CPSC 240 Computer Organization and Assembly Language

Debug

First Program

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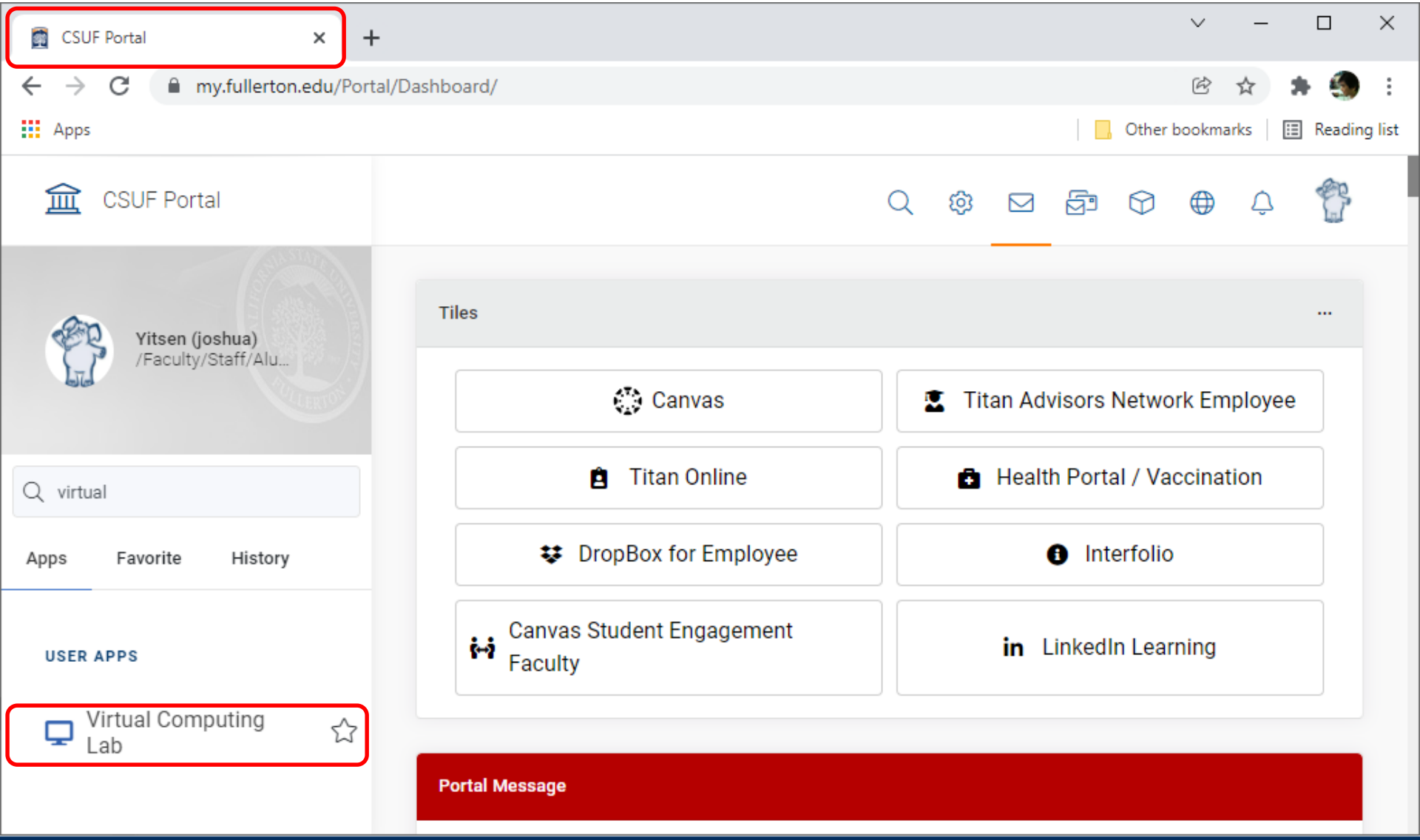
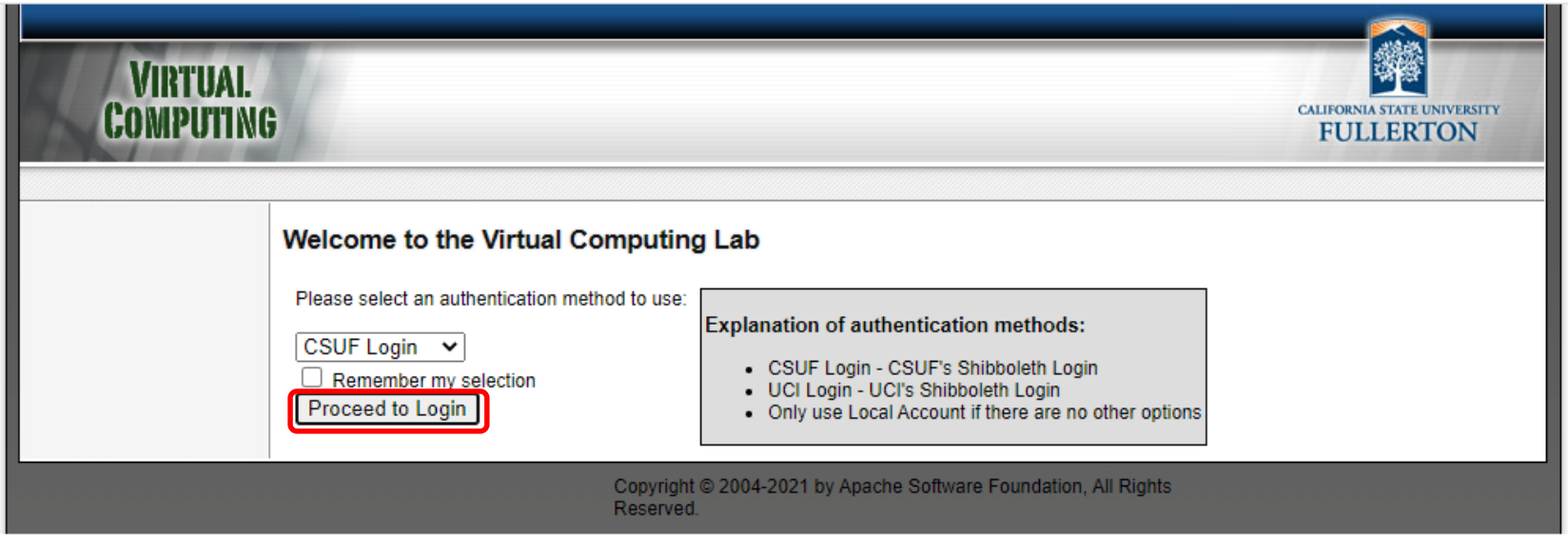
CALIFORNIA STATE UNIVERSITY
FULLERTON™

Open Ubuntu Tuffix on VCL

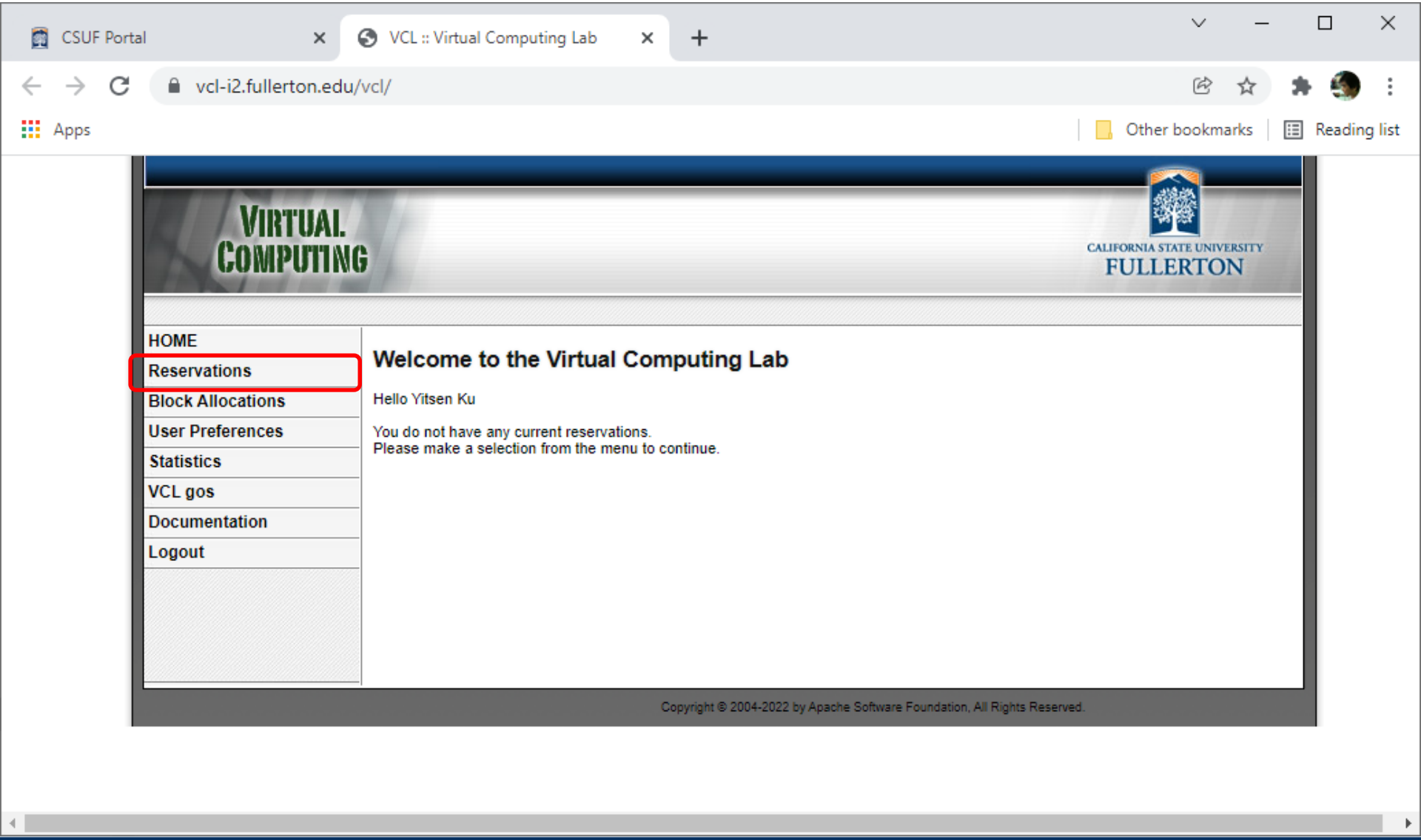
a. Search "Virtual" in Portal, and click "Virtual Computing Lab".



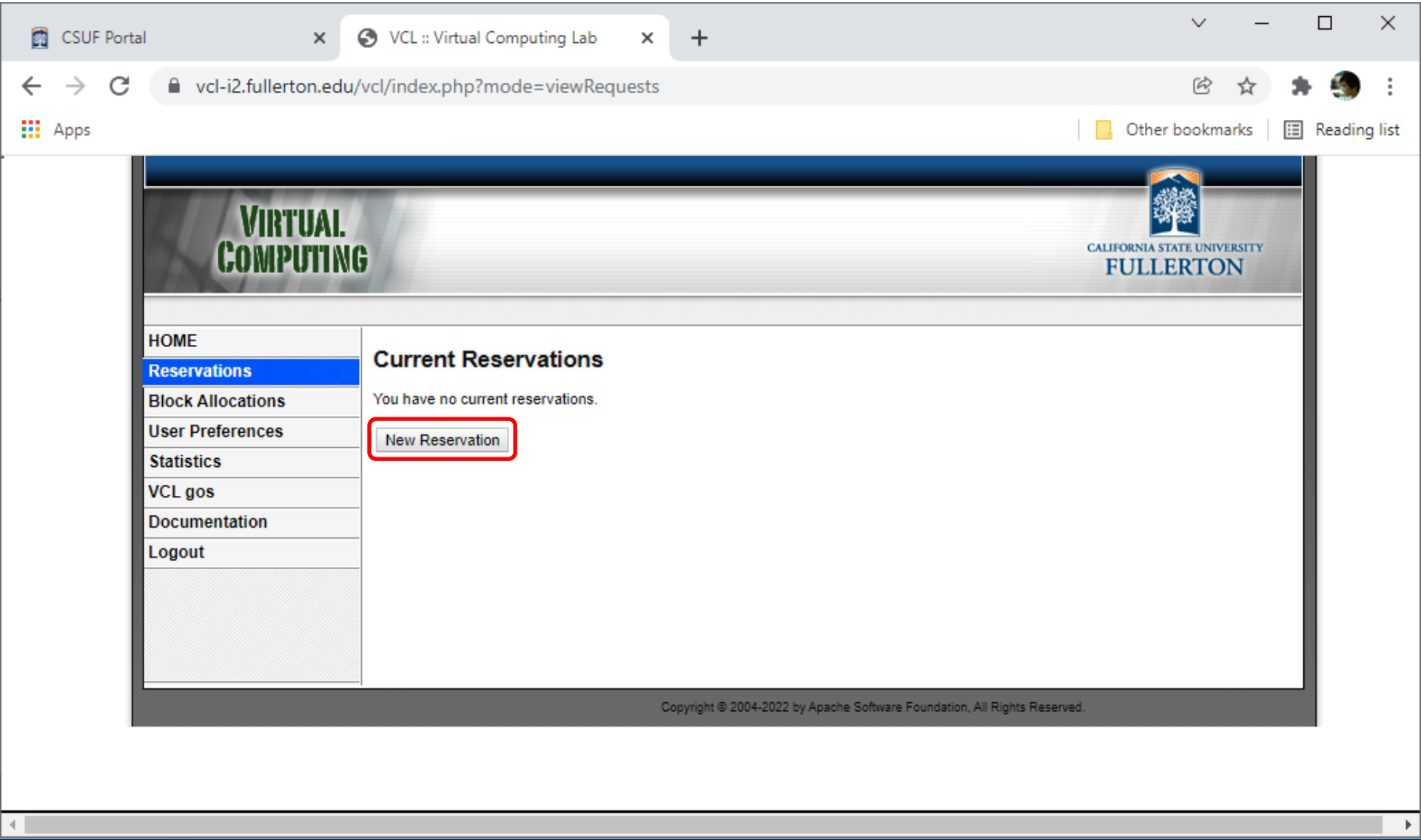
b. Click "Proceed to Login" in the Virtual Computing Lab.



