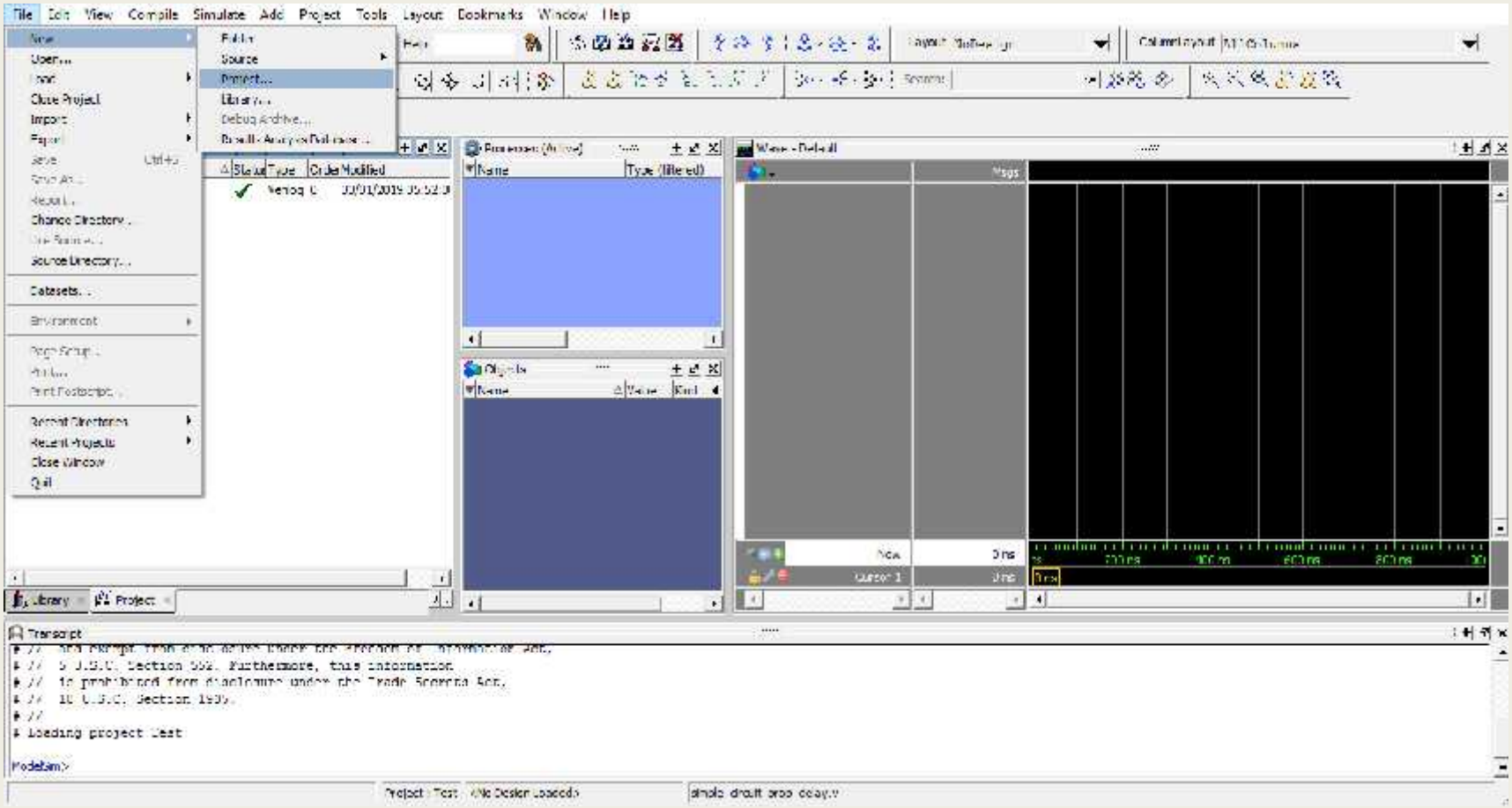
Example => Implement, Compile, Simiulate



