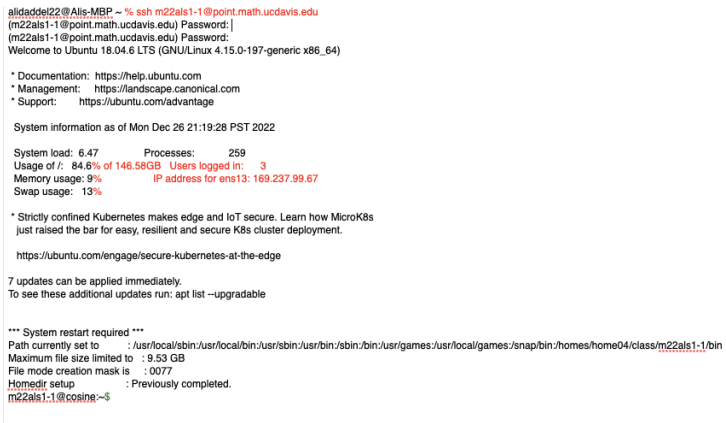
UC Davis; MATH 22AL Dr. Daddel

How to start, finish, edit and submit your work

1 Login

1. Open a terminal window and use your username and password to login to MATH Dept servers:
I am using the username m22als1-1 Since I am using MAC terminal I type
ssh m22als1-1@point.math.ucdavis.edu
and Press return.
When I type the password, the curser doesn't move, it seems it is not working, BUT that is how it is designed.
The system is case sensitive, Please type your password with extra care, I had to type it twice to make it right.

When you are logged on, you will see your username @ one of the servers, in my case it was
m22ala1-1@cosine:~ $
This means I am logged on to server called "Cosine".



2 Login

1. Open a terminal window and use your username and password to log in to the MATH Department servers. For example, I am using the username `m22als1-1`. Since I am using the macOS Terminal, I type:

```
ssh m22als1-1@point.math.ucdavis.edu
```

and then press `Return`.

When I type the password, the cursor does not move. It may seem as if nothing is happening, but this is normal behavior in UNIX systems. **Important:** The system is case sensitive. Please type your password carefully. In my case, I had to try twice before it was accepted.

Figure 1: Login screen on the MATH Department server

When you are logged on, you will see your username followed by one of the servers. For example, in my case it was:

```
m22als1-1@cosine:~$
```

This means I am logged on to a server called `Cosine`.

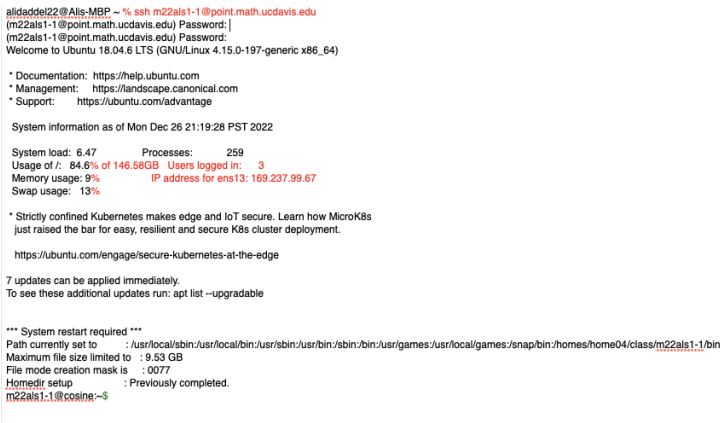


Figure 2: Successful login showing the server name

3 Starting MATLAB

Type `textmatlab` on the command line to start a MATLAB session. It may take 10–15 seconds for MATLAB to start.

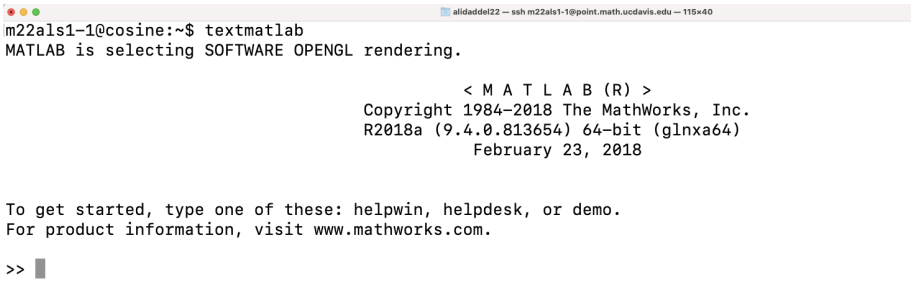


Figure 3: Starting MATLAB from the command line

When you see the MATLAB prompt >>, your MATLAB session has started.