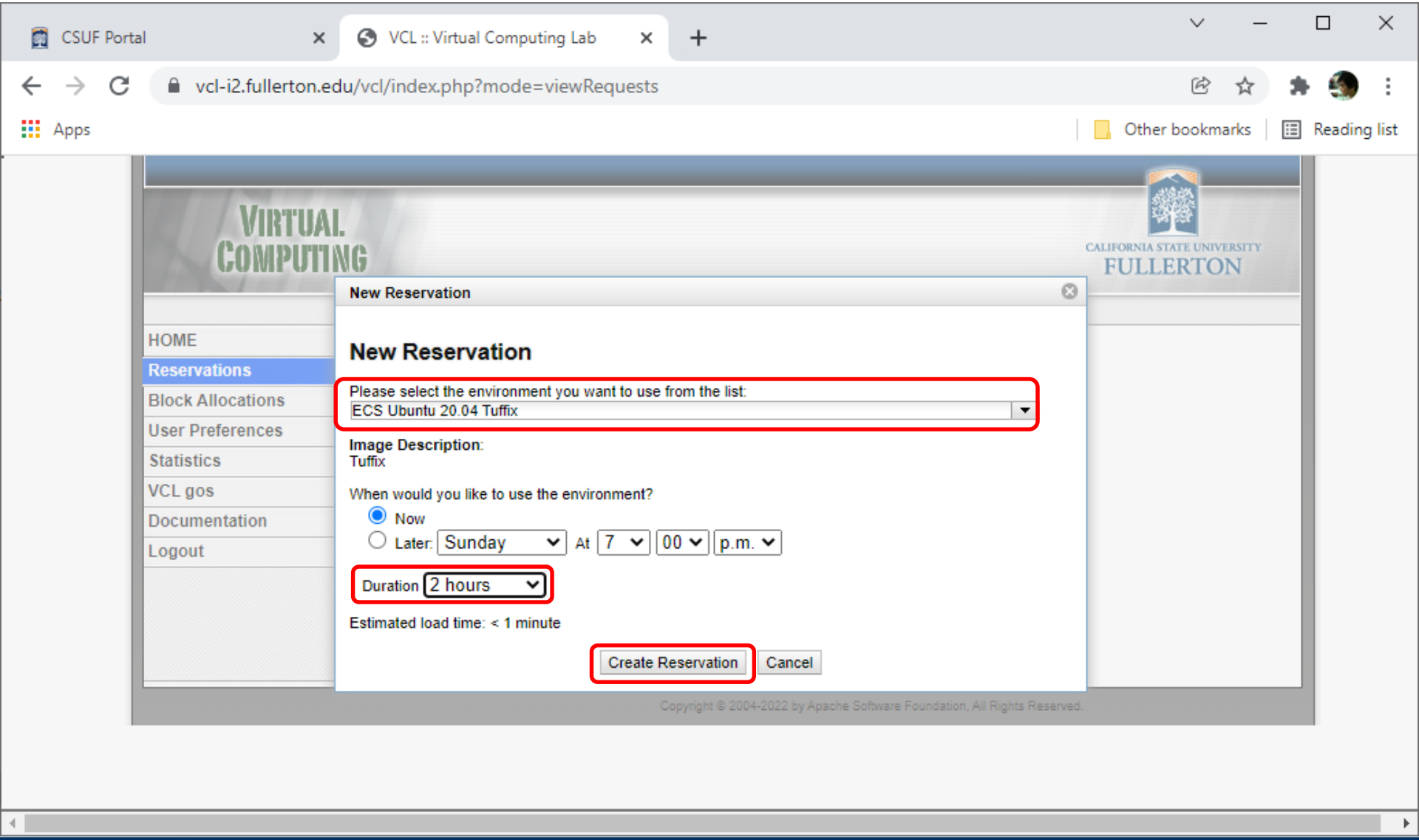
c. Select "Reservations" in the Virtual Computing Lab.



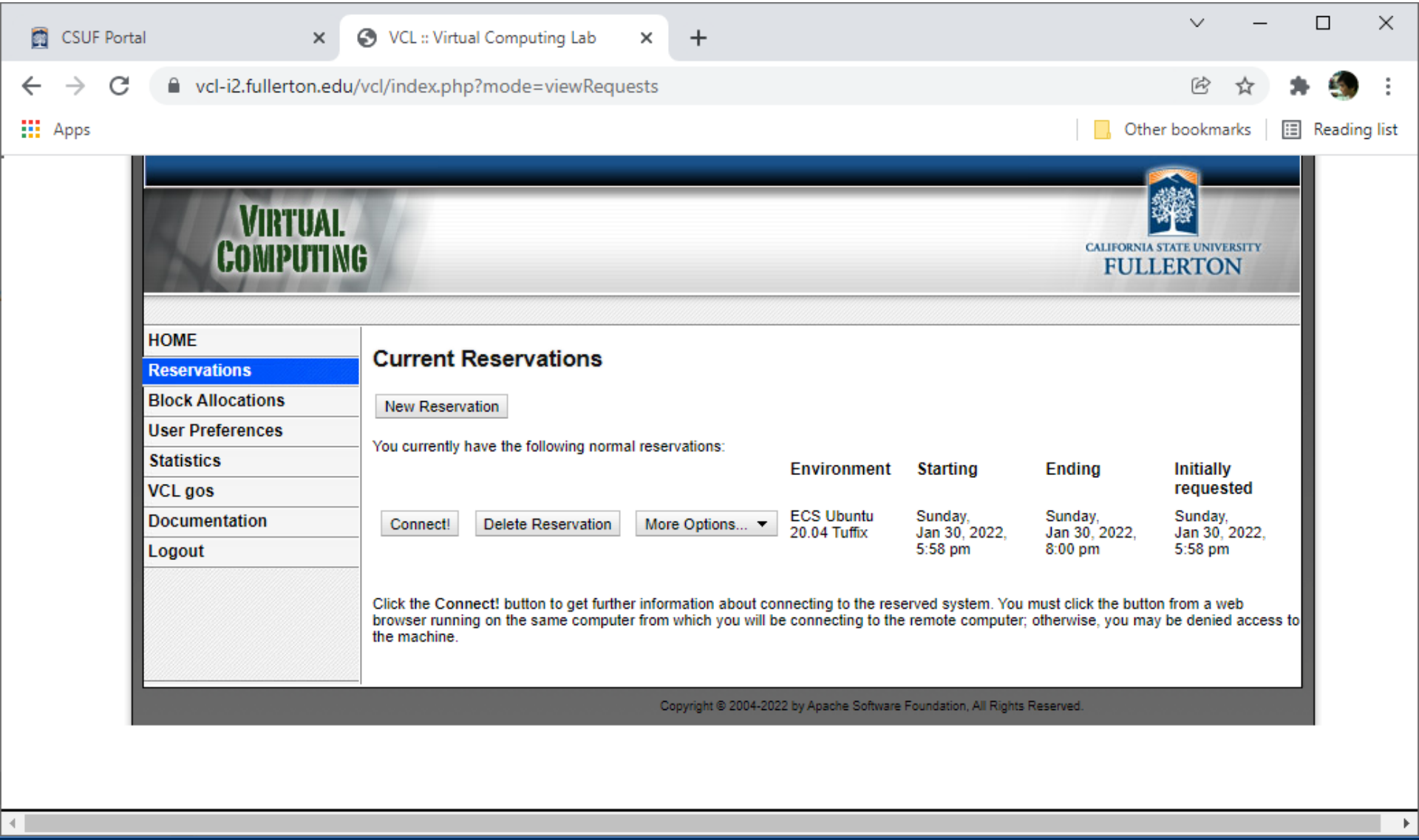
d. Click "New Reservation" button to open New Reservation dialog.



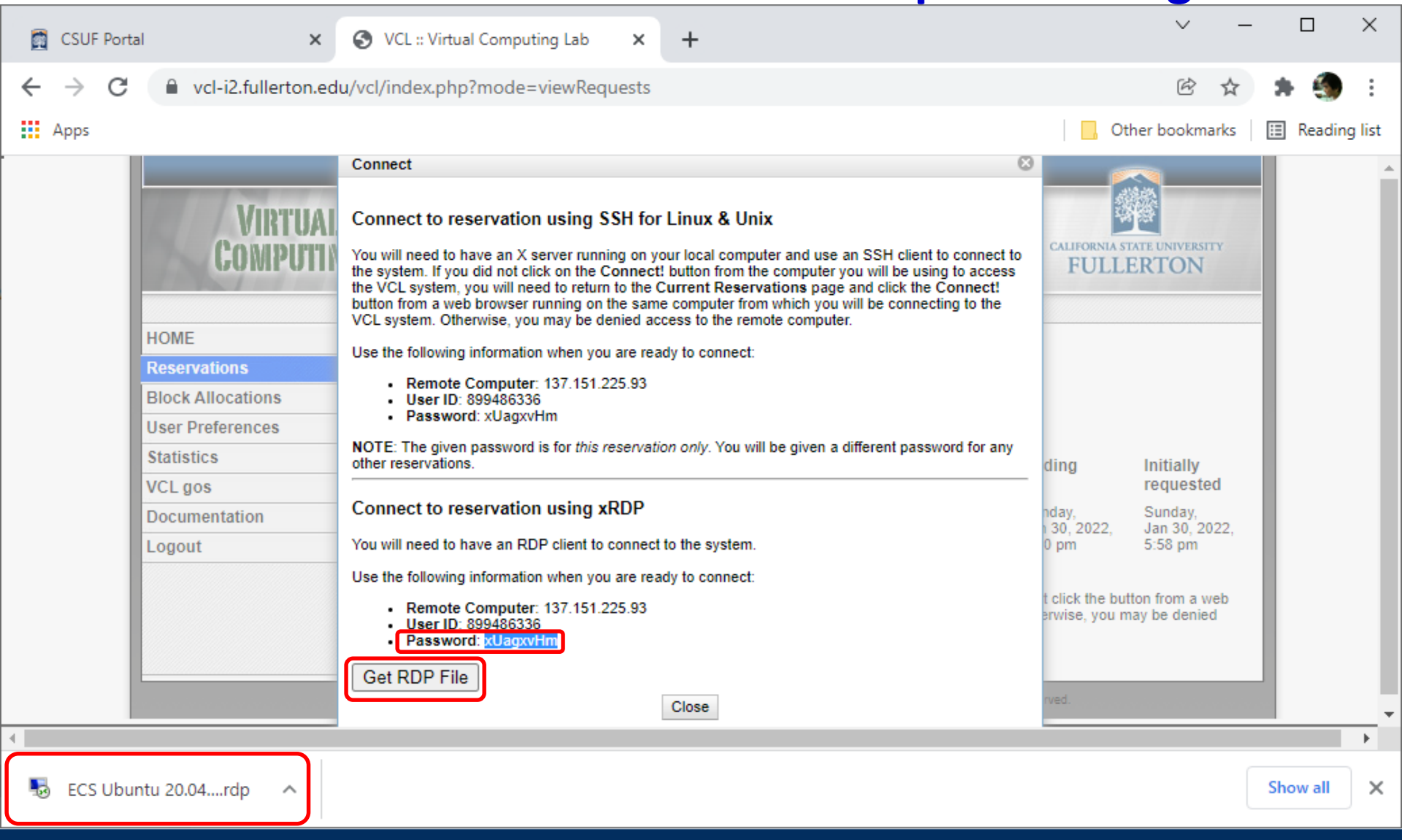
e. Select "ECS Ubuntu 20.04 Tuffix" and select "Duration=1/2/4 hours". Click "Create Reservation" button.



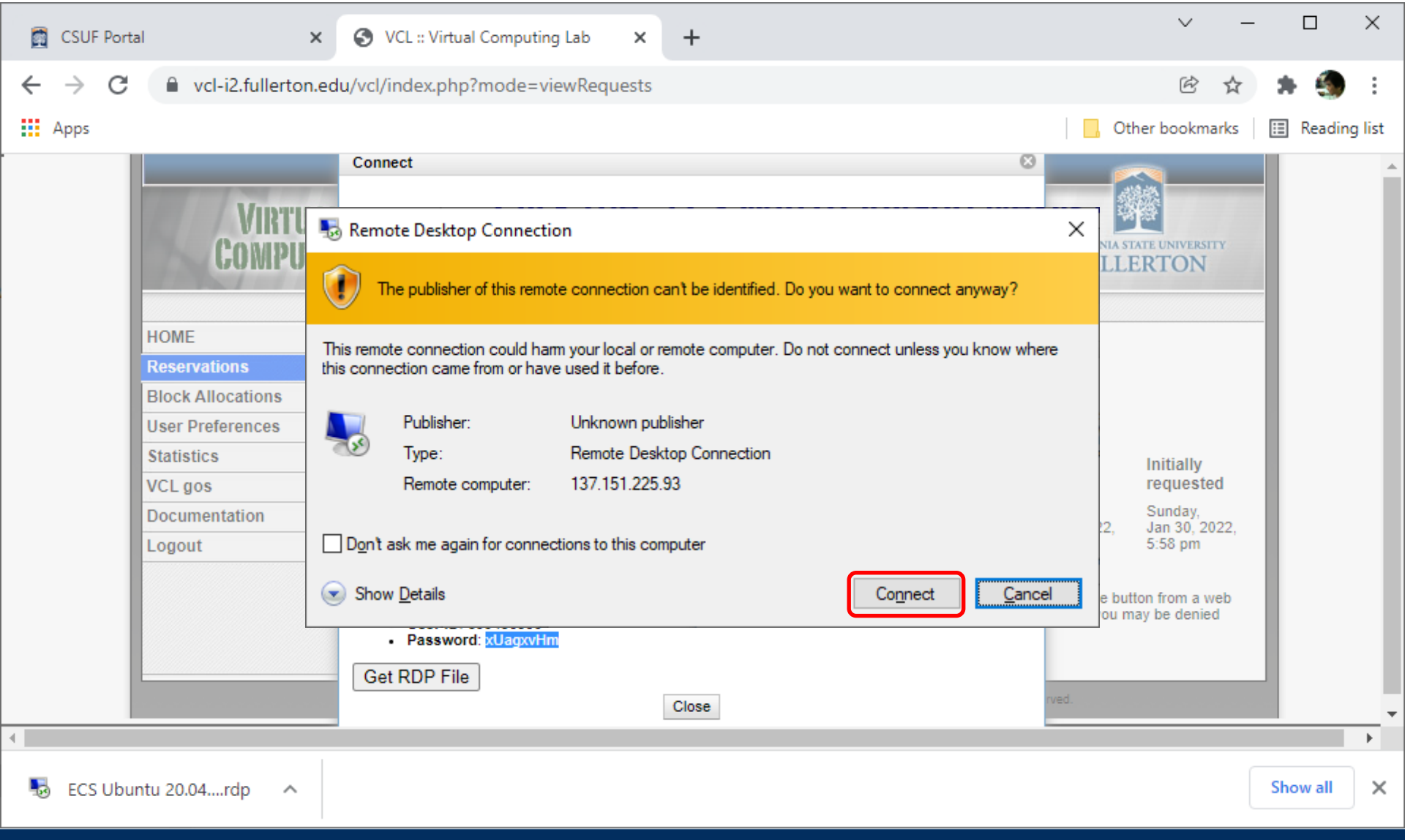
f. Click "Connect!" to open "Connect" dialog.