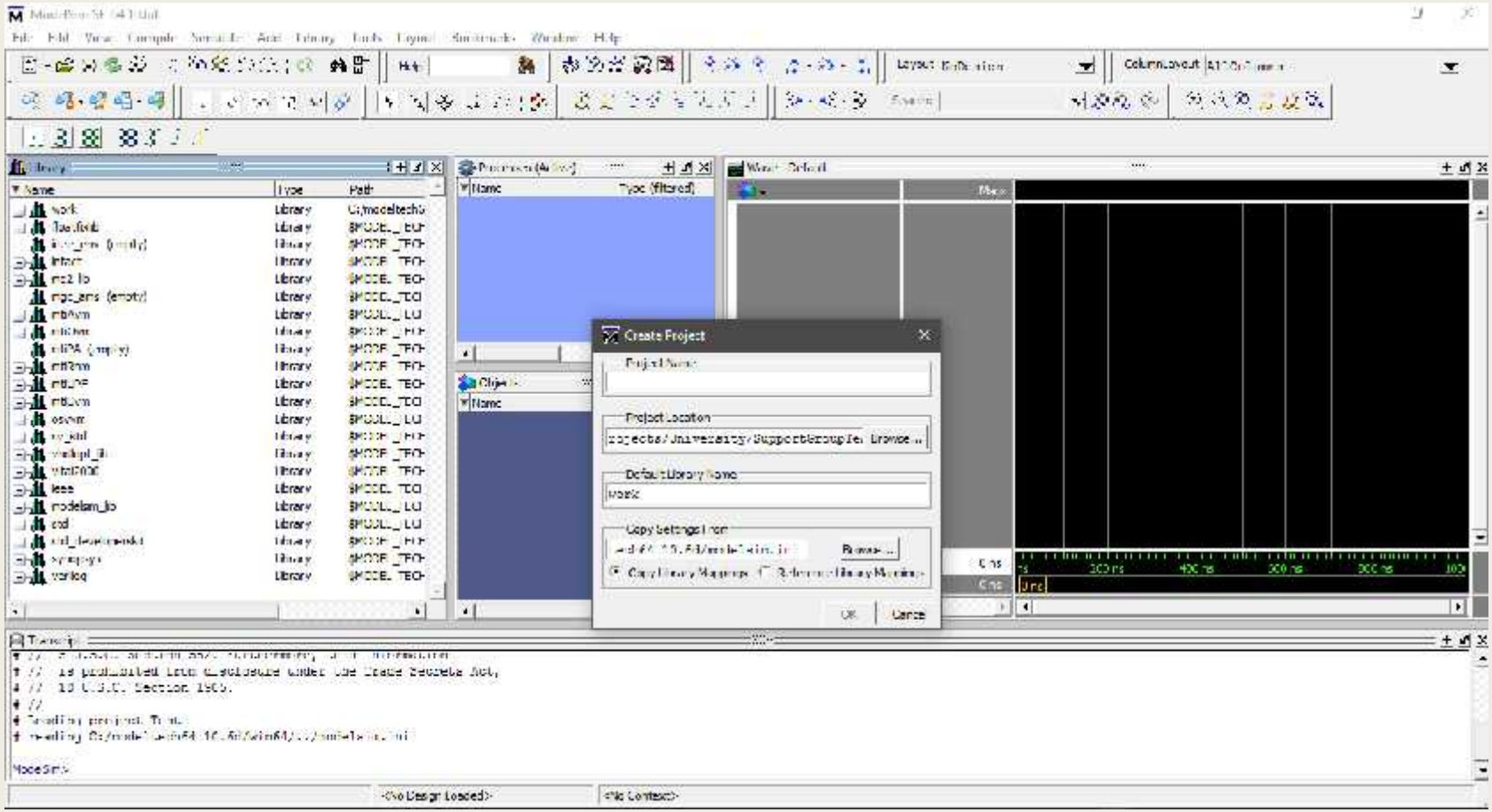
ModelSim Environment



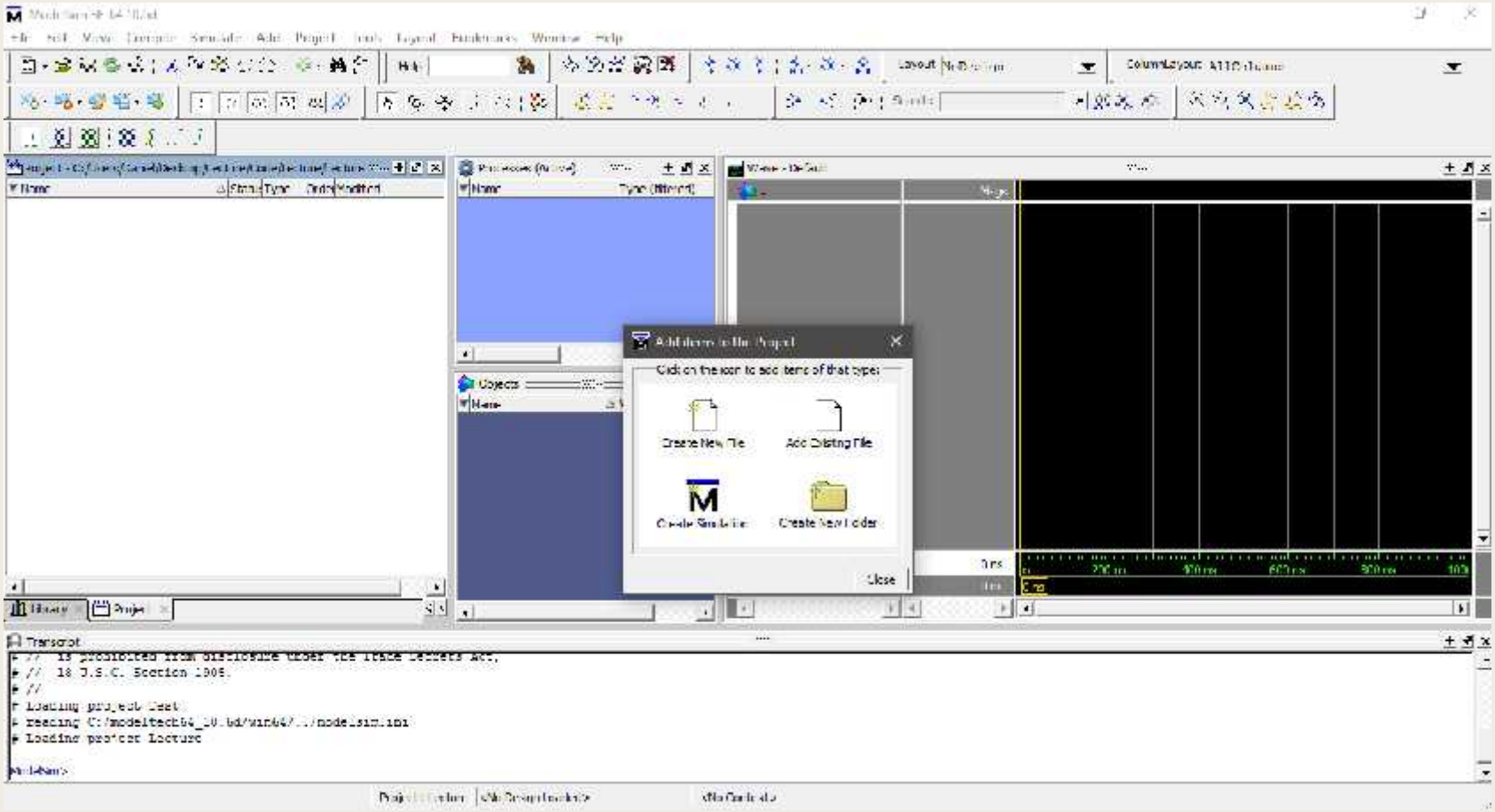
Step 1.