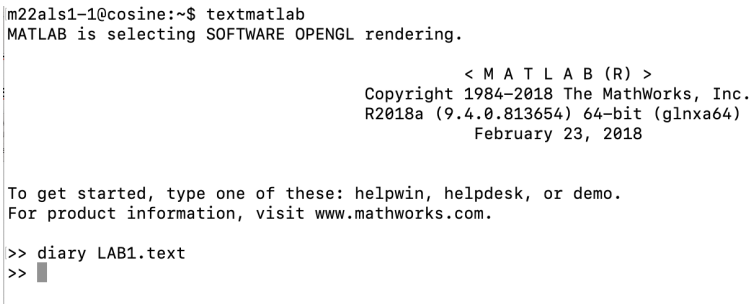


Figure 4: MATLAB prompt showing successful startup

Continue your work by visiting the course website:
https://www.math.ucdavis.edu/~daddel/MATH22AL/22AL_Home.html
Click on **LAB1** to see the instructions and information. Please follow them carefully until you finish your work.
Here are some example pictures of LAB1 from the website.
The rest of this handout presents a few important steps: starting a LAB, editing, viewing, and submitting your work.

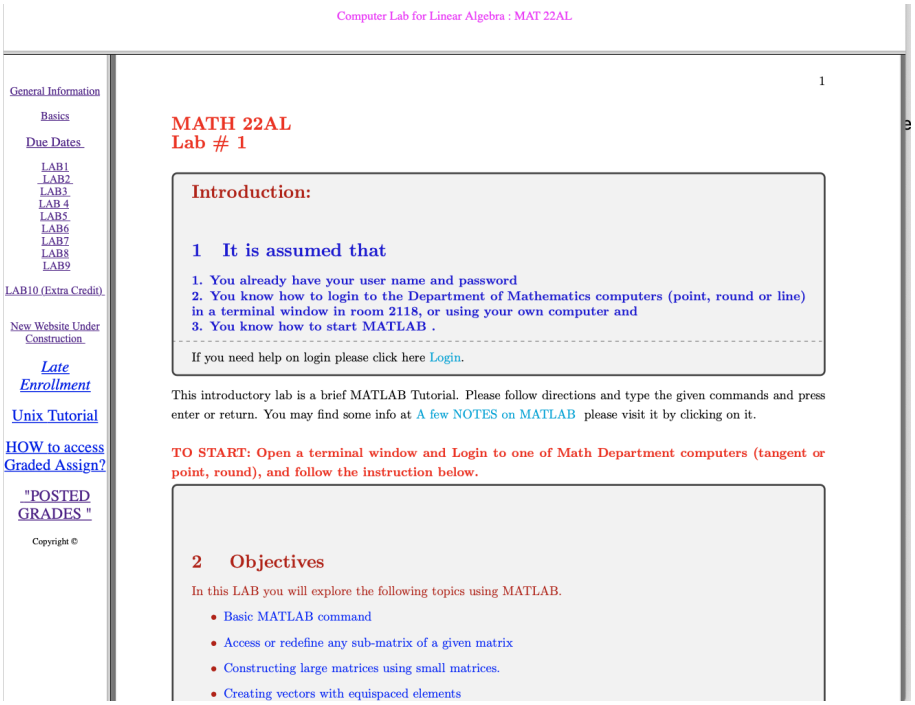


Figure 5: Opening LAB1 from the course website

4 Starting MATLAB

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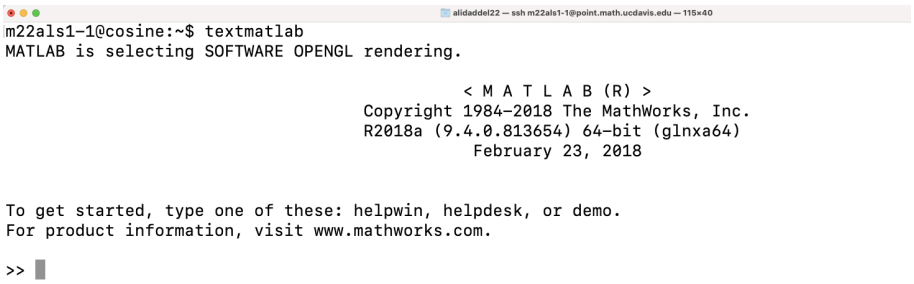
Type "textmatlab" on the command line to start a MATLAB session, it may tale 10-15 seconds for MATLAB to start.



