LAB 1. MUXES AND DECODERS

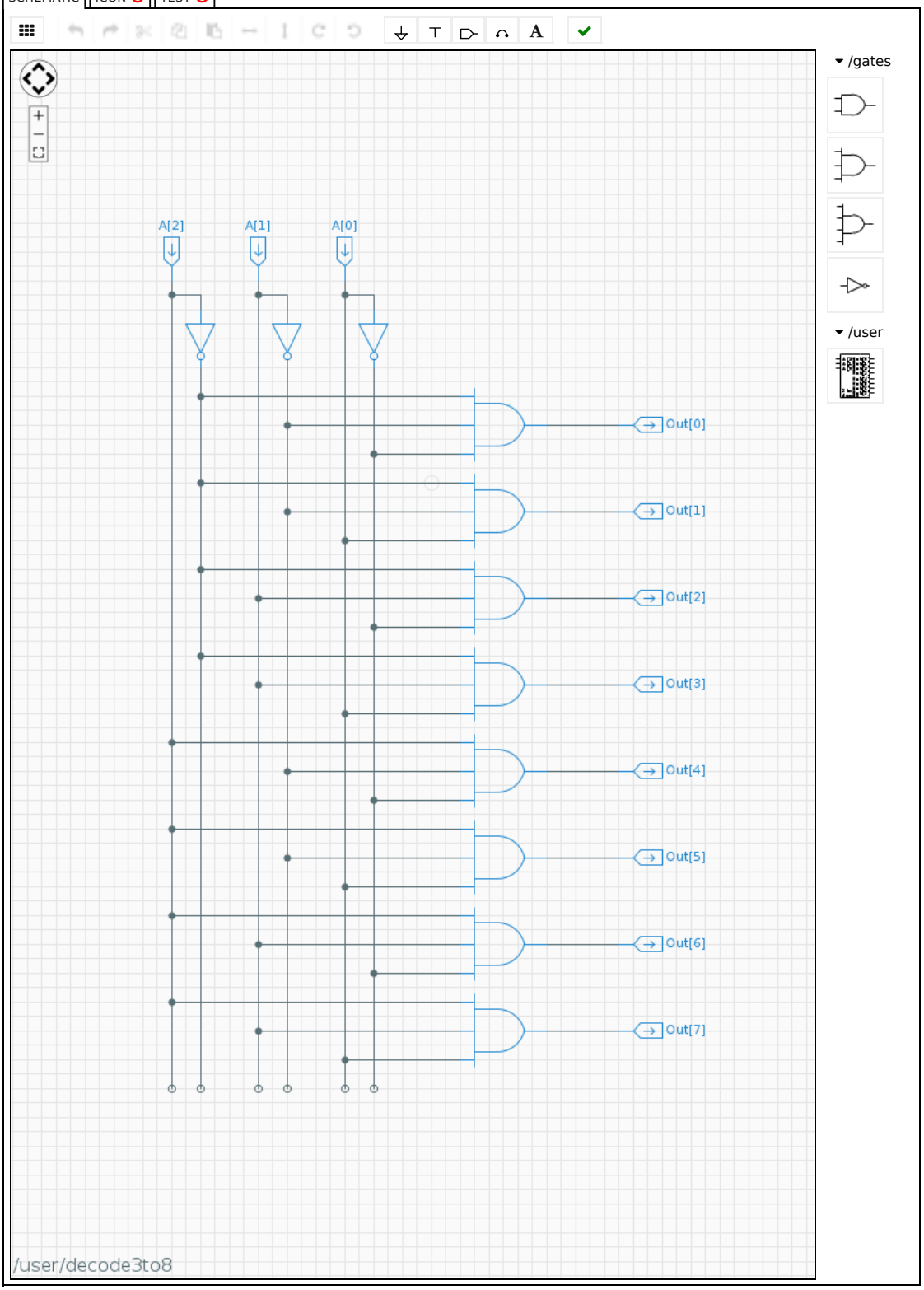
Design, only using **NOT** and **AND** gates, a 3-to-8 decoder and test it using the provided test file. You should have only **three (3)** NOT and **eight (8)** AND gates in your design.

After testing and checking, save this as a library component.

3 TO 8 DECODER (1/1 point)

Module: /user/decode3to8

SCHEMATIC ICON TEST



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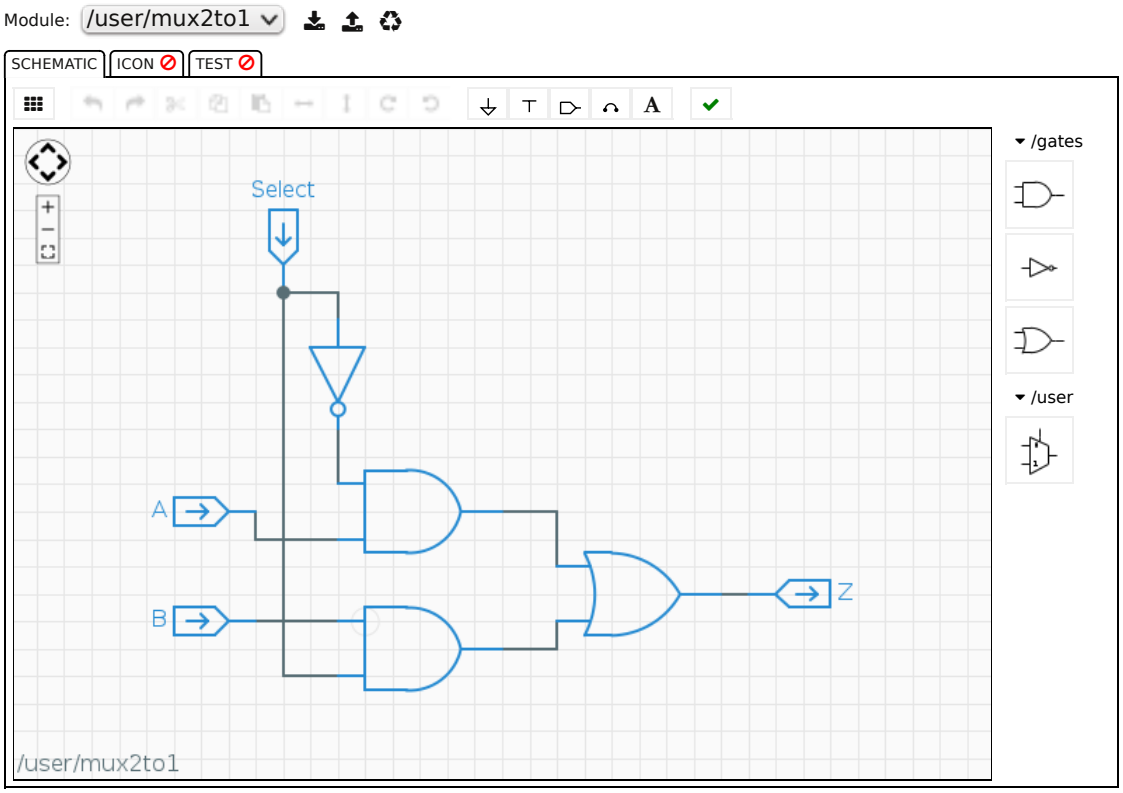
LAB 2. MUXES AND DECODERS

Design, using **NOT**, **AND**, and **OR** gates, a 1-bit 2-to-1 Mux and **test** it using the provided test file.

Treat A as the input which will be output to Z when Select is 0, and B as the input which will be output to Z when Select is 1.

After testing and checking, save this as a library component. You will need it for later labs!

2 TO 1 MULTIPLEXER (1/1 point)



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LAB 3. MUXES AND DECODERS

Design a 16-bit 2-to-1 Mux using **16** copies of your 1-bit library component and test it using the provided test file.

Treat A as the input which will be output to Z when Select is 0, and B as the input which will be output to Z when Select is 1.

You will need to load your previously designed "/user/mux2to1" component.

PLEASE NOTE: The 16-bit part we are designing now will show up in the /user/ parts area on the right. Make sure you are using the "/user/mux2to1" to build this lab! You can verify by checking the status text at the bottom of jade to see which part you are using.

After testing and checking, save this as a library component. You will need it for future labs!