File Edit View Compile Simulate Add Project Tools Layout Bookmarks Window Help
New
Open...
Close Project
Import
Export
Change Directory...
Source Directory...
Datasets...
Environment
Recent Directories
Recent Projects
Close Window
Quit
Source
Project...
Library...
Debug Archive...
Status Type Order Modified
Name Type (filtered)
Msgs
Now
Cursor 1
Transcript
Loading project test
ModelSim>

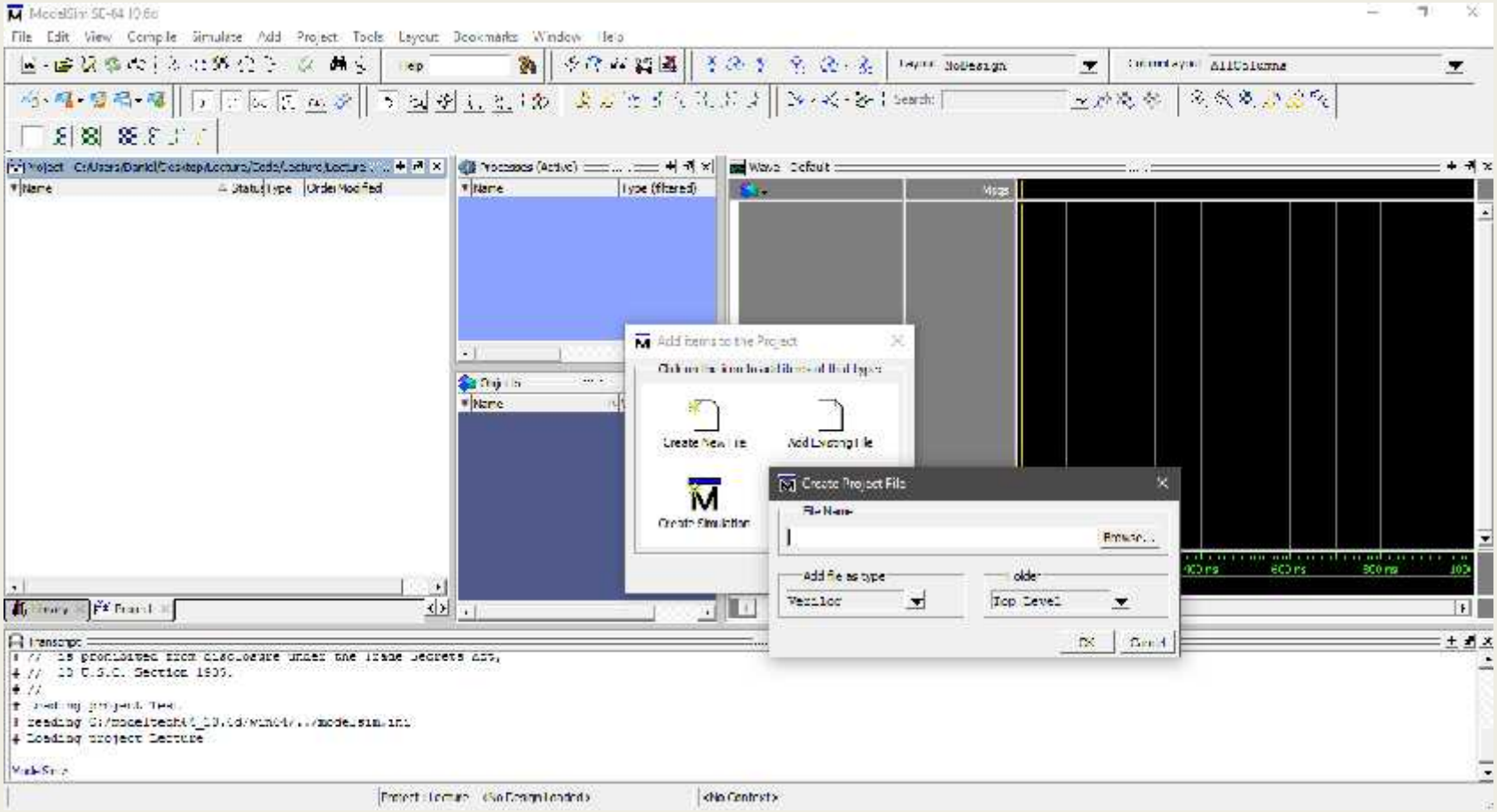
Step 2.


Create Project
Project Location
Default Library Name
work
OK
Cancel

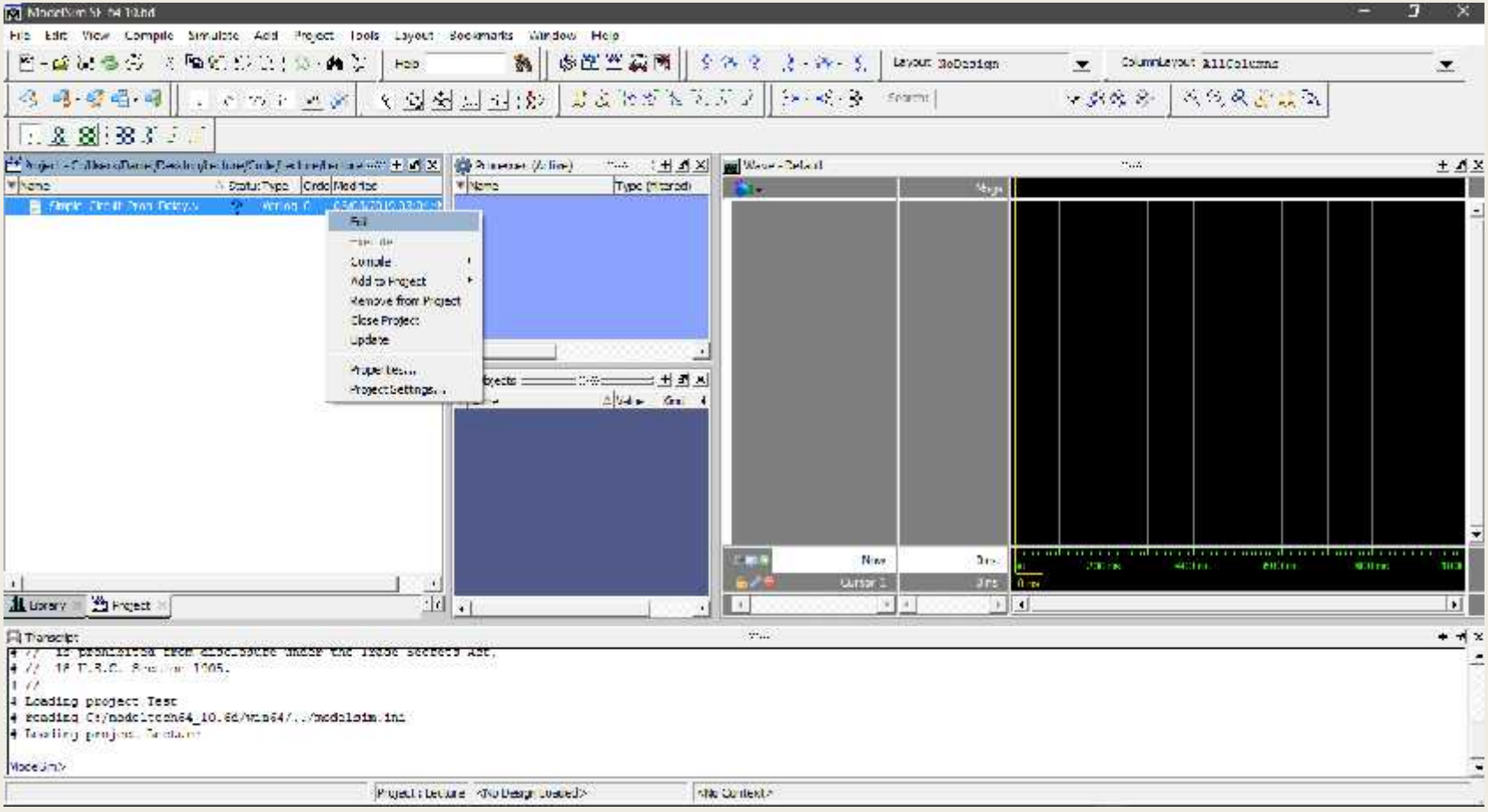
Step 3.