When you see the MATLAB prompt as ">>" , your MATLAB session started.
Continue your work by Visiting the course website at
https://www.math.ucdavis.edu/~daddel/MATH22AL/22AL_Home.html
and click on LAB1, you will see the instruction and information Please follow the instruction until you finish your work.
here are pictures of LAB 1 on the website.
The rest of this handout presenting few needed steps from starting a LAB, editing, viewing and submitting your LAB.

```
m22als1-1@cosine:~$ textmatlab
MATLAB is selecting SOFTWARE OPENGL rendering.

                                          < M A T L A B (R) >
                                Copyright 1984-2018 The MathWorks, Inc.
                                R2018a (9.4.0.813654) 64-bit (glnxa64)
                                           February 23, 2018


To get started, type one of these: helpwin, helpdesk, or demo.
For product information, visit www.mathworks.com.

>> diary LAB1.text
>>
```


General Information

Basics

Due Dates

LAB1
LAB2
LAB3
LAB 4
LAB5
LAB6
LAB7
LAB8
LAB9

LAB10 (Extra Credit)

New Website Under Construction

Late Enrollment

Unix Tutorial

HOW to access Graded Assign?

"POSTED GRADES "

MATH 22AL
Lab # 1

Introduction:

1 It is assumed that

1. **You already have your user name and password**
2. **You know how to login to the Department of Mathematics computers (point, round or line) in a terminal window in room 2118, or using your own computer and**
3. **You know how to start MATLAB .**

If you need help on login please click here Login.

This introductory lab is a brief MATLAB Tutorial. Please follow directions and type the given commands and press enter or return. You may find some info at A few NOTES on MATLAB please visit it by clicking on it.

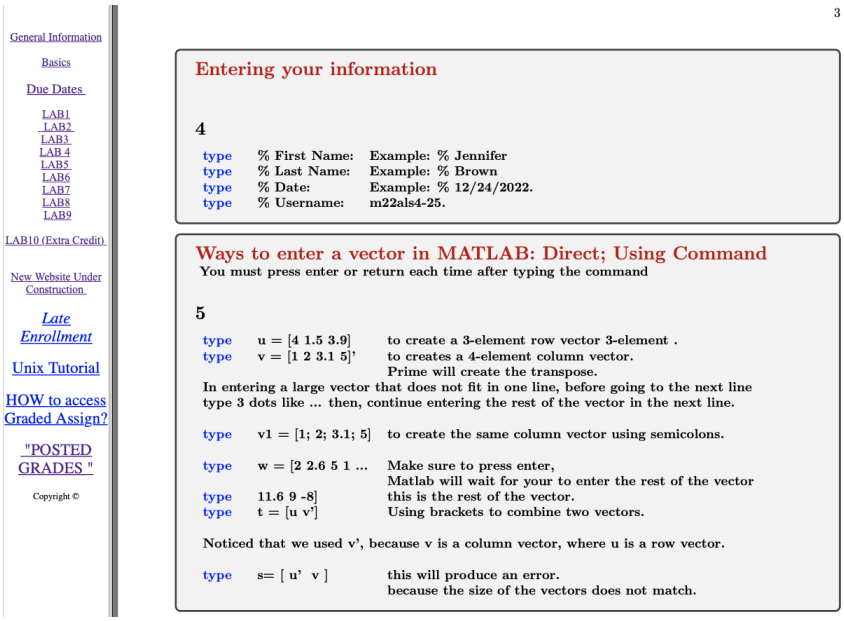
TO START: Open a terminal window and Login to one of Math Department computers (tangent or point, round), and follow the instruction below.

2 Objectives

In this LAB you will explore the following topics using MATLAB.

- Basic MATLAB command
- Access or redefine any sub-matrix of a given matrix
- Constructing large matrices using small matrices.
- Creating vectors with equispaced elements

Scroll down to see how to start the LAB:



Entering your information

4

type	% First Name:	Example: % Jennifer
type	% Last Name:	Example: % Brown
type	% Date:	Example: % 12/24/2022.
type	% Username:	m22als4-25.