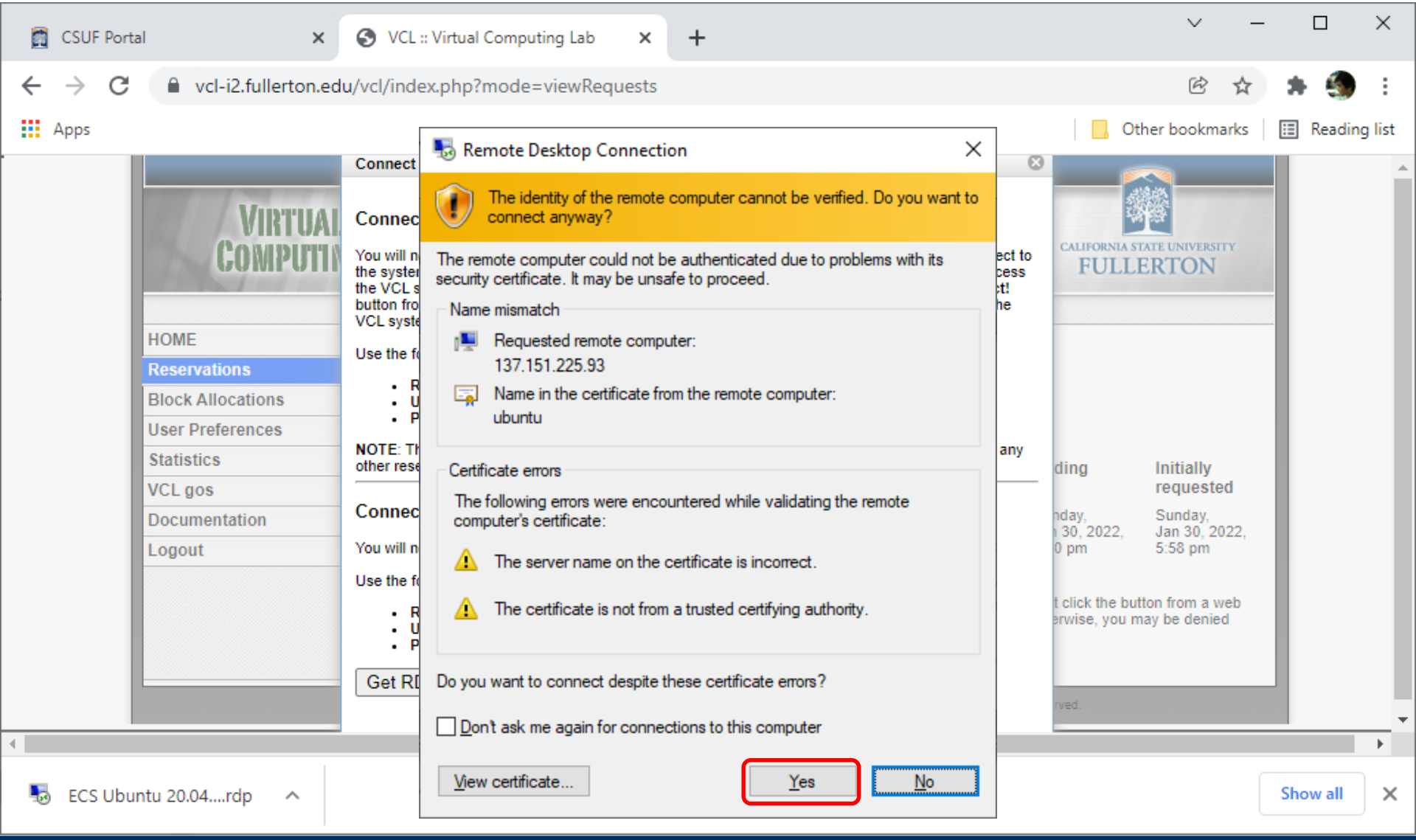
g. Click "Get RDP file" button.
Click the " ECS Ubuntu 20.04 Tuffix.rdp" file to log in.



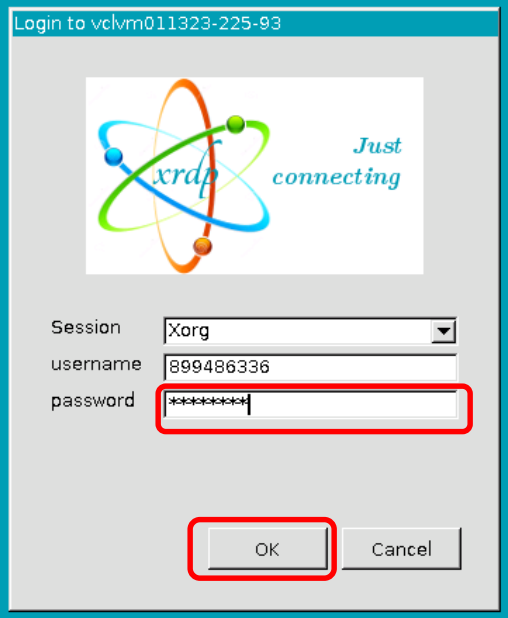
h. Click the "Connect" button to continue.



i. Click the "Yes" button to continue.

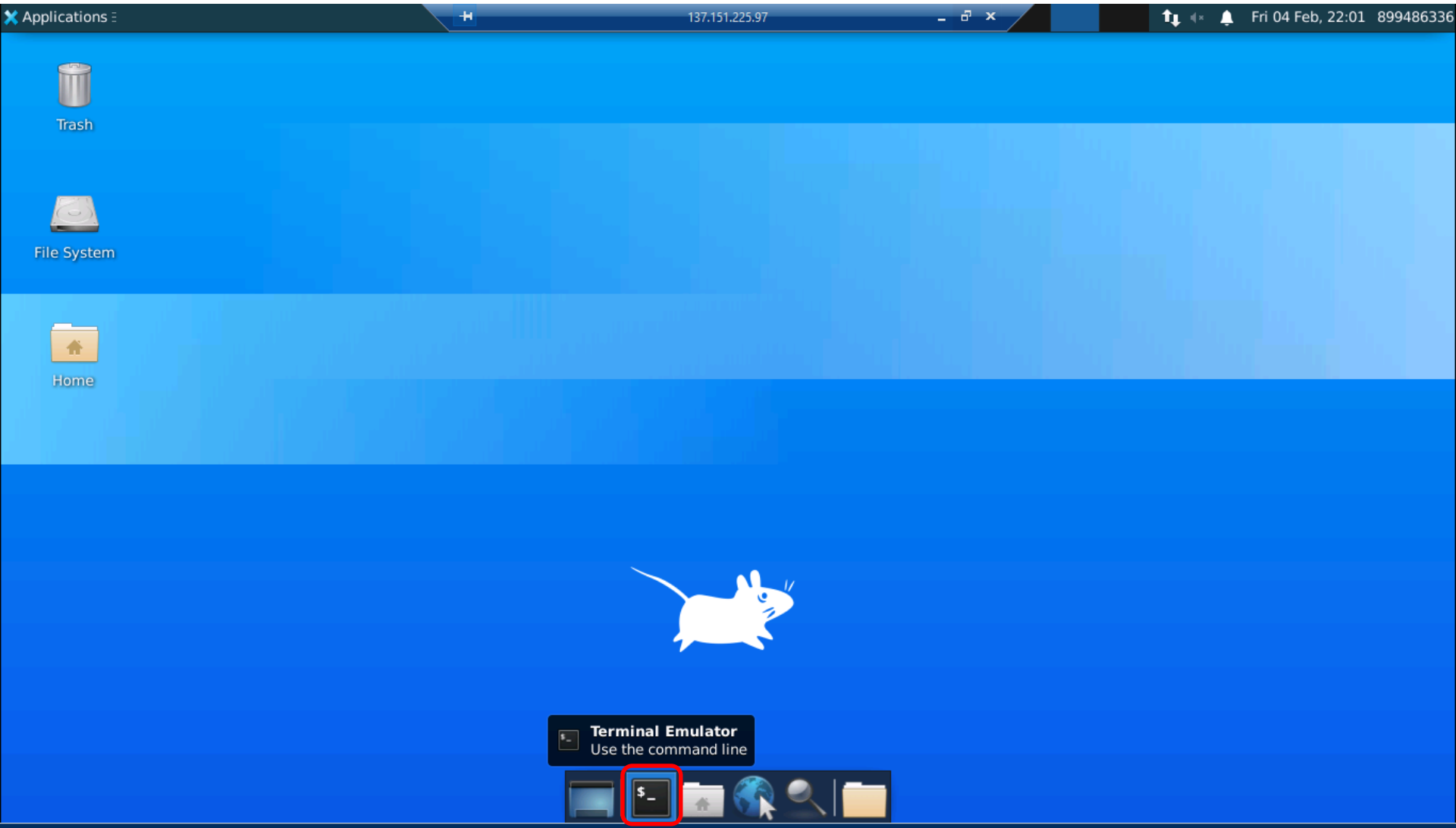


j. Input password and click the "OK" button to continue.