Add Items to the Project
Click on the icon to add items of that type:
Create New File
Add Existing File
Create New Folder
Close
Transcript
Loading project Lecture

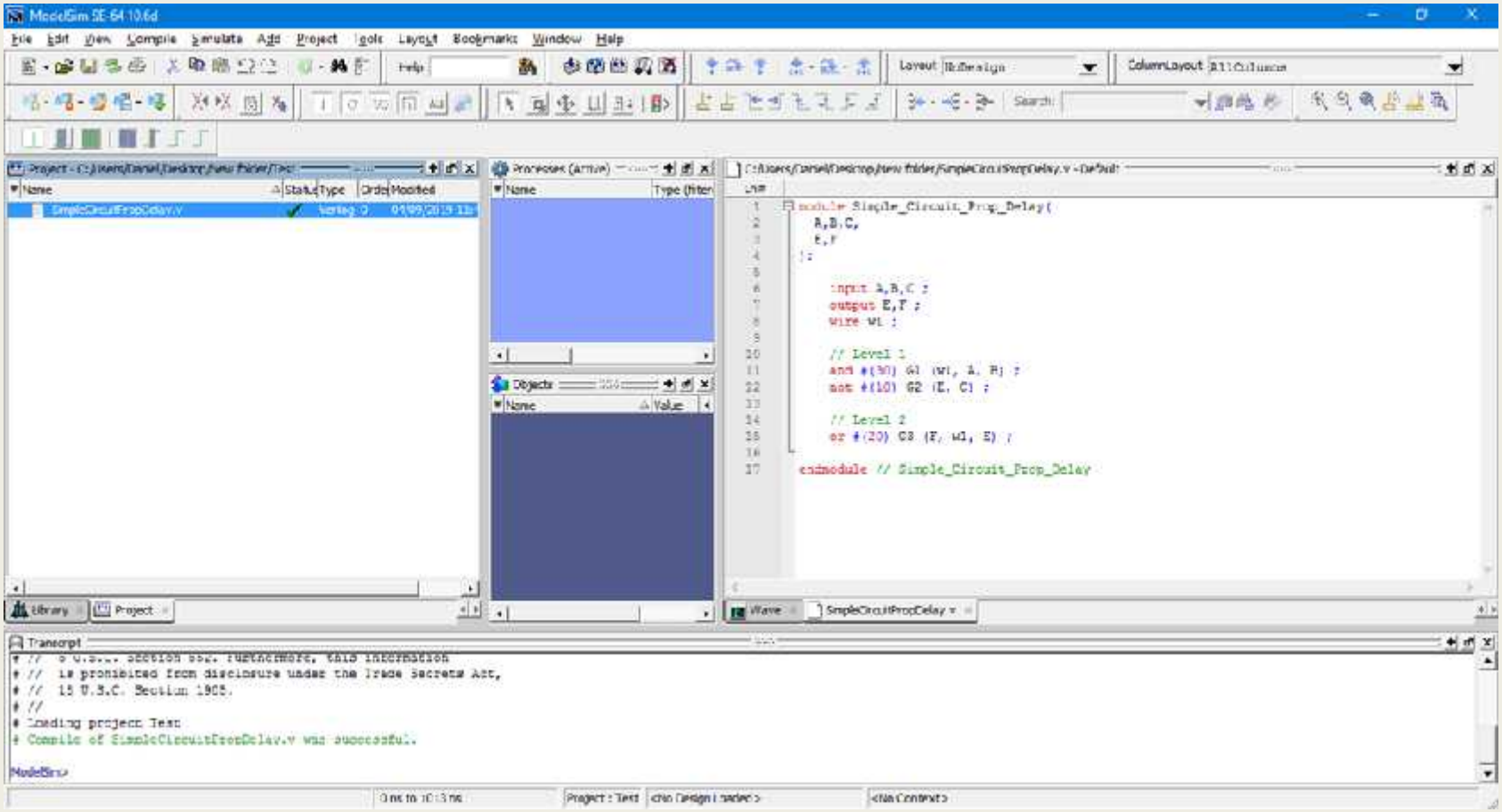
Step 4.


File Edit View Compile Simulate Add Project Tools Layout Bookmarks Window Help
Add Items to the Project
Create New File
Add Existing File
Create Simulation
Create Project File
File Name
Browse...
Add File as type
Folder
Top Level
OK
Cancel