Ways to enter a vector in MATLAB: Direct; Using Command

You must press enter or return each time after typing the command

5

type	u = [4 1.5 3.9]	to create a 3-element row vector 3-element .
type	v = [1 2 3.1 5]'	to creates a 4-element column vector. Prime will create the transpose.

In entering a large vector that does not fit in one line, before going to the next line type 3 dots like ... then, continue entering the rest of the vector in the next line.

type	v1 = [1; 2; 3.1; 5]	to create the same column vector using semicolons.
type	w = [2 2.6 5 1 ...	Make sure to press enter, Matlab will wait for your to enter the rest of the vector
type	11.6 9 -8]	this is the rest of the vector.
type	t = [u v']	Using brackets to combine two vectors.

Noticed that we used v', because v is a column vector, where u is a row vector.

type	s= [u' v]	this will produce an error. because the size of the vectors does not match.

5 Starting LAB 1

diary LAB1.text

First of all you need to type diary LAB1.text
by typing this you are asking MATLAB to open a file on the background call it LAB1.text and copy everything you type on it Until you type "diary off"

A Few things worth paying attention:
1. The name of the file must be exactly LAB1.text otherwise it will not be graded.
2. You can not see the file now, but later on you can view it by pico or an other editor.
3. If you forget to type diary LAB1.text nothing will be saved, you must redo the work.
4. If you have an unstable Internet, it is good idea to save LAB1.text and reopen it every 15 minutes or so, by typing
save
diary off
diary LAB1.text
load

As you see in the following picture, I entered my information and followed the instructions. After typing "v1" I decided to stop, save my work and do it later.

Causion

Please note that you need to finish the LAB before exiting MATLAB. I am exiting here just to show you how it can be done.

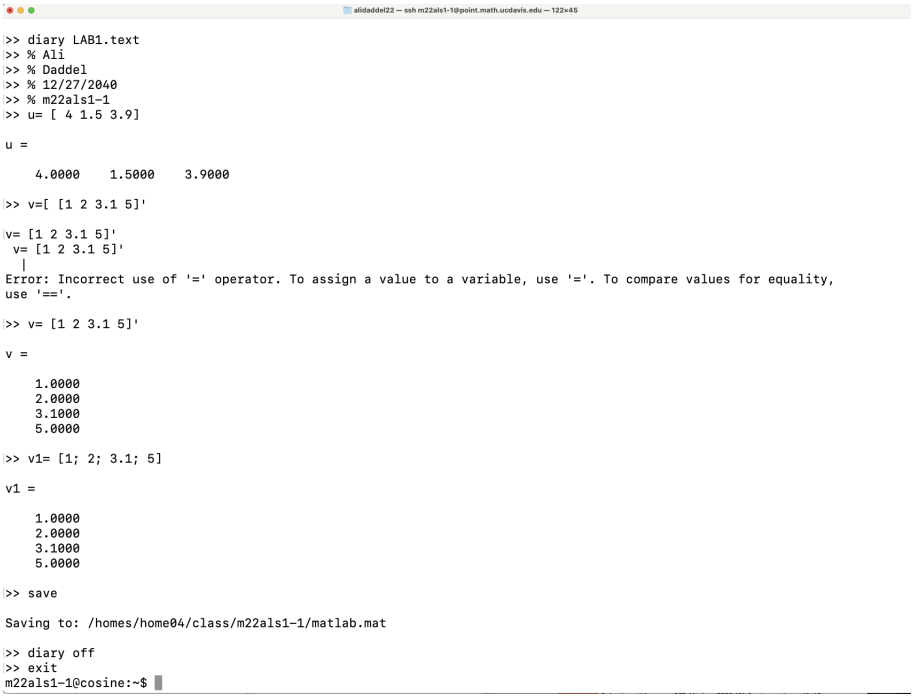
I typed:
save
diary off
exit

6 Exiting LAB1.text

save: stores all variables (matrices) in a binary format in a file called matlab.mat
this for my future use, when I want to continue the work. It only saves active variables in the session and overwrites the previous file.

diary off: Stops writing on the file "LAB1.text" and saves the file and close the file.

exit: exit MATLAB



7 Continuing Your LAB

Now To continue and finish LAB1, after opening a terminal window and logging to a Math Department server, I typed textmatlab then typed
diary LAB1.text