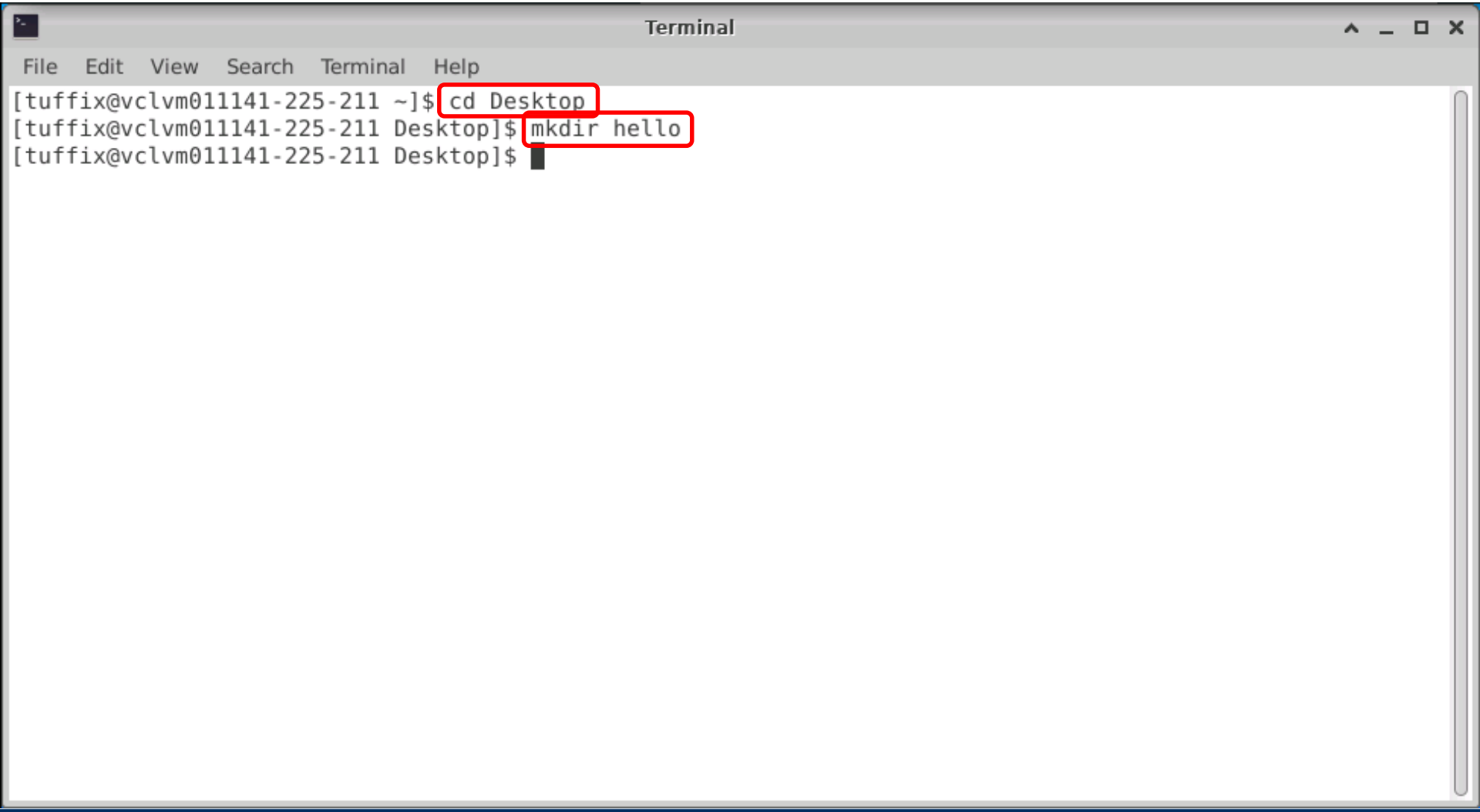


Upload Program

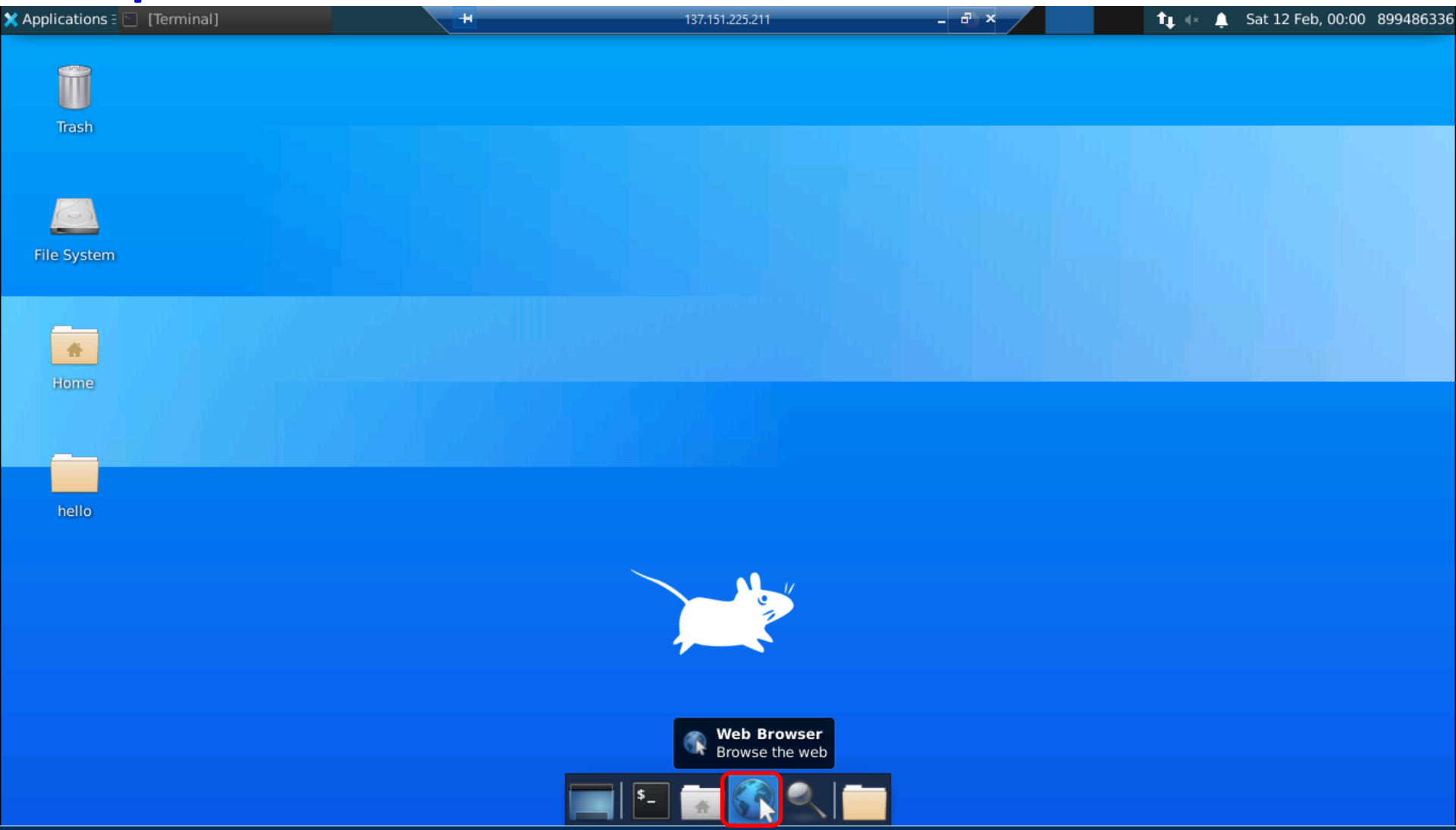
a. Click the "Terminal Emulator" to open the "Terminal Emulator" window.



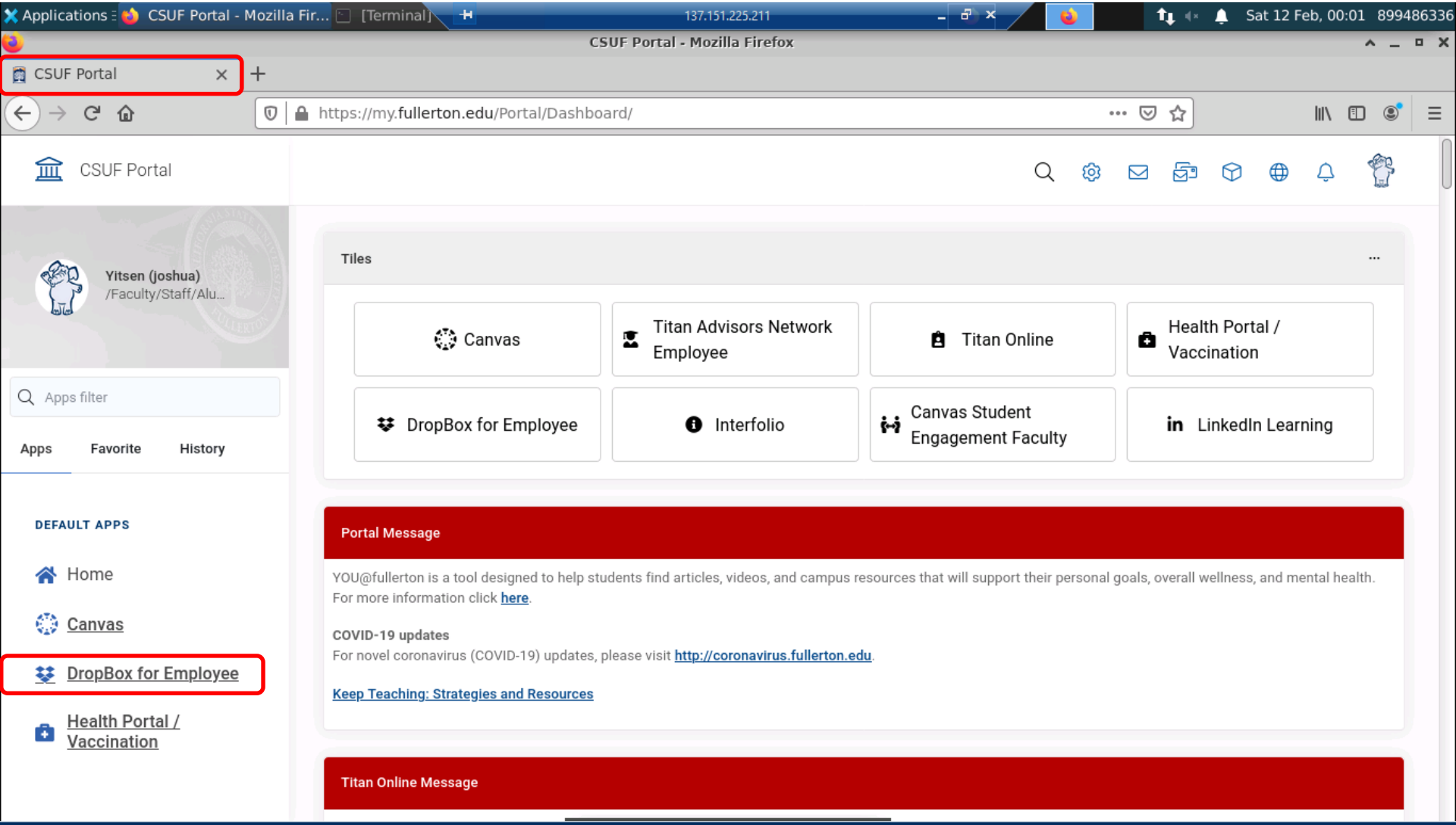
b. Input "cd Desktop" to change directory to "Desktop". Input "mkdir hello" to create a "hello" folder.



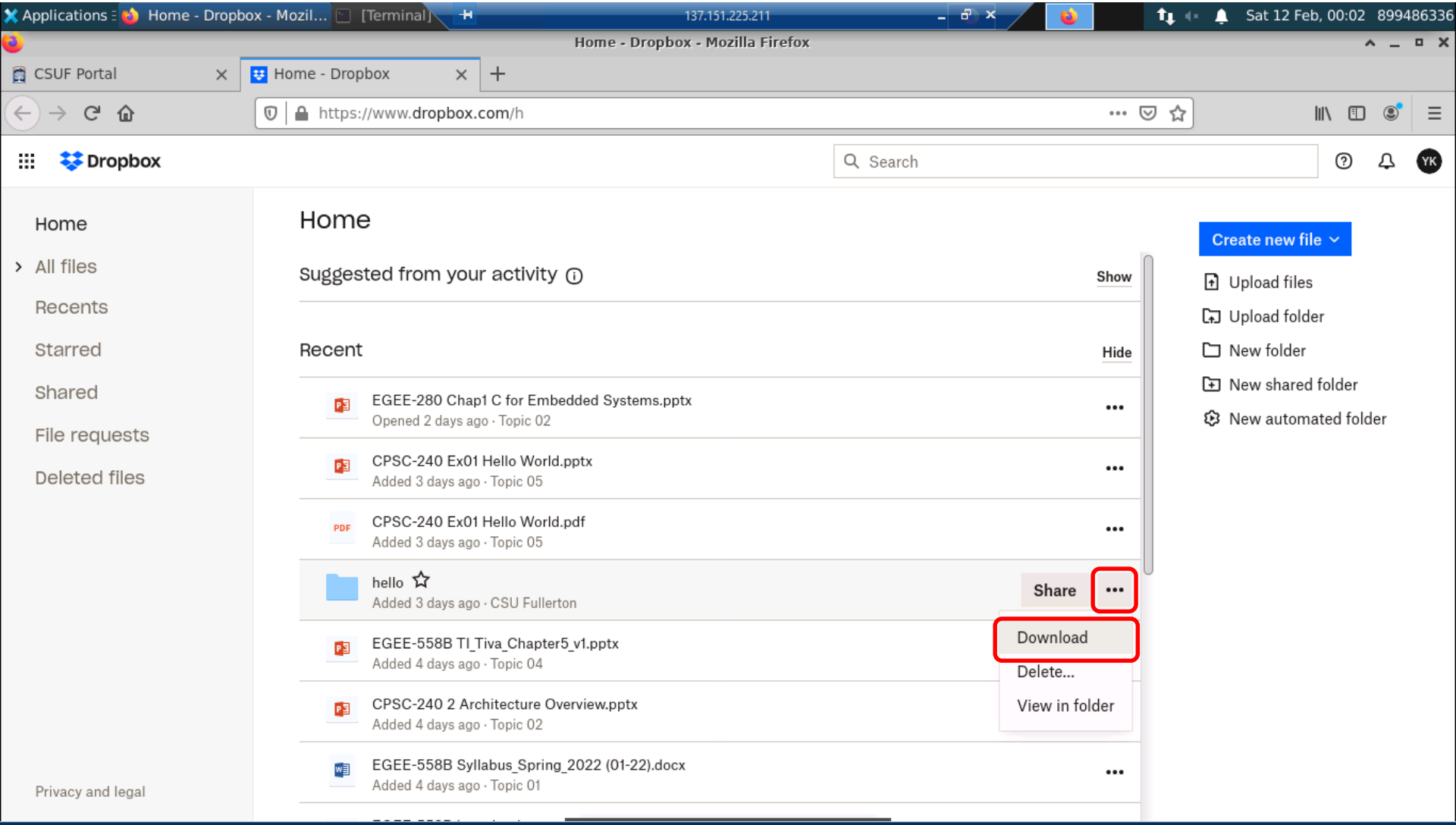
a. Switch to "Desktop" and click on "Web Browser" icon to open the "Web Browser".



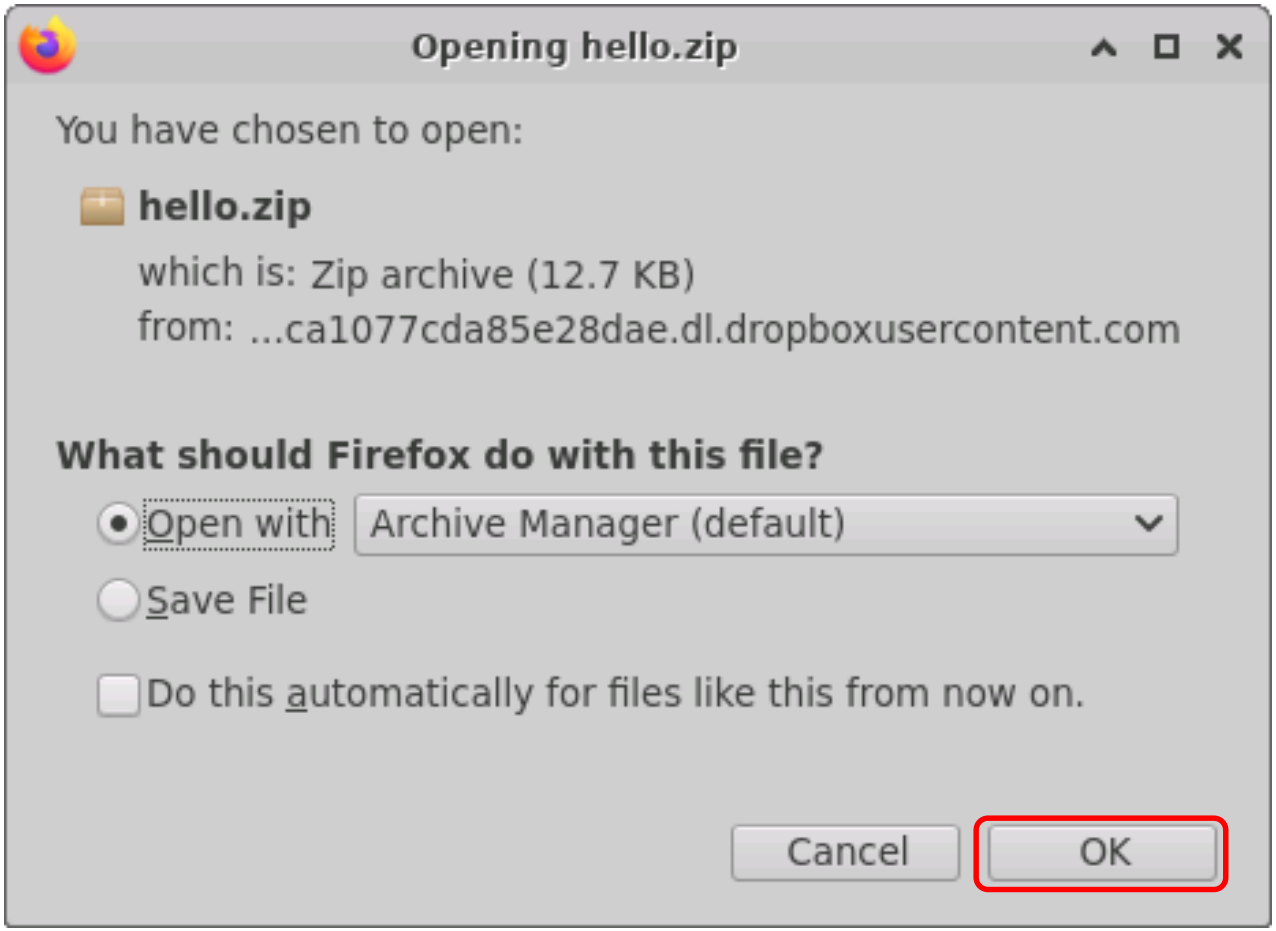
b. Open "CSUF portal" and click on the "DropBox".