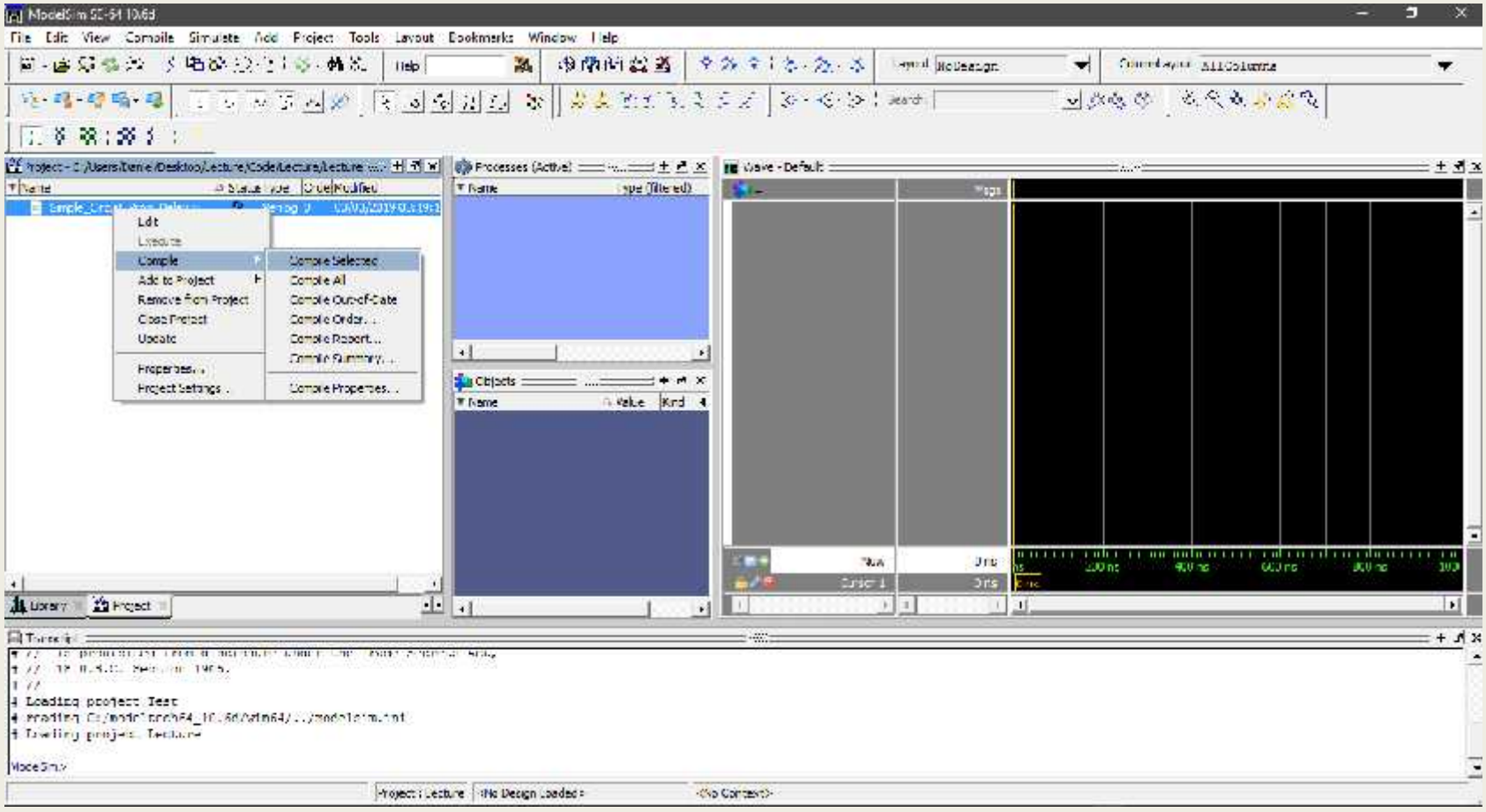
Step 5.


Edit
Compile
Add to Project
Remove from Project
Close Project
Update
Project Settings...
Library
Project
Transcript
Loading project Test

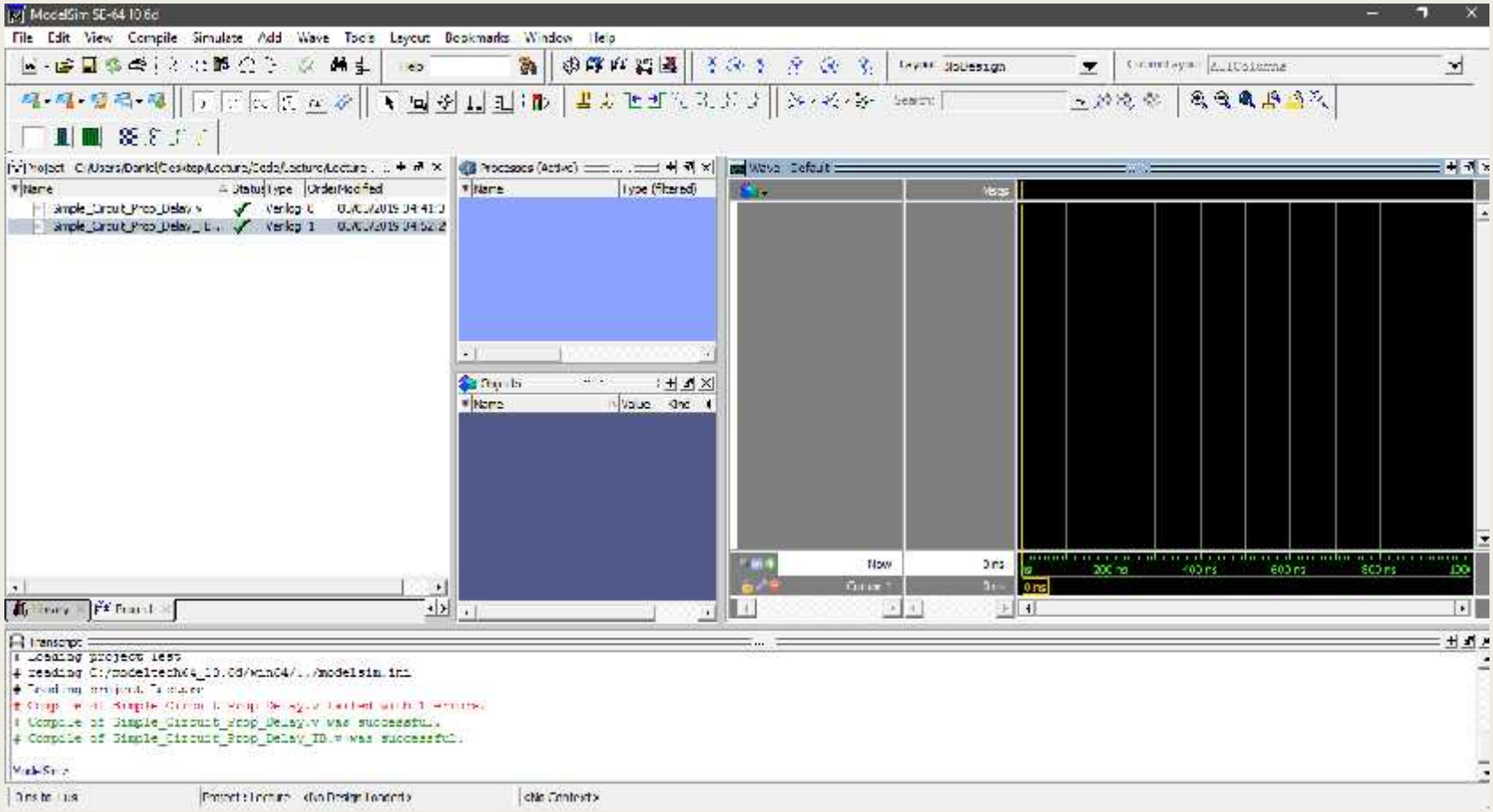
Step 6.