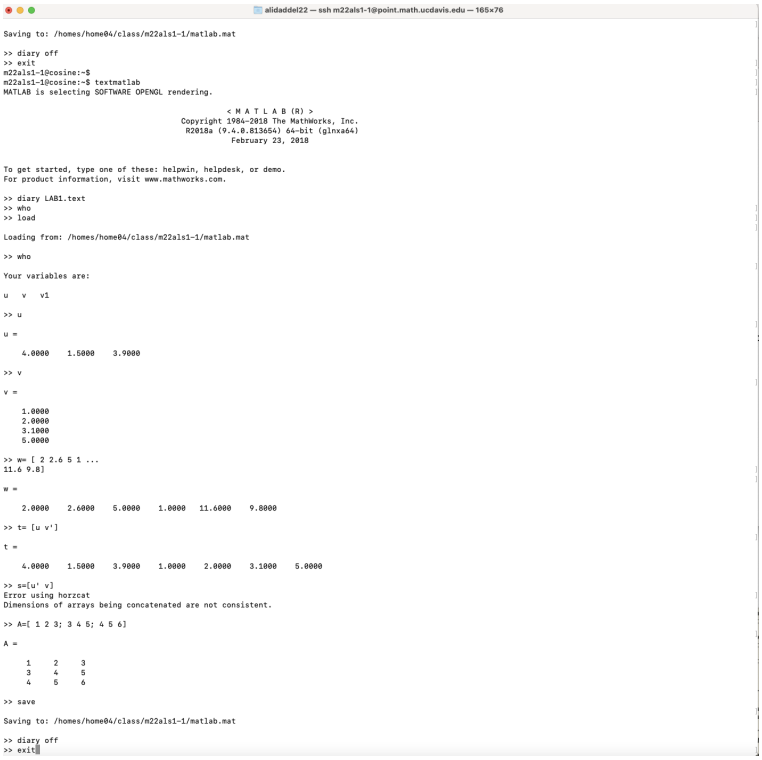
Note

diary LAB1.text
This time MATLAB opens the existing file and appends (adds) whatever I type to the end of the file LAB1.text.
The name of the file must be exactly LAB1.text otherwise your work will be stored in two different files and your lab will not pass.

who
MATLAB does not recall any of the variables, then I typed
load
then, I typed
who
as you see MATLAB shows me the variables. I continue LAB1 and the assumed lab is done after typing the matrix "A". So I typed the three commands

diary LAB1.text

Ending LAB commands
save
diary off
exit



8 Editing Your LAB

Editing LAB1.text

During working on LAB1, I made few mistakes, I use an editor called pico to view and edit (delete the errors and insert missing texts) the content of the file LAB1.text.

9 Pico Commands

Pico Commands

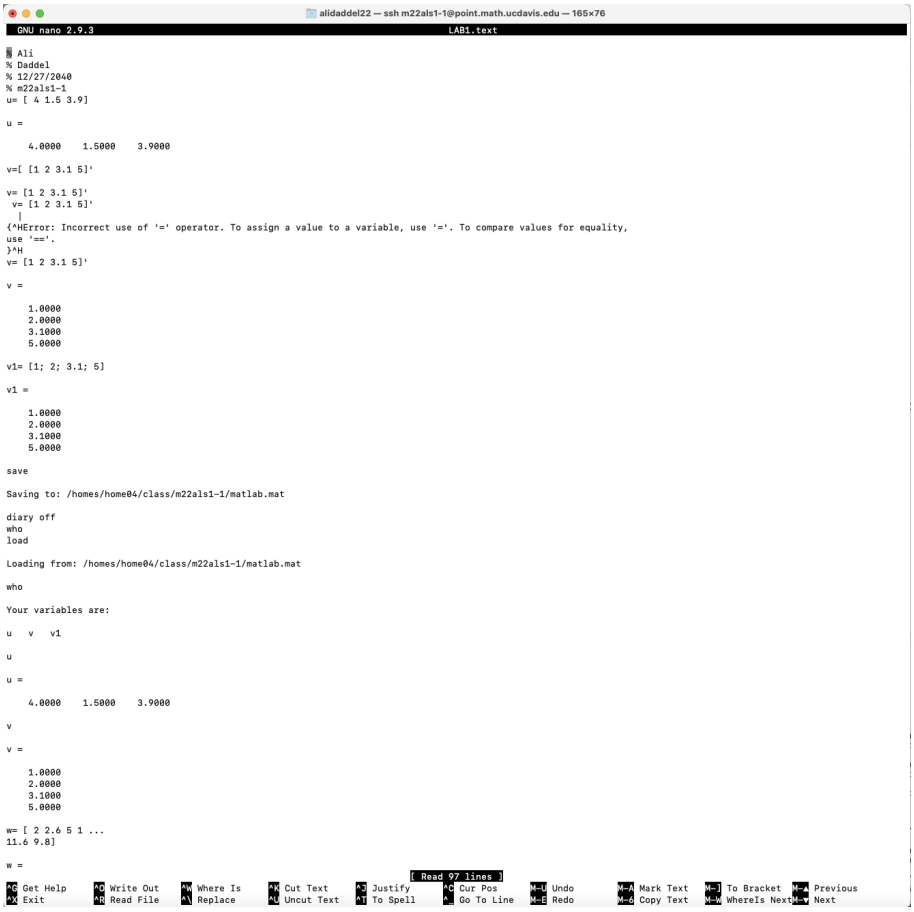
Pico a user friendly editor. The last two line of the window shows some of the useful commands. for example: Ctrl-o means hold the control key and press x