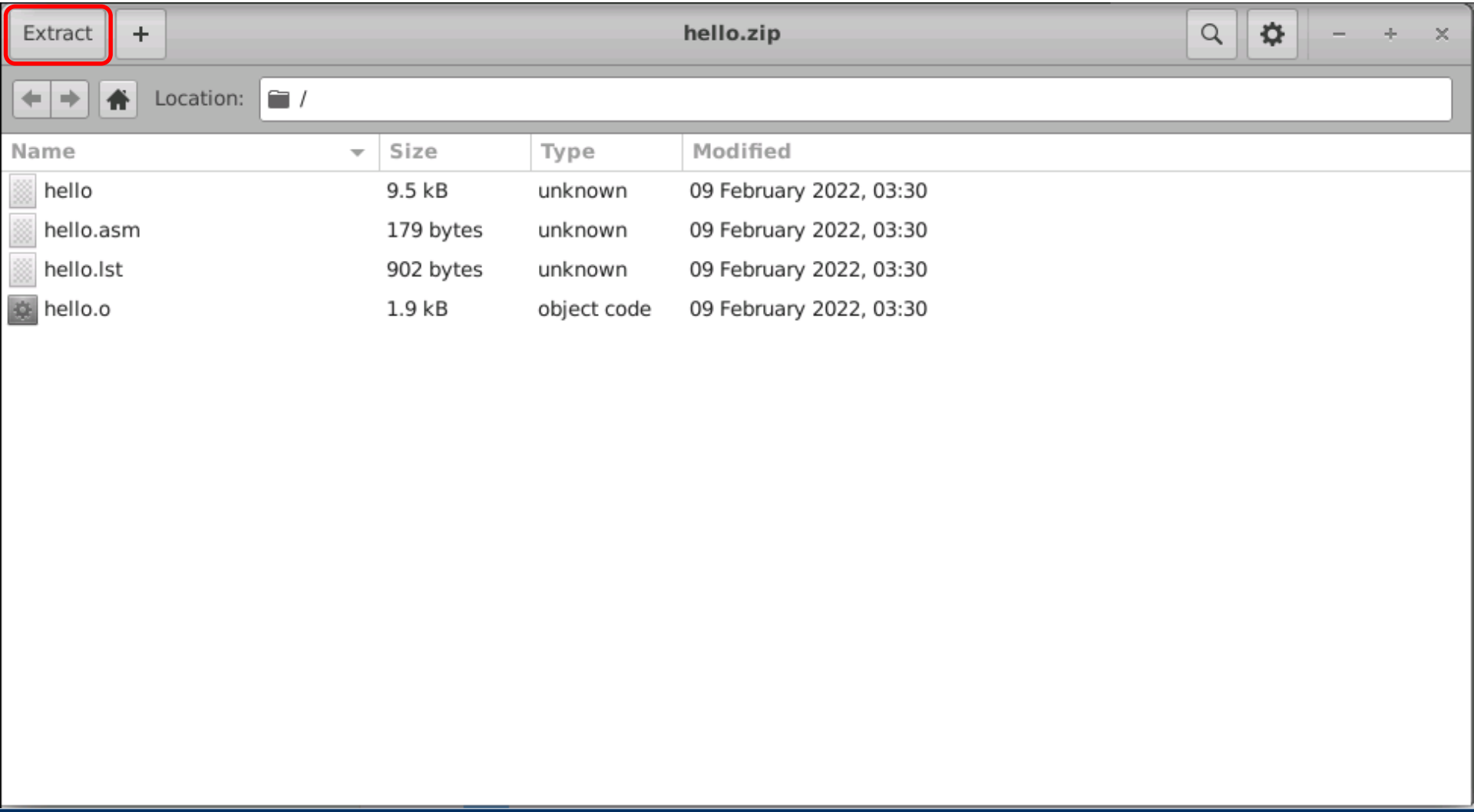
c. Click on "..." of the "hello" folder and select the "Download" item to download "hello" folder.



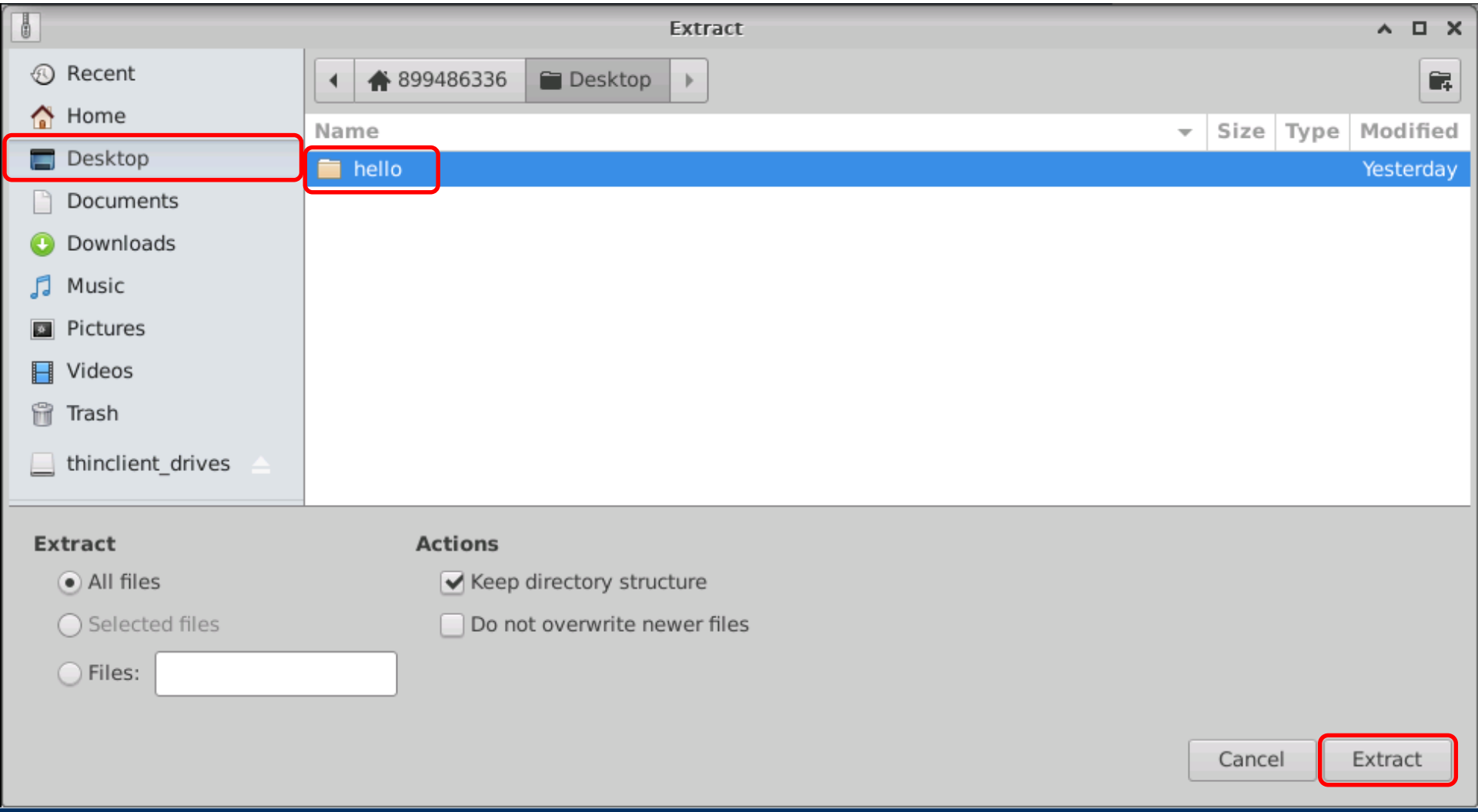
d. Click the "OK" button of the "Opening hello.zip" dialog to continue...



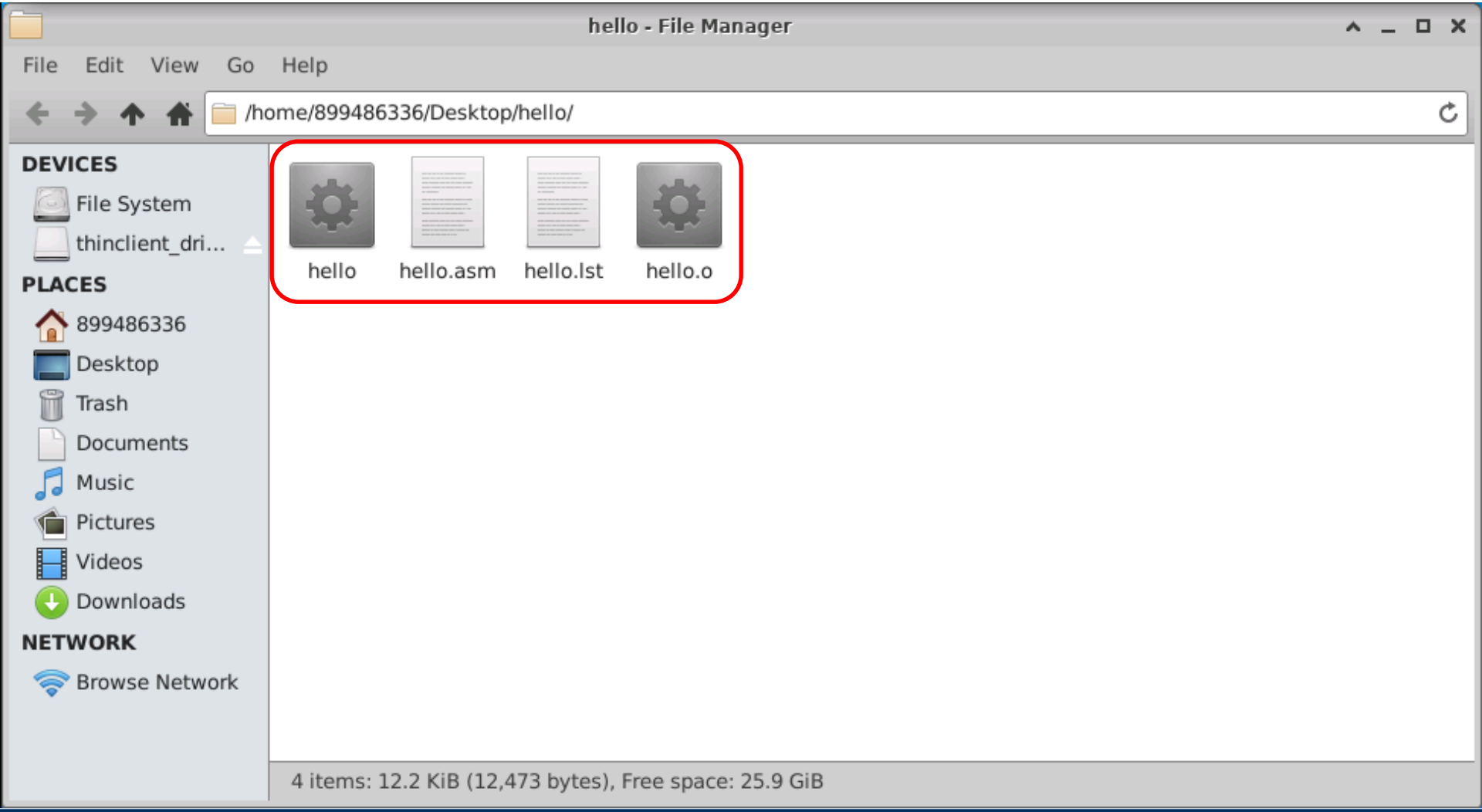
e. Click the "Extract" button to continue...



f. Select the "Desktop/hello" folder and click the "Extract" button to extract the zip file to the "hello" folder.