ModelSim SE-64 10.6d
File Edit View Compile Simulate Add Project Tools Layout Bookmarks Window Help
Project
Name
Status
Type
Order
Modified
SimpleCircuitPropDelay.v
Processes (active)
Objects
Name
Value
module Simple_Circuit_Prop_Delay(
A,B,C,
E,F
);
input A,B,C ;
output E,F ;
wire W1 ;
// Level 1
and #(30) G1 (W1, A, B) ;
not #(10) G2 (E, C) ;
// Level 2
or #(20) G3 (F, W1, E) ;
endmodule // Simple_Circuit_Prop_Delay
Library
Project
Wave
SimpleCircuitPropDelay.v
Transcript
// 15 U.S.C. Section 1905.
//
Loading project Test
Compile of SimpleCircuitPropDelay.v was successful.
ModelSim>

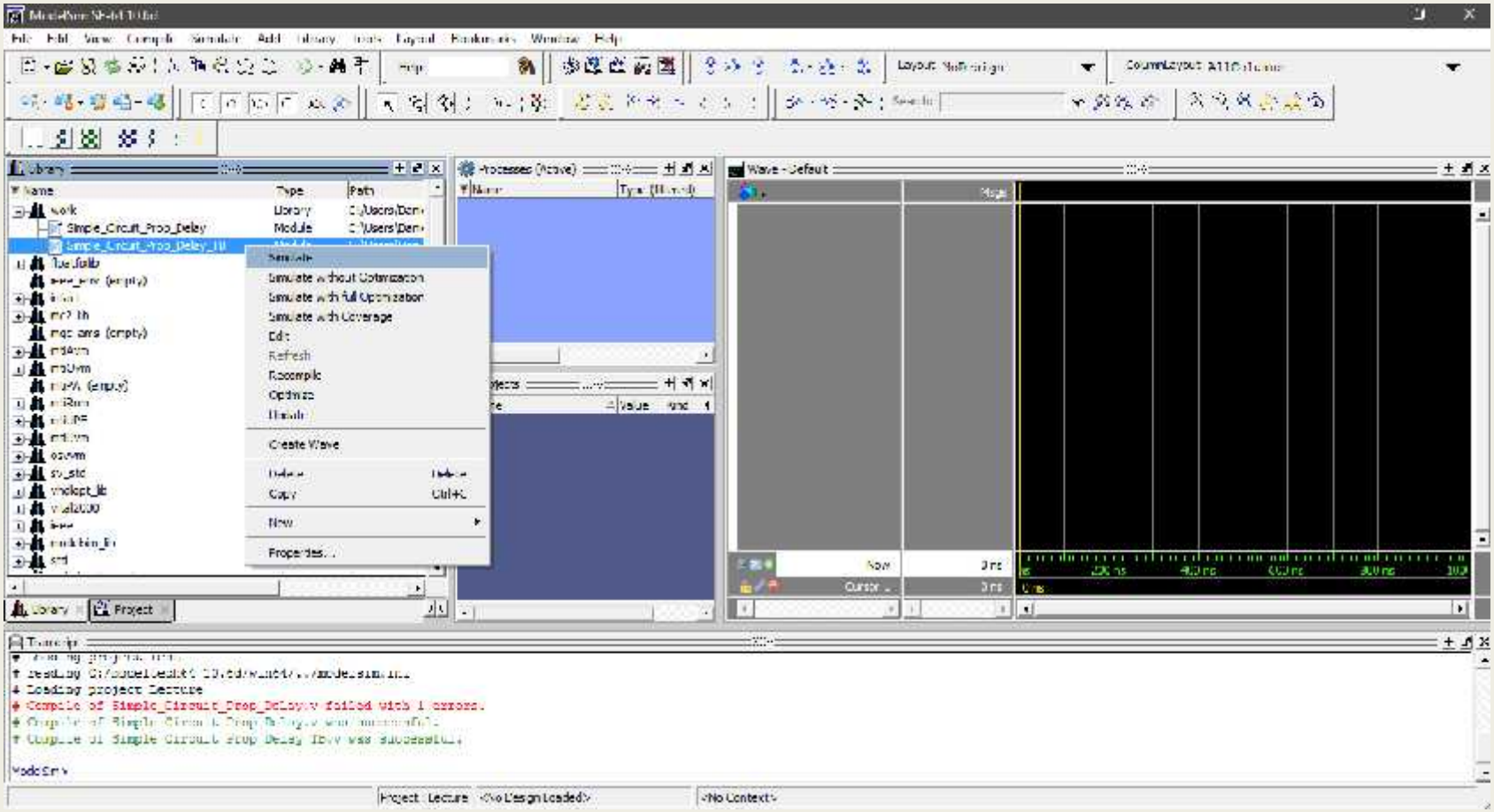
Step 7.


File Edit View Compile Simulate Add Project Tools Layout Bookmarks Window Help
Edit
Compile
Add to Project
Remove from Project
Clean Project
Update
Properties...
Project Settings...
Compile Selected
Compile All
Compile Out-of-Date
Compile Order...
Compile Report...
Compile Summary...
Compile Properties...
Processes (Active)
Objects
Wave - Default
Library
Project
Loading project Test
Project : Lecture
No Design Loaded

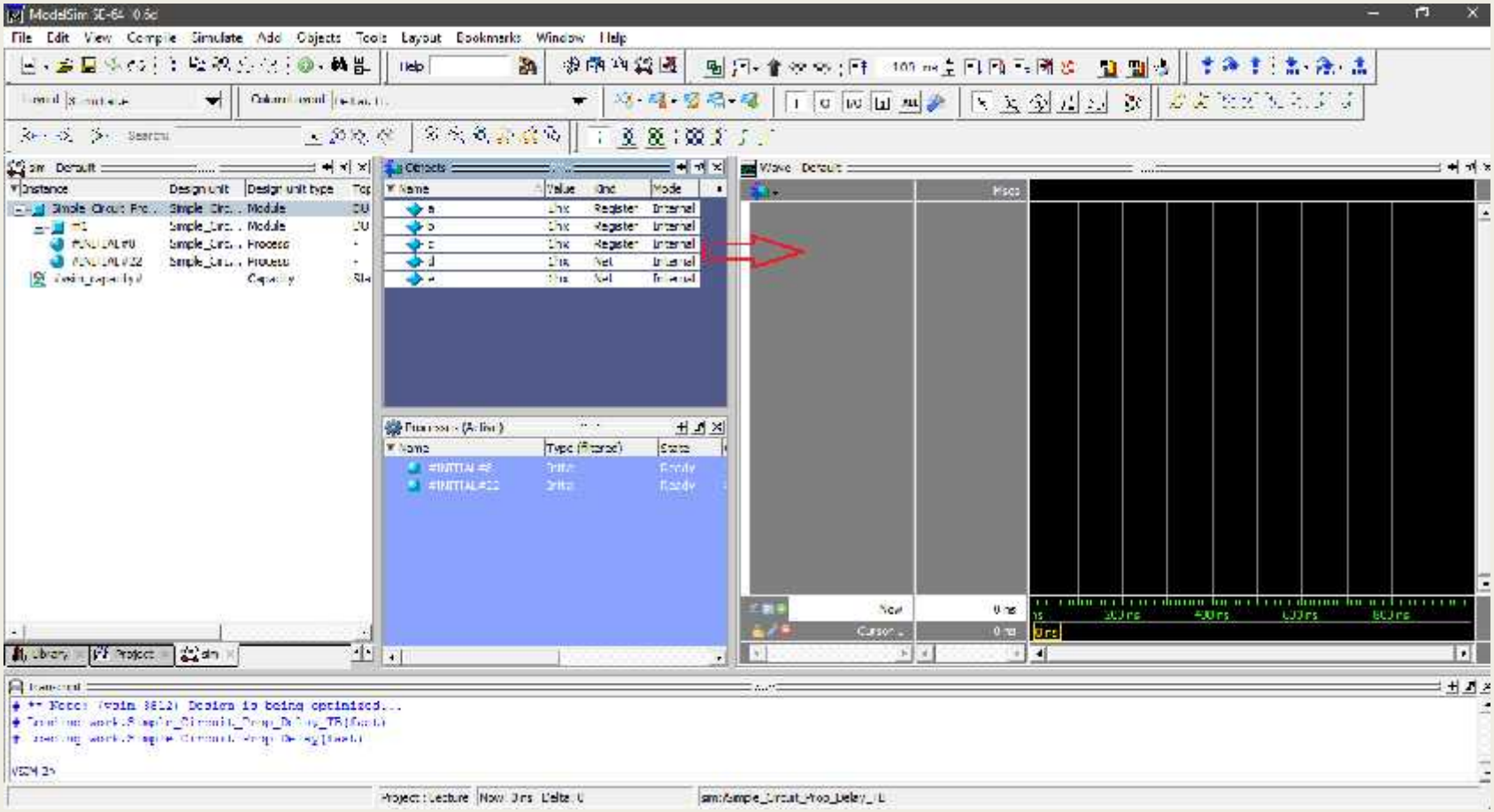
Step 8.


ModelSim SE-64 10.6c
File Edit View Compile Simulate Add Wave Tools Layout Bookmarks Window Help
Transcript
Loading project test
Reading C:/modeltech64_10.6d/win64/../modelsim.ini
Compile of Simple_Circuit_Prop_Delay.v was successful.
Compile of Simple_Circuit_Prop_Delay_TB.v was successful.

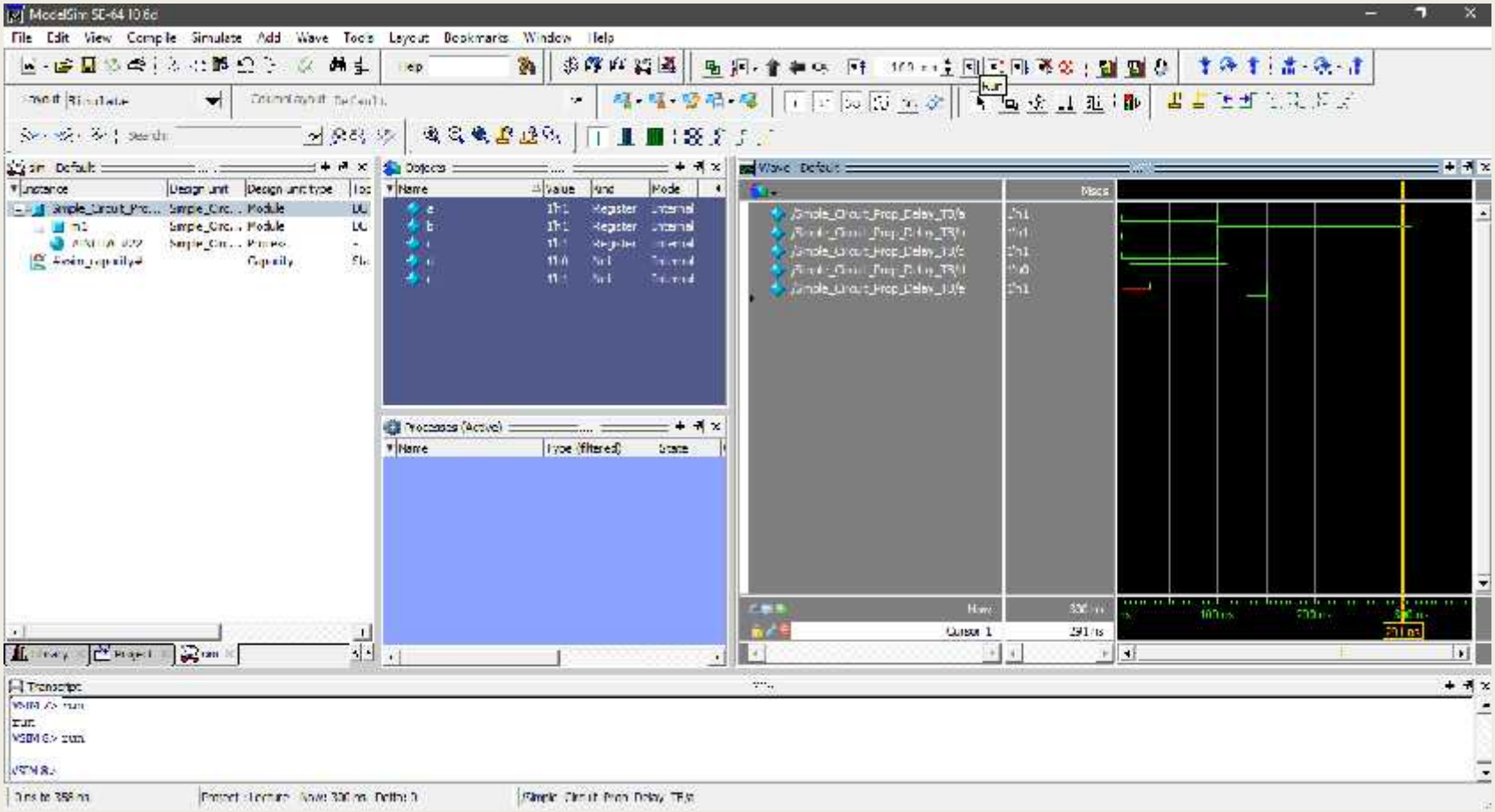
Step 9.