Ctrl-o	write out (save)	Ctrl-k	Delete the line the cursor is on
Ctrl-x	exit Pico	Ctrl-u	Restore the last line that was deleted
Ctrl-d	Delete the character the cursor is on	Ctrl-e	Delete to end of current line
Ctrl-a	Beginning of current line	Ctrl-e	End of current line
Ctrl-v	Forward one screen.	Ctrl-y	Backward one screen

Saving a File: To save the file (LAB1.text), use the Ctrl-o (write out) command. It will ask you the file name to use, you can return to confirm the current name. If you exit Pico before saving the changes by using the Ctrl-x (exit) command, you will be given a chance to decide about the file name.

10 Viewing LAB1.text

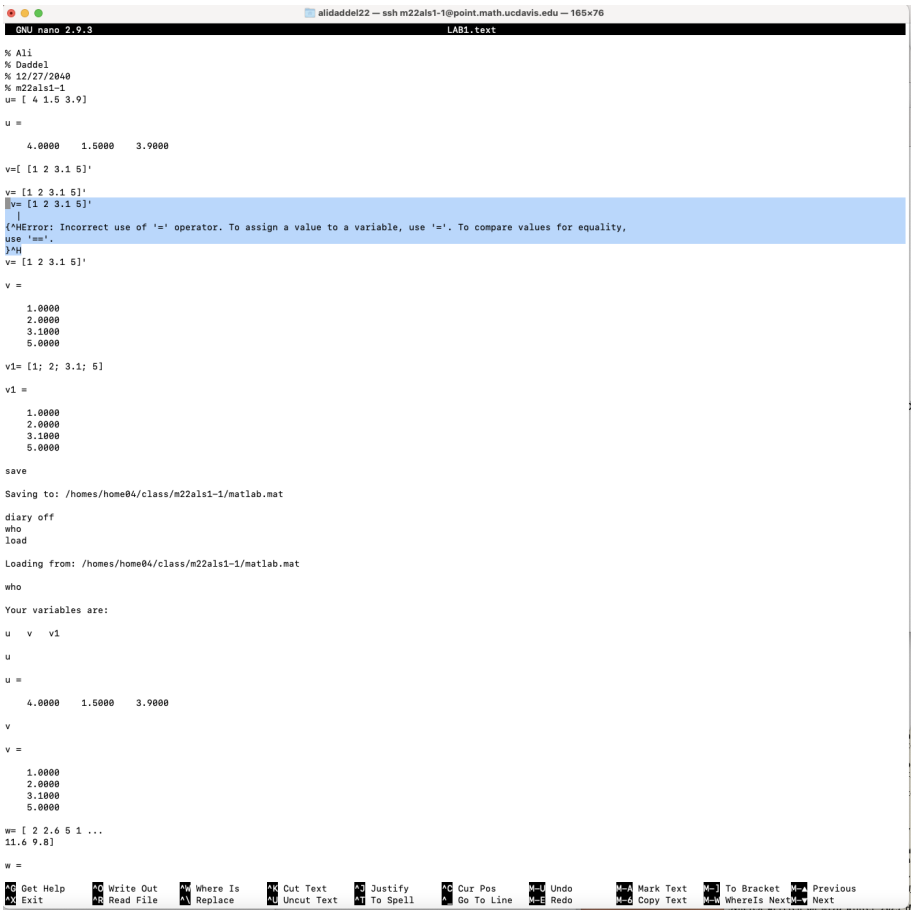
When I stopped and restart doing LAB1, i had to type several commands that are not needed to be in my submission. I highlighted those lines and will use Ctrl-k to delete those lines.