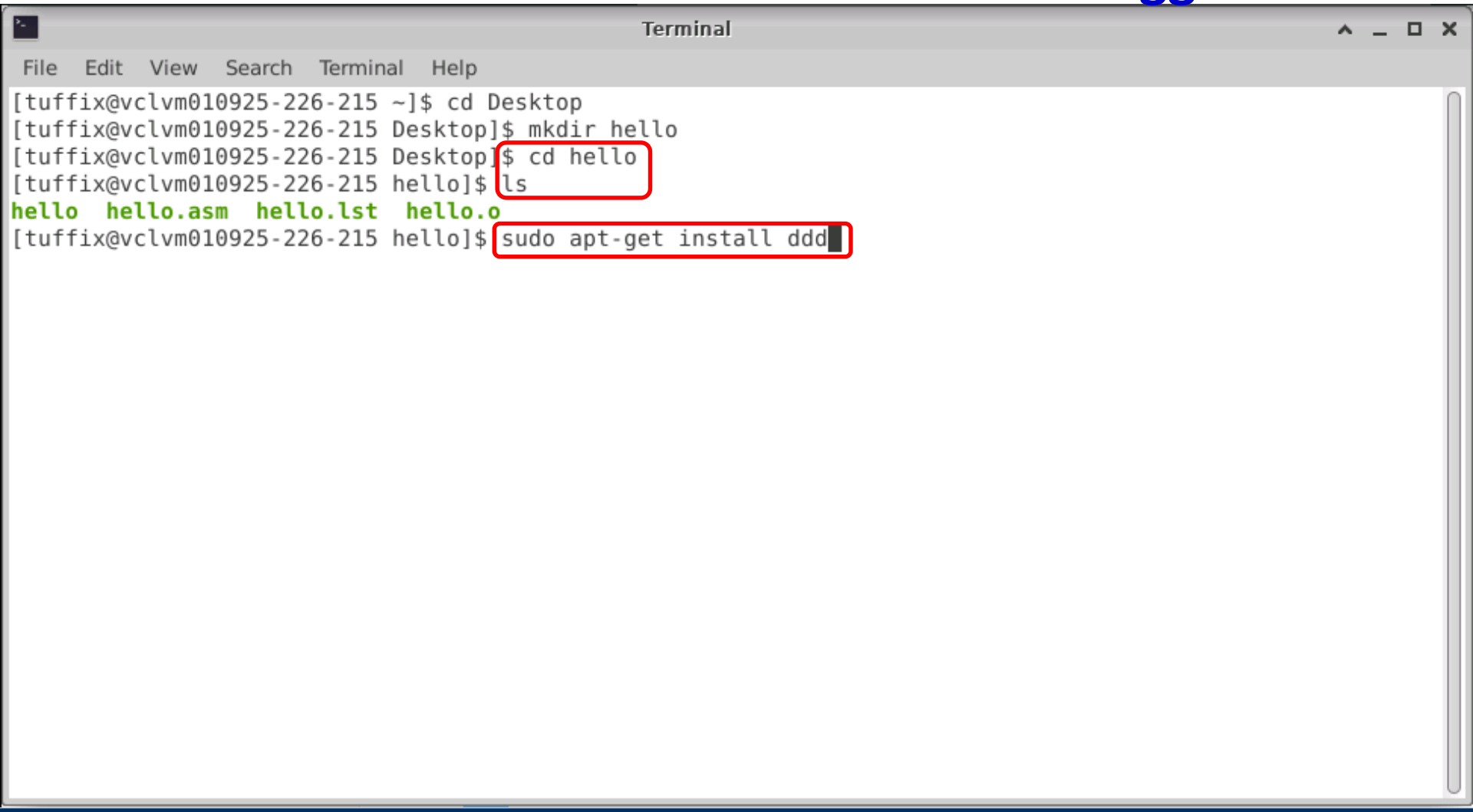


g. Switch to "Desktop" and open "hello" folder to check the files.

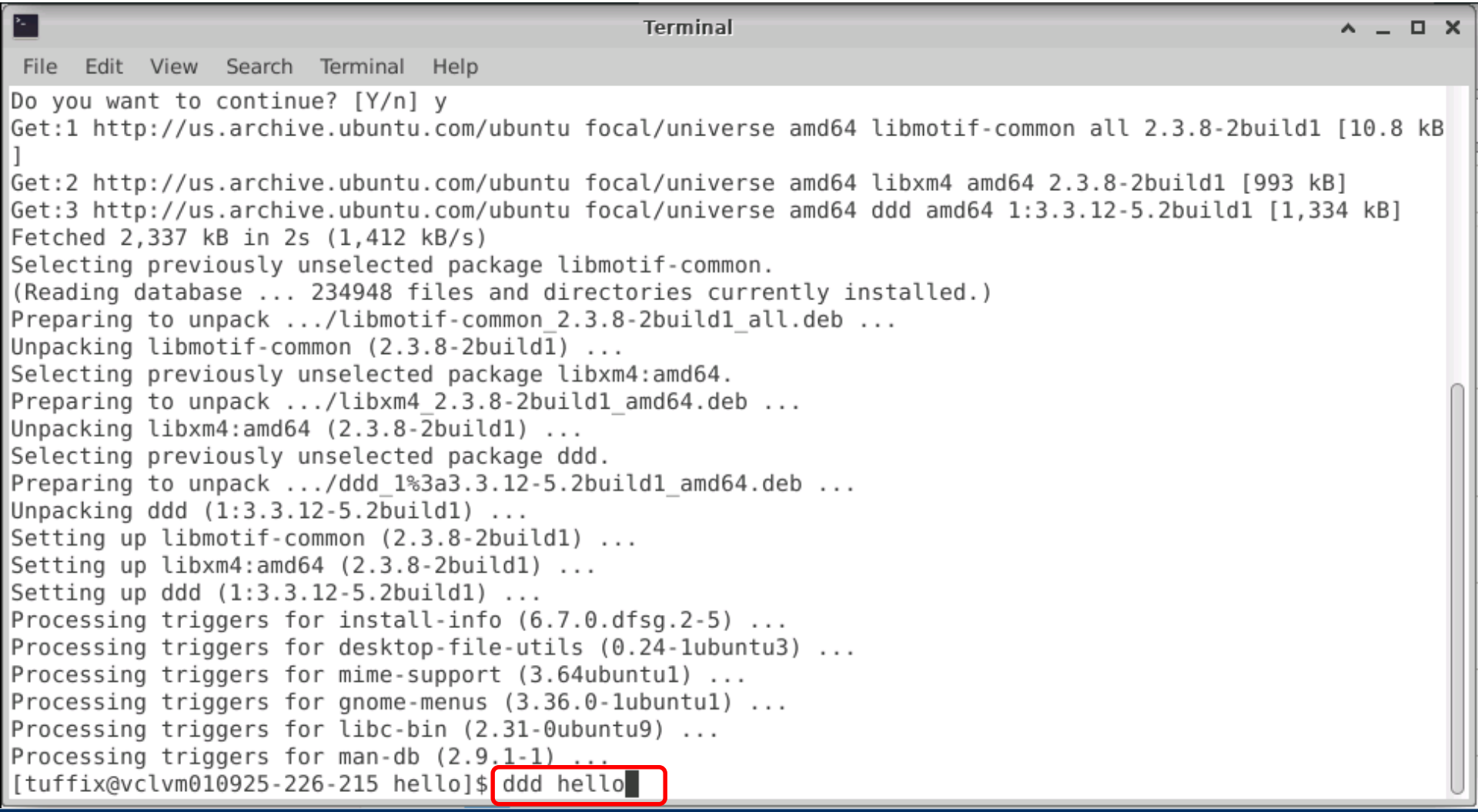


Create New Program

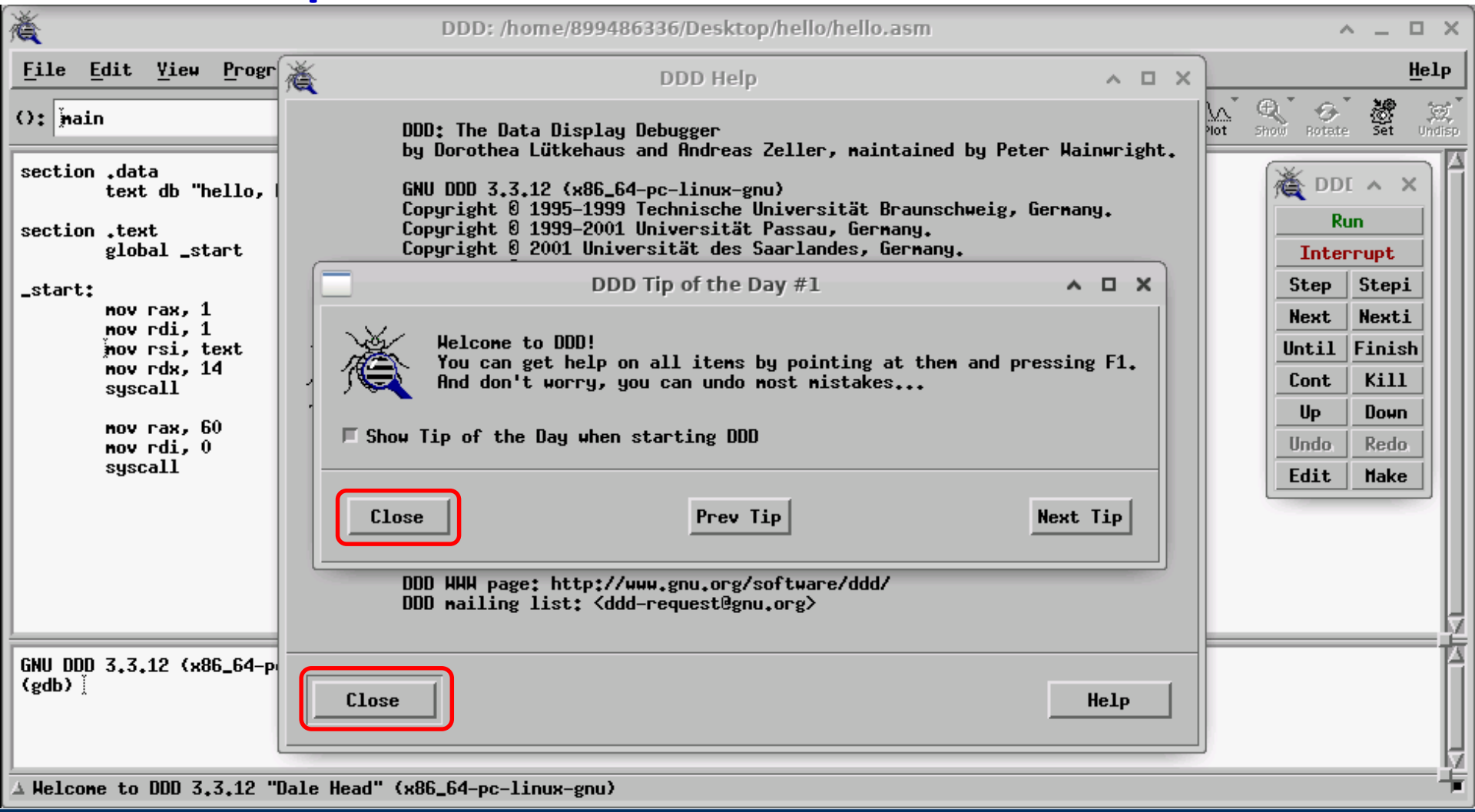
a. Switch to "Terminal" window. Input the "cd hello" to change directory to "hello". Input the "sudo apt-get install ddd" command to install "ddd" debugger.



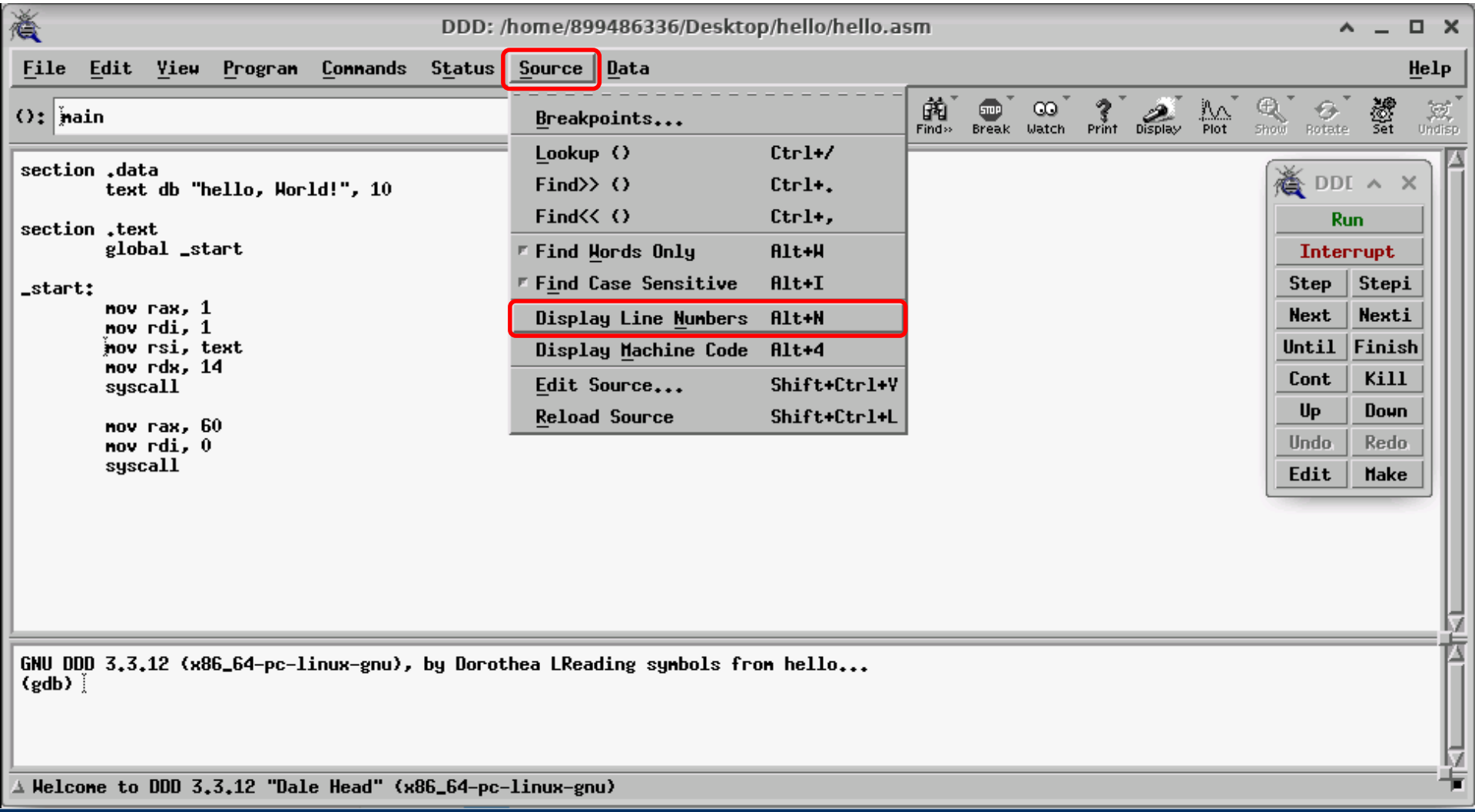
b. Input the "ddd hello" command after installing the "ddd" debugger.



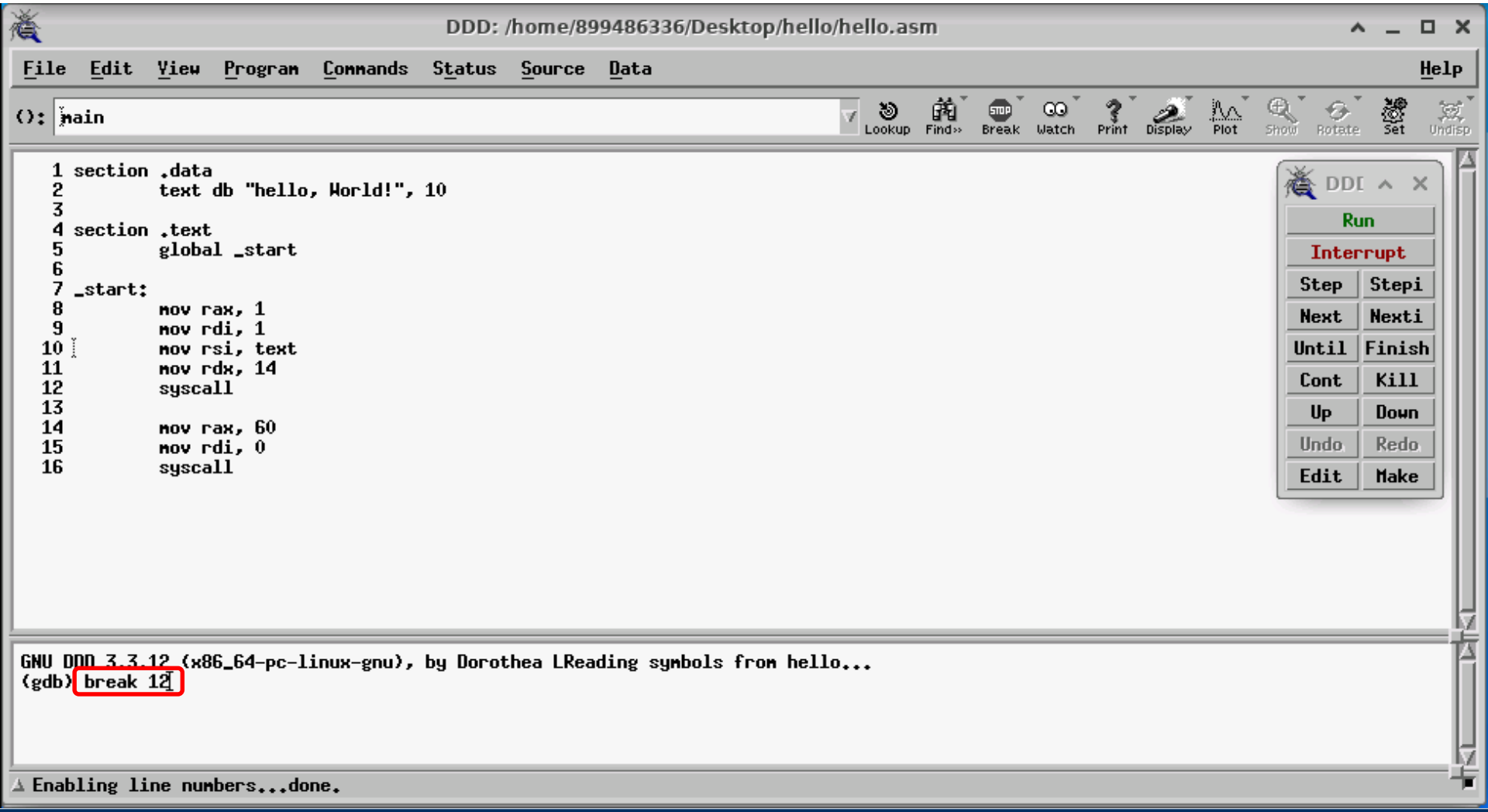
c. Click the "Close" button to close the "DDD Tip of the Day" window, and Click the "Close" button to close the "DDD Help" window.



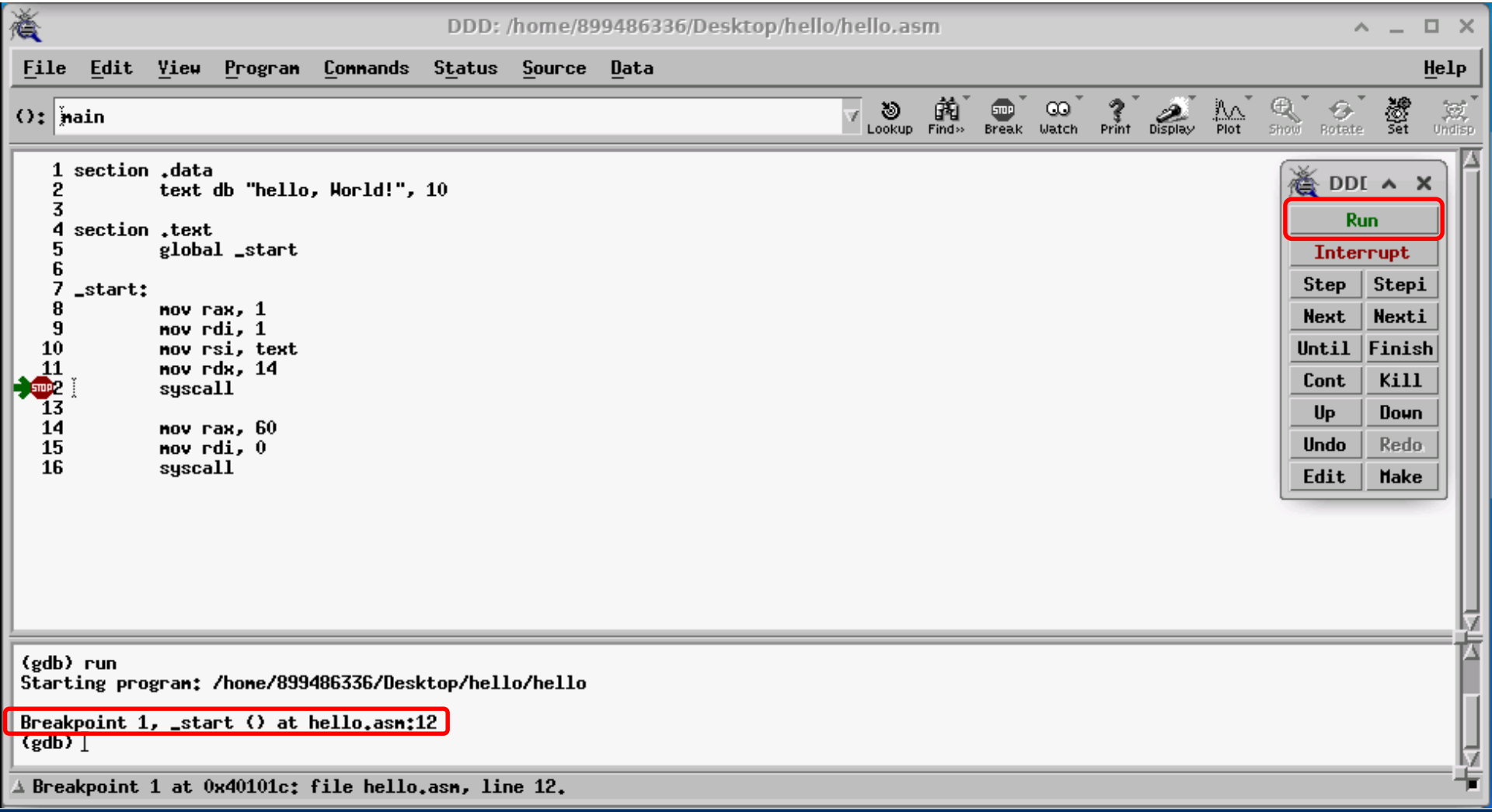
d. Select "Source/Display Line Numbers" to display line numbers to the left of the instructions.



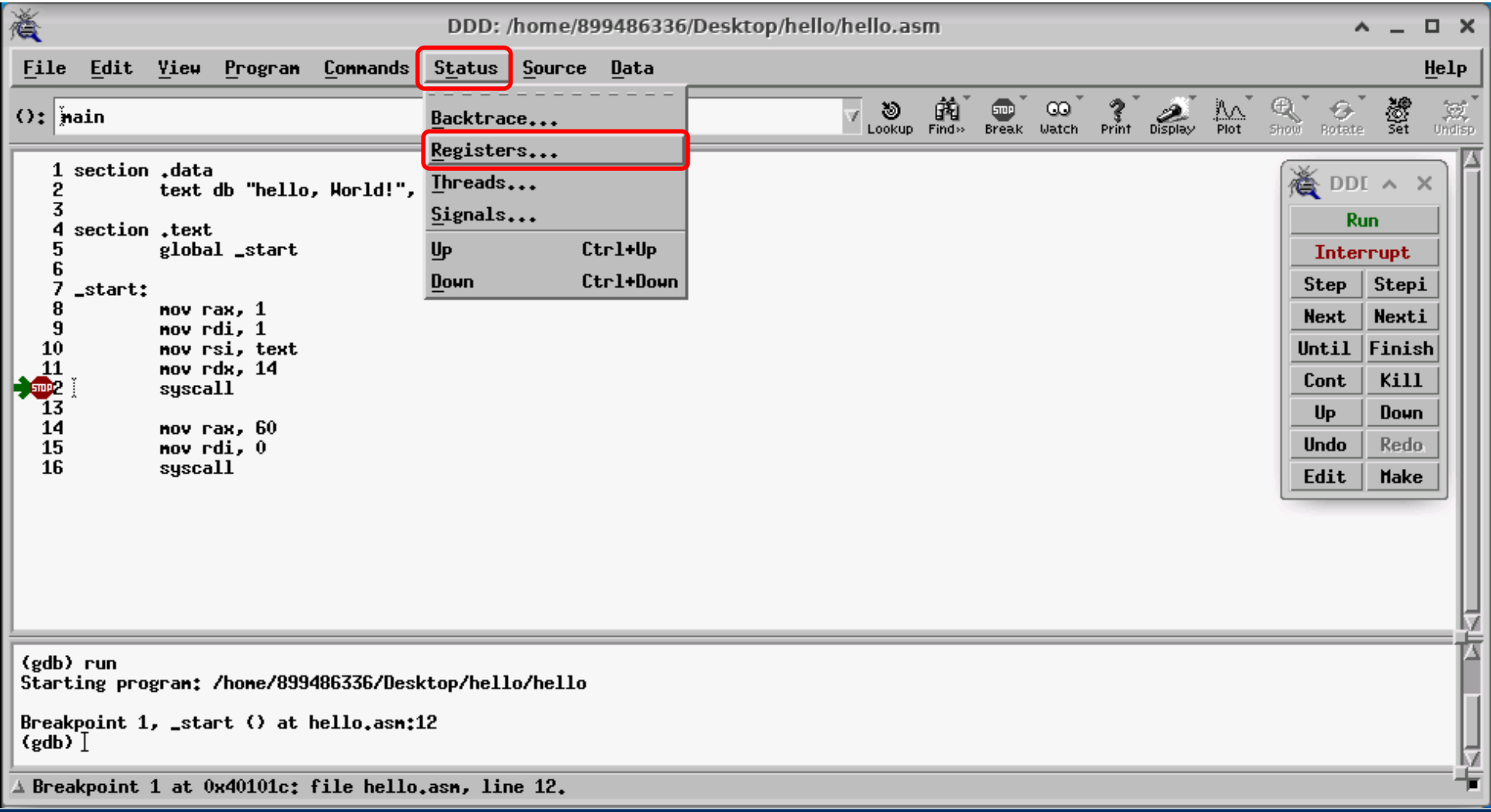
e. Input "break 12" command to set a breakpoint on line 12.