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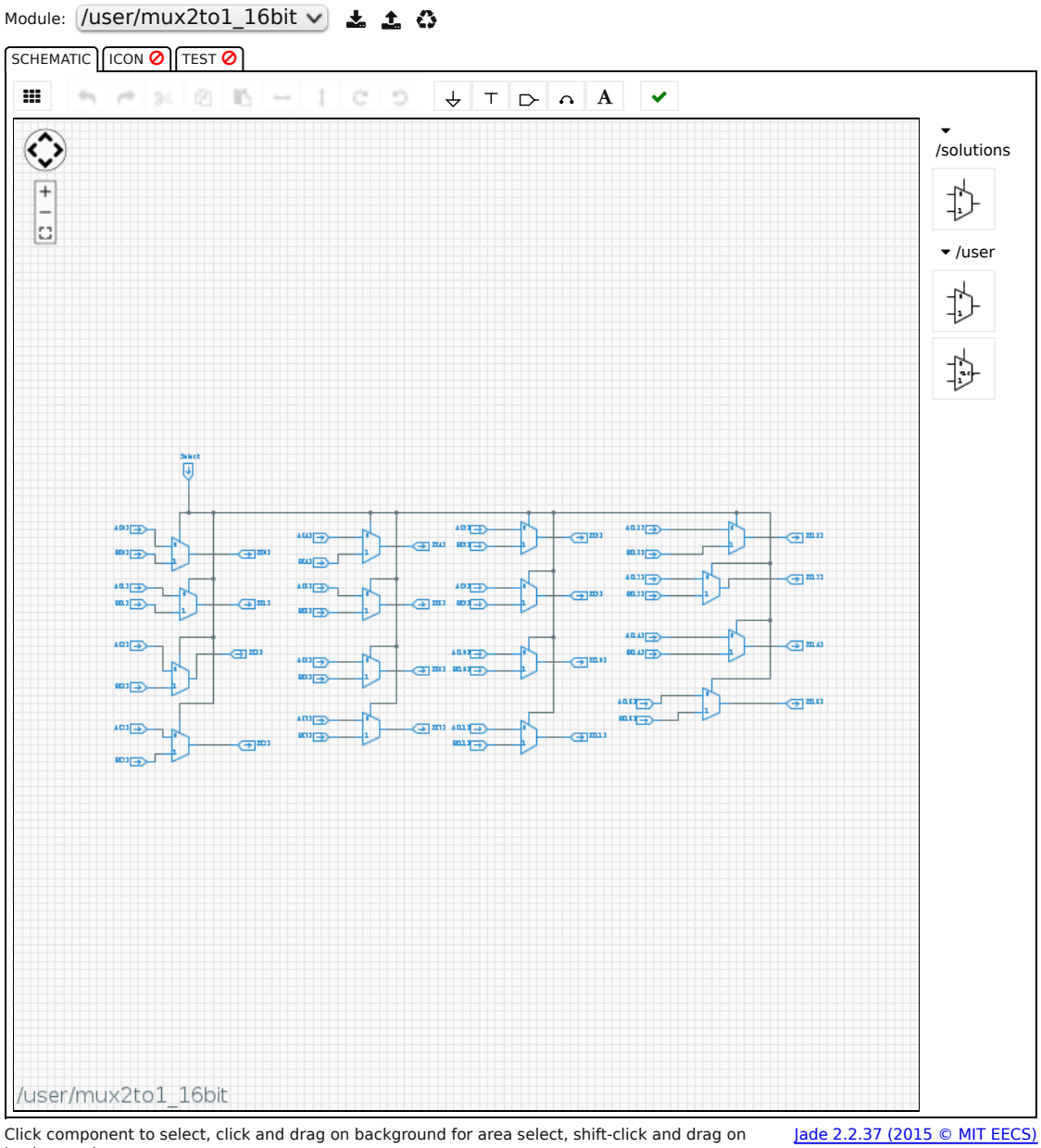
16-INPUT 2 TO 1 MULTIPLEXER (1/1 point)



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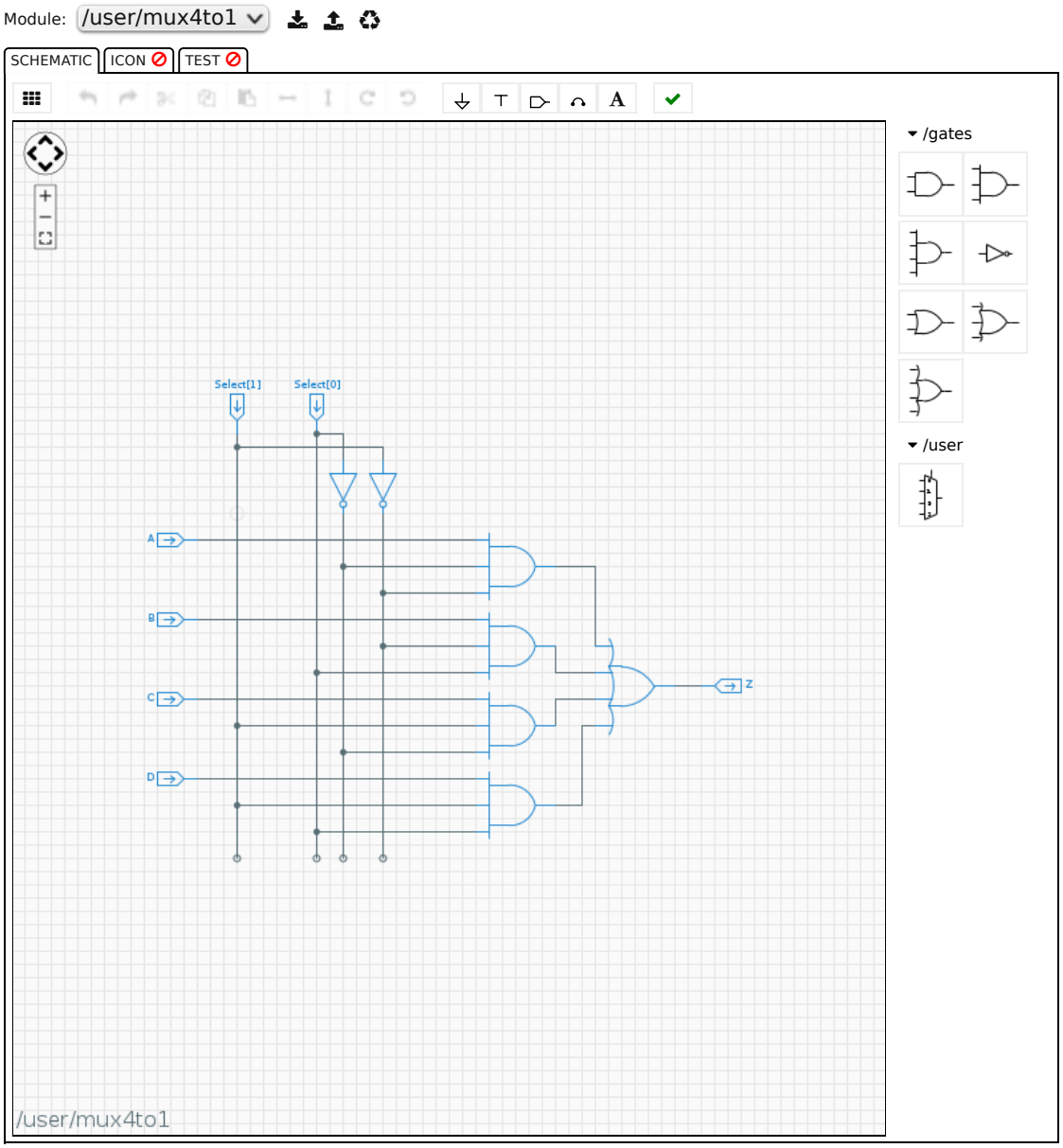
LAB 4. MUXES AND DECODERS

Design using **NOT**, **AND**, and **OR** gates a 1-bit 4-to-1 Mux and test it using the provided test file.

Treat A as the input to output to Z when Select[1:0] is 0, B when Select[1:0] is 1, C when Select[1:0] is 2, and D when Select[1:0] is 3.

After testing and checking, save this as a library component. You will want it for future labs!

4 TO 1 MULTIPLEXER (1/1 point)



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LAB 5. MUXES AND DECODERS

Design a 16-bit 4-to-1 Mux using **16** copies of your 1-bit library component and test it using the provided test file.

Treat A as the input to output to Z when Select[1:0] is 0, B when Select[1:0] is 1, C when Select[1:0] is 2, and D when Select[1:0] is 3.