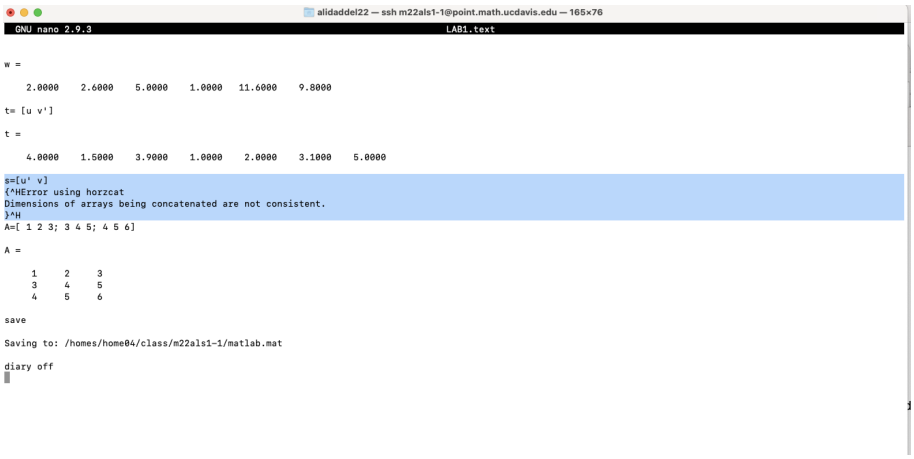


11 Deleting Errors

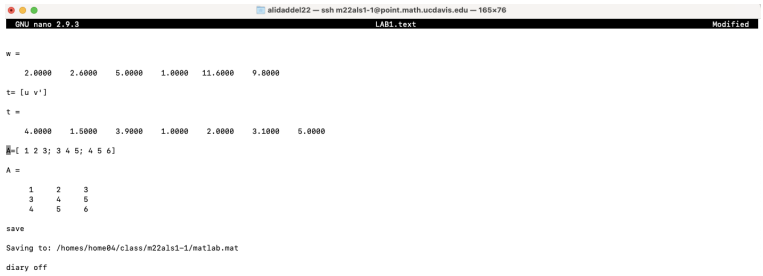
Also there were few errors on my typing, that I will delete them using Ctrl-k. they are highlighted in the picture below:

A few more errors needs to be deleted:

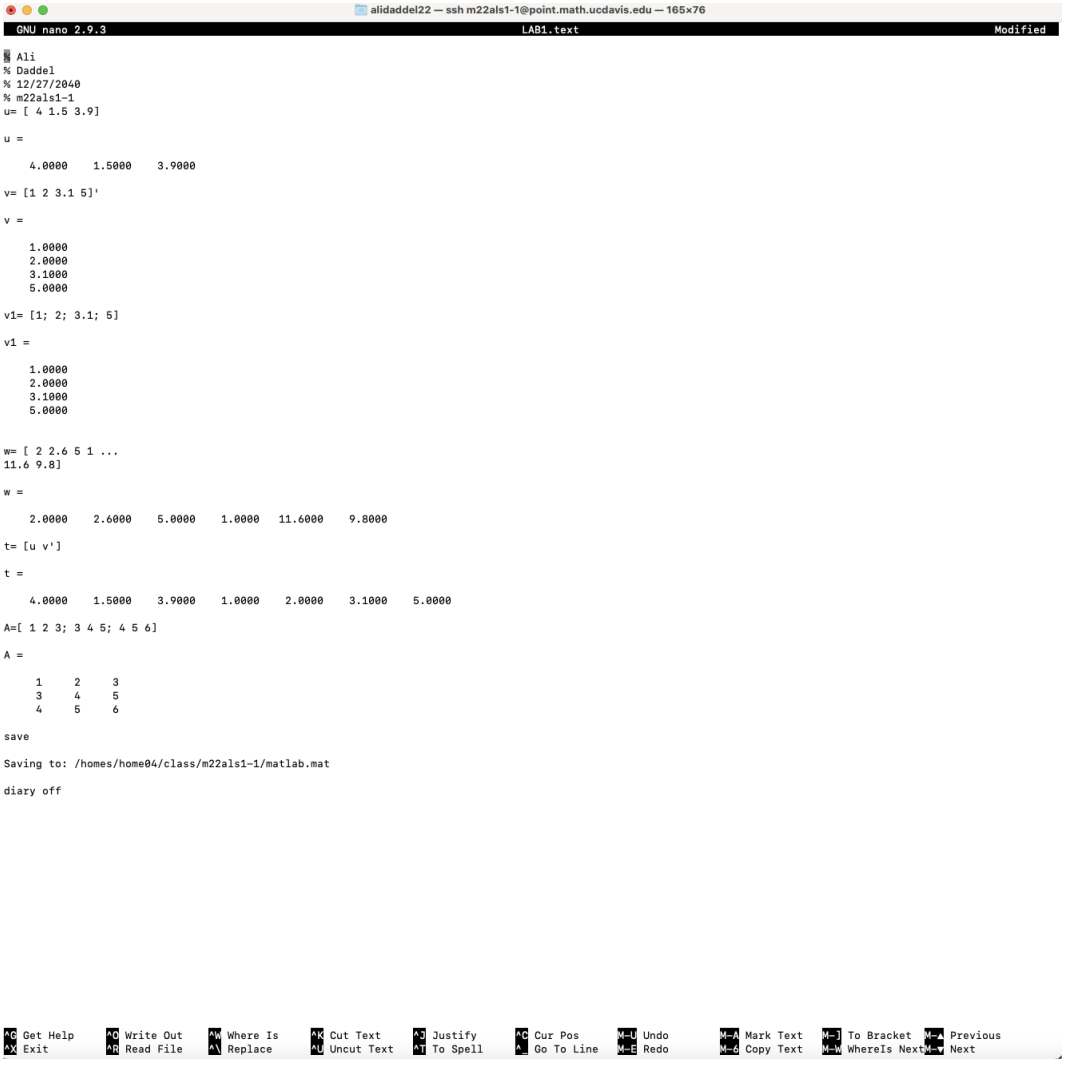

alidaddel22 — ssh m22als1-1@point.math.ucdavis.edu — 165×76
GNU nano 2.9.3 LAB1.text
% Ali
% Daddel
% 12/27/2040
% m22als1-1
u= [4 1.5 3.9]
u =
4.0000 1.5000 3.9000
v=[[1 2 3.1 5]'
v= [1 2 3.1 5]'
v= [1 2 3.1 5]'
{^HError: Incorrect use of '=' operator. To assign a value to a variable, use '='. To compare values for equality,
use '=='.
}^H
v= [1 2 3.1 5]'
v =
1.0000
2.0000
3.1000
5.0000
v1= [1; 2; 3.1; 5]
v1 =
1.0000
2.0000
3.1000
5.0000
save
Saving to: /homes/home04/class/m22als1-1/matlab.mat
diary off
who
load
Loading from: /homes/home04/class/m22als1-1/matlab.mat
who
Your variables are:
u v v1
u
u =
4.0000 1.5000 3.9000
v
v =
1.0000
2.0000
3.1000
5.0000
w= [2 2.6 5 1 ...
11.6 9.8]
w =
^G Get Help ^O Write Out ^W Where Is ^K Cut Text ^J Justify ^C Cur Pos M-U Undo M-A Mark Text M-] To Bracket M-▲ Previous
^X Exit ^R Read File ^\ Replace ^U Uncut Text ^T To Spell ^_ Go To Line M-E Redo M-6 Copy Text M-W WhereIs Next M-▼ Next


alidaddel22 — ssh m22als1-1@point.math.ucdavis.edu — 165×76
GNU nano 2.9.3 LAB1.text
w =
2.0000 2.6000 5.0000 1.0000 11.6000 9.8000
t= [u v']
t =
4.0000 1.5000 3.9000 1.0000 2.0000 3.1000 5.0000
s=[u' v]
{^HError using horzcat
Dimensions of arrays being concatenated are not consistent.
}^H
A=[1 2 3; 3 4 5; 4 5 6]
A =
1 2 3
3 4 5
4 5 6
save
Saving to: /homes/home04/class/m22als1-1/matlab.mat
diary off

Here is the picture after deleting:

