LAB 3

LABWORK

Design a circuit with:

4 of 8 bit Register (Flipflop)

1 of 8 bit adder

3 of 8 bit 4 optional MUX

4 of 8 bit 2 optional MUX

1 of 8 bit Unidirectional Tri-BUS

and necessary controller signals and inputs/outputs to do add operation.

Timeline:

T: load data to Register A (A0 Hex)

T+1: load data to Register B (0B Hex)

T+2: add the data in register A and register B to Register C

T+3: Show output of register C

T+4: load data to Register D (06Hex)

T+5: add the data in register C and register D to register C

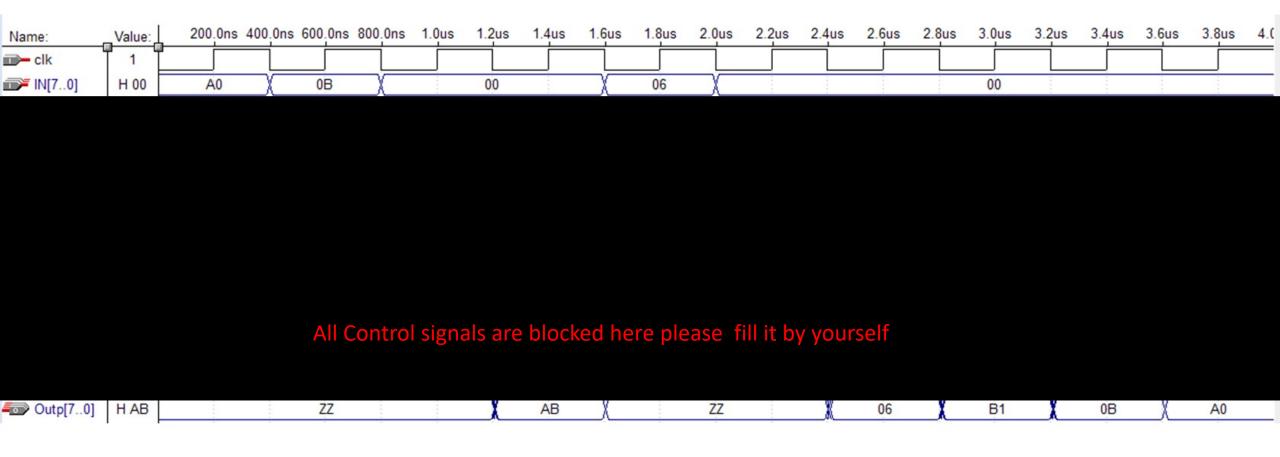
T+6: Show output of register D

T+7: Show output of register C

T+8: Show output of register B

T+9: Show output of register A

Example output



Set End time to 4us.(File-> End Time)

Grid size to 200ns (Options->Grid Size)

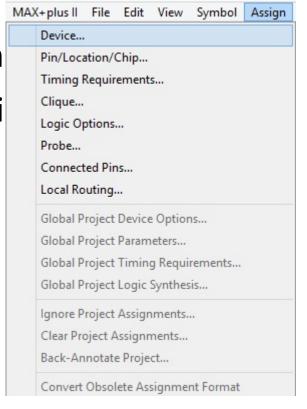
Possible Errors Part 1

Your project may not be fit in device so you should do those steps:

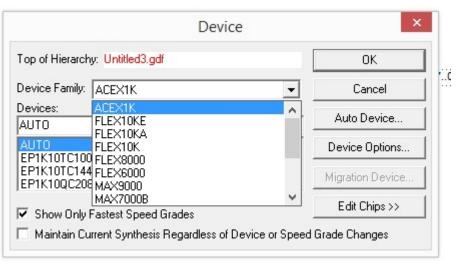
Select

Assign

1. Devi



Select
Device Family
ACEX1K

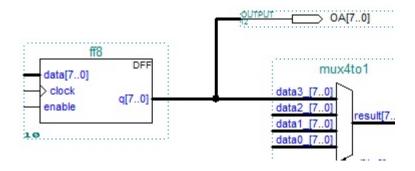


Possible Errors Part 2

You may get an error like this



Please add 4 outputs for 4 flip flops. Ie:

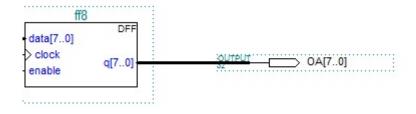


Possible Errors Part 3

If you put a 1 bit output for an 8 bit output it will give this error when you click save and check



You have to change line to bold and write the necessary bit value to end of the output/signal



Hint 1 Adding a Component: 8 Bit Register: Part 1

Enter Symbol Symbol Name: MegaWizard Plug-In Manager.. Symbol Libraries: c:\maxplus2\2017\lab3 c:\maxplus2\max2lib\prim c:\maxplus2\max2lib\mf c:\maxplus2\max2lib\mega_lpm Directory is: c:\maxplus2\2017\lab3 Symbol Files: Directories: add8 (∴ c:\ maxplus2 mux2to1 2017 mux4to1 A lab3 Drives **□** c: OK Cancel

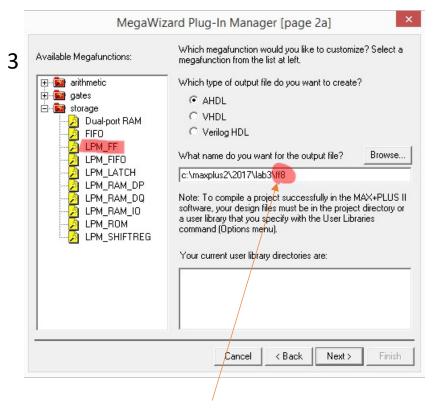
MegaWizard Plug-In Manager [page 1]

The MegaWizard Plug-In Manager helps you create or modify design files that contain custom variations of megafunctions.

Which action do you want to perform?

Create a new custom megafunction variation

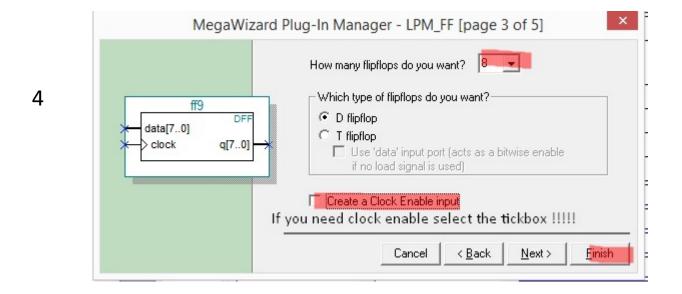
Ceptright 1988-2002 Altera Corporation



Please enter the path of your project file here

1

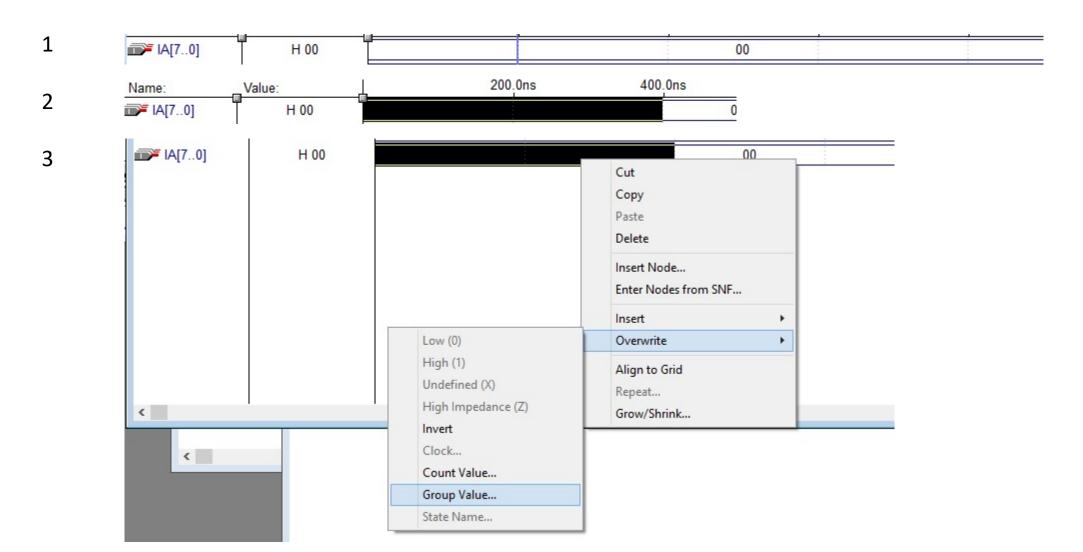
How to add 8 Bit Register: Part 2



 Add the other necessary components. Please read all the options in component window Carefully



Hint 2: Giving a value to signal simulation file Part 1



Hint 2: Giving a value to signal simulation file Part 2