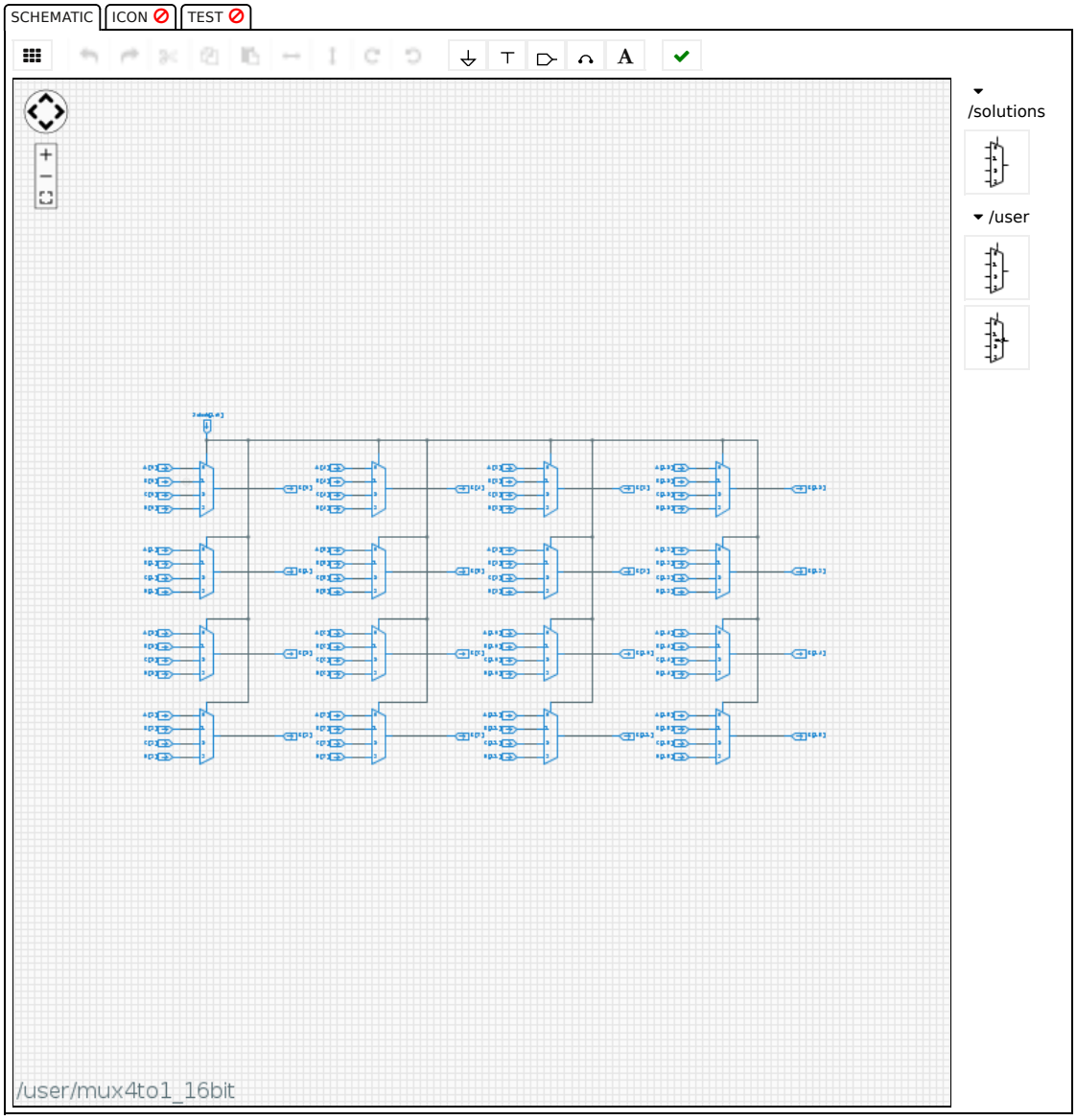
You will need to load your previously designed "/user/mux4to1" component.

PLEASE NOTE: The 16-bit part we are designing now will show up in the /user/ parts area on the right. Make sure you are using the "/user/mux4to1" to build this lab! You can verify by checking the status text at the bottom of jade to see which part you are using.

After testing and checking, save this as a library component.

16-INPUT 4 TO 1 MULTIPLEXER (1/1 point)

Module: /user/mux4to1_16bit



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