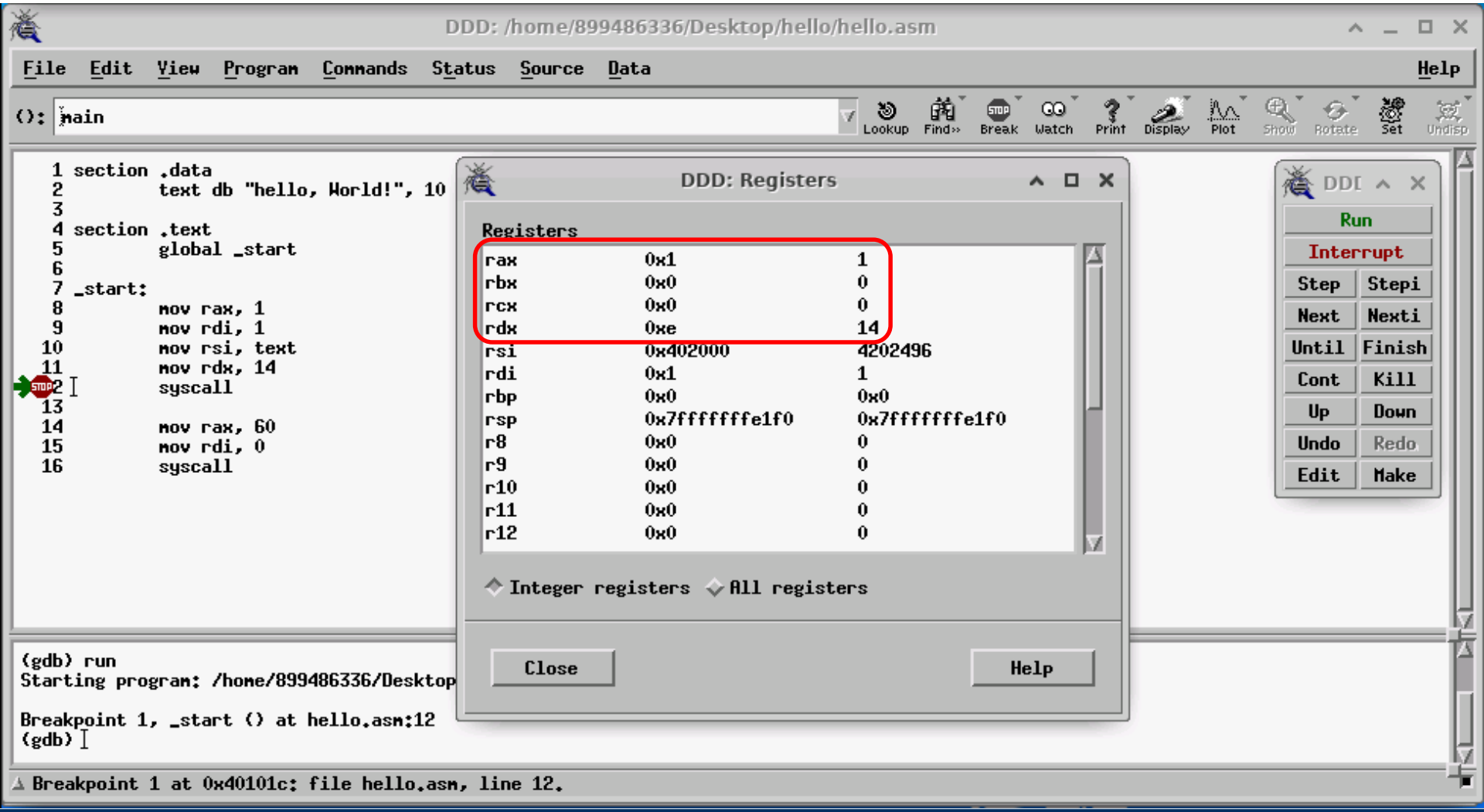
f. Click the "Run" button to simulate to line 12, as shown in the "gdb" panel.



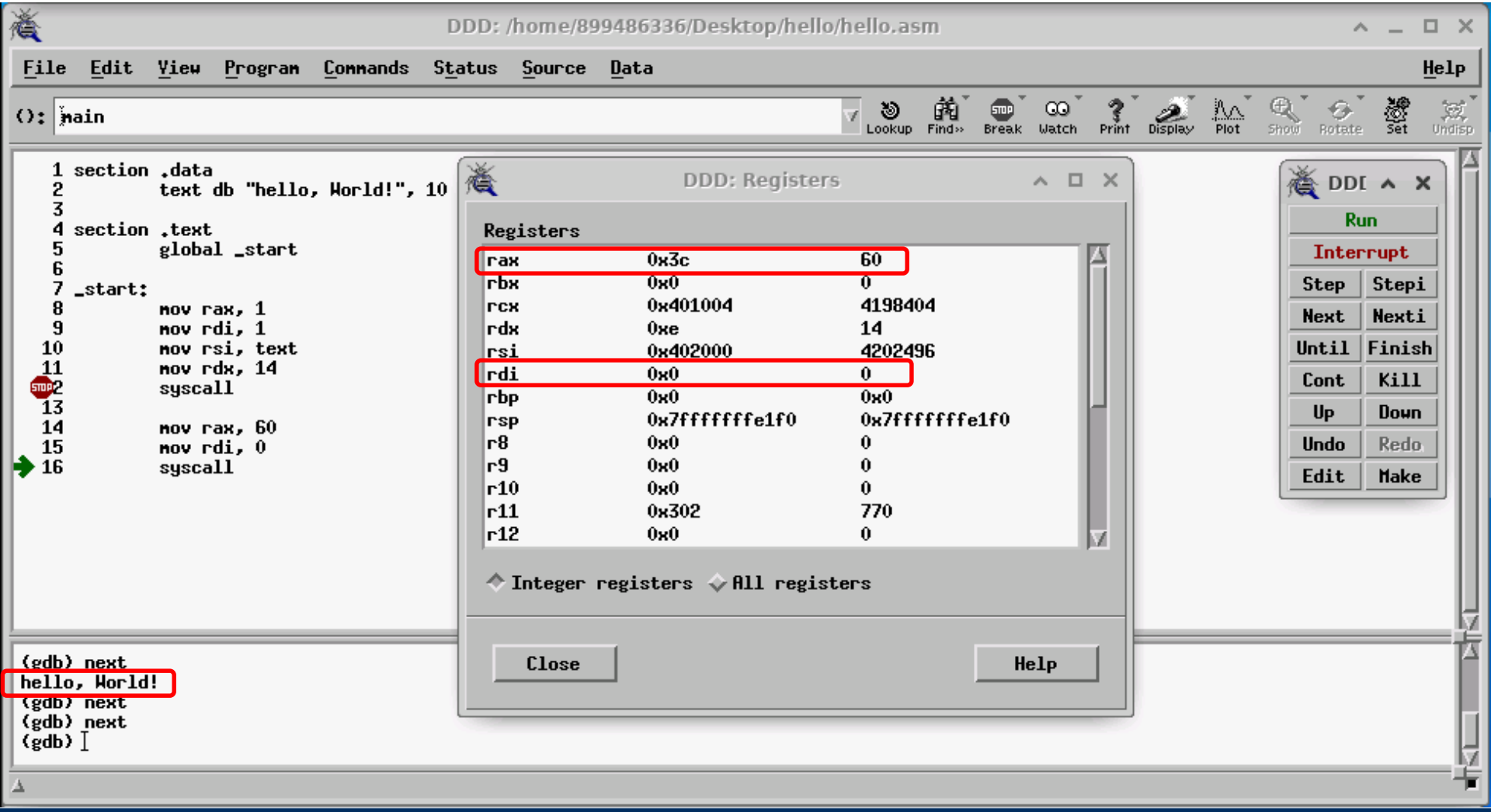
g. Select "Status/Registers..." item to open "DDD: Registers" window.



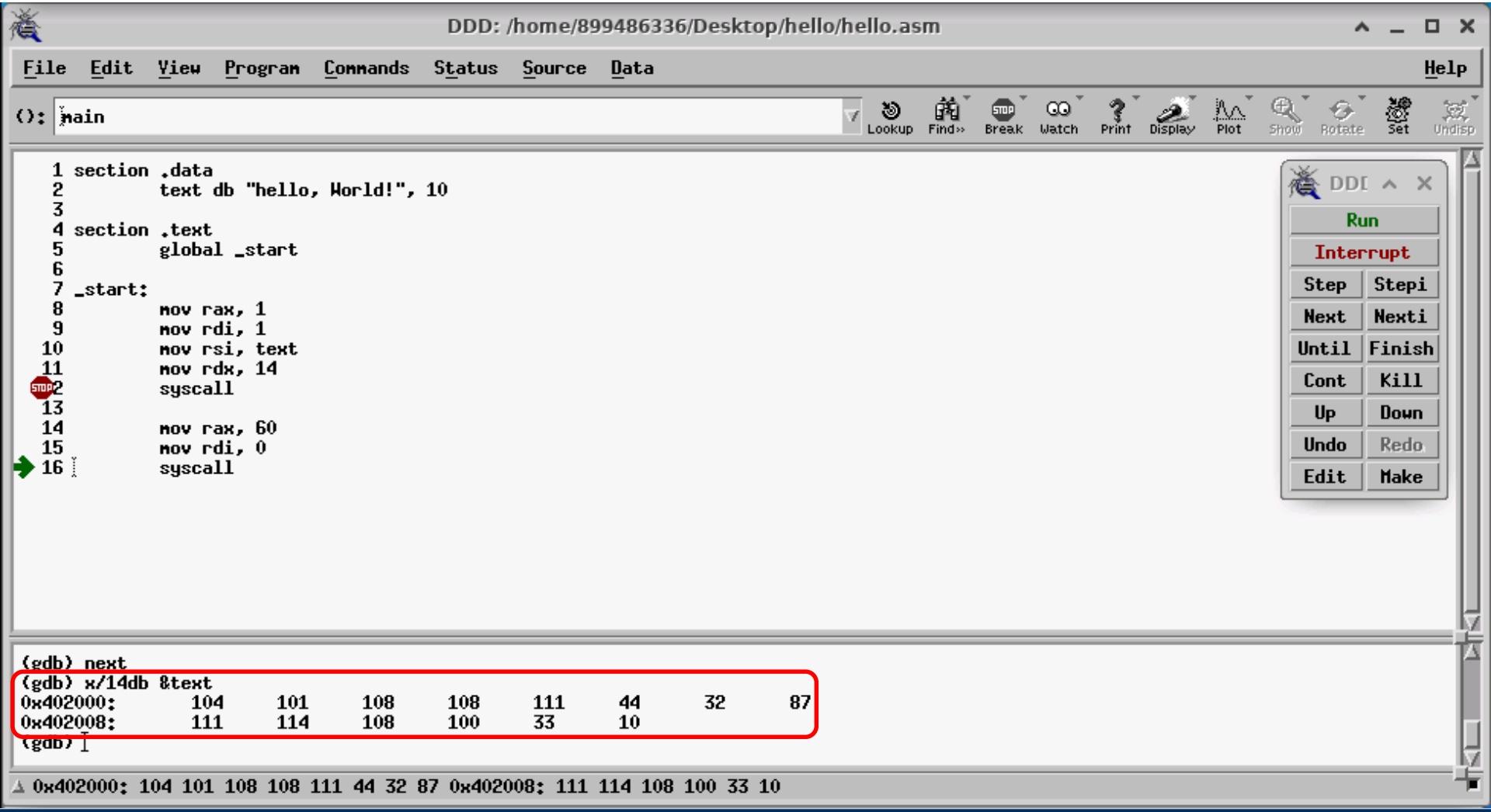
h. The "DDD: Registers" window shows rax=1, rdi=1, rsi=0x402000, and rdx=14. Agree with the instructions on lines 8 to 11.



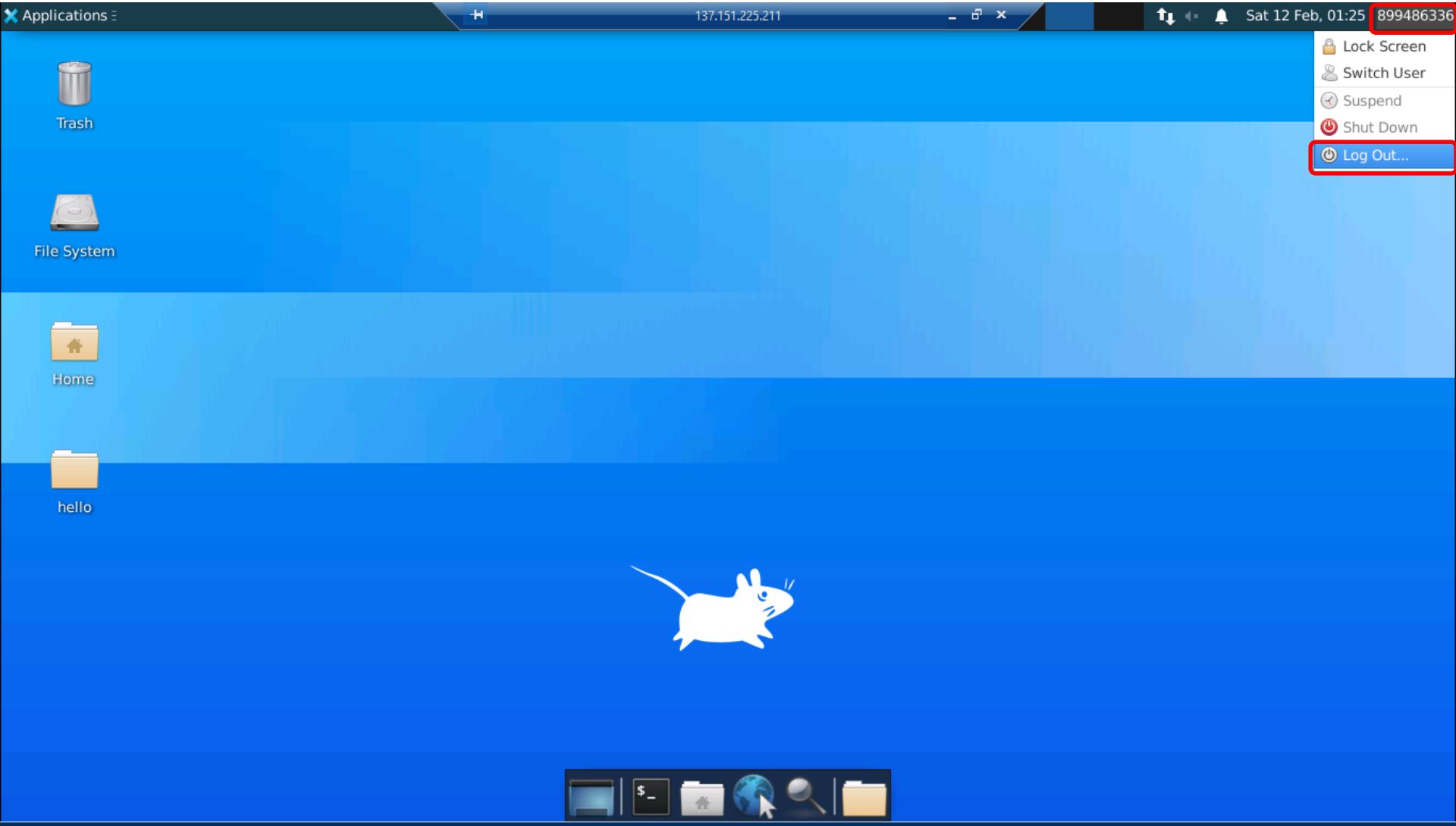
i. Click the "Next" button once and the "gdb" panel displays the "hello, World!" string. Continue to click the "Next" button twice, then rax=60 and rdi=0, as shown in the "DDD: Registers" window.



j. Input "x/14db &text" command in the "gdb" panel to display the ASCII code of the string "text".



k. Close all windows and select "CWID/Log Out..." to terminate the "Remote Desktop".



Thanks