Simulate
Simulate without Optimization
Simulate with Full Optimization
Simulate with Coverage
Edit
Refresh
Recompile
Optimize
Create Wave
Copy
New
Properties...
Wave - Default
Loading project Lecture
Project : Lecture
<No Design Loaded>
<No Context>

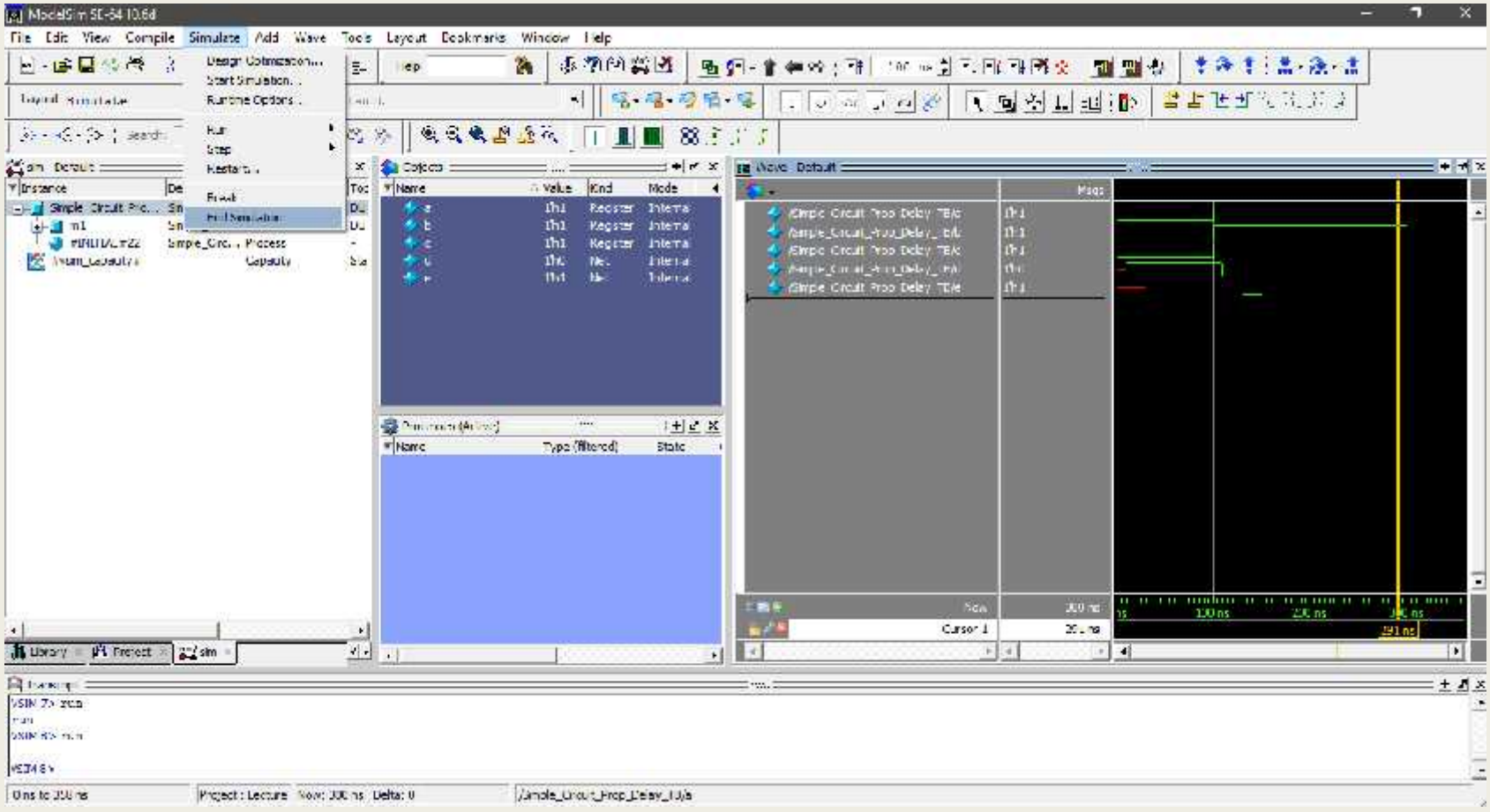
Step 10.


File Edit View Compile Simulate Add Objects Tools Layout Bookmarks Window Help
Instance
Design unit
Design unit type
Name
Value
Kind
Mode
Wave - Default
Now
Cursor 1

Step 11.


ModelSim SE-64 10.6c
File Edit View Compile Simulate Add Wave Tools Layout Bookmarks Window Help
Objects
Name
Value
Kind
Mode
Processes (Active)
Name
Type (filtered)
State
Wave - Default
Msgs
Now
Cursor 1
Transcript

Step 12.


File Edit View Compile Simulate Add Wave Tools Layout Bookmarks Window Help
Design Optimization...
Start Simulation...
Runtime Options...
Run
Step
Restart...
Break
End Simulation
Instance
Objects
Name
Value
Kind
Mode
Wave - Default
Msgs
Now
Cursor 1
Library
Project
sim

THANKS 4 YOUR ATTENTION

-- The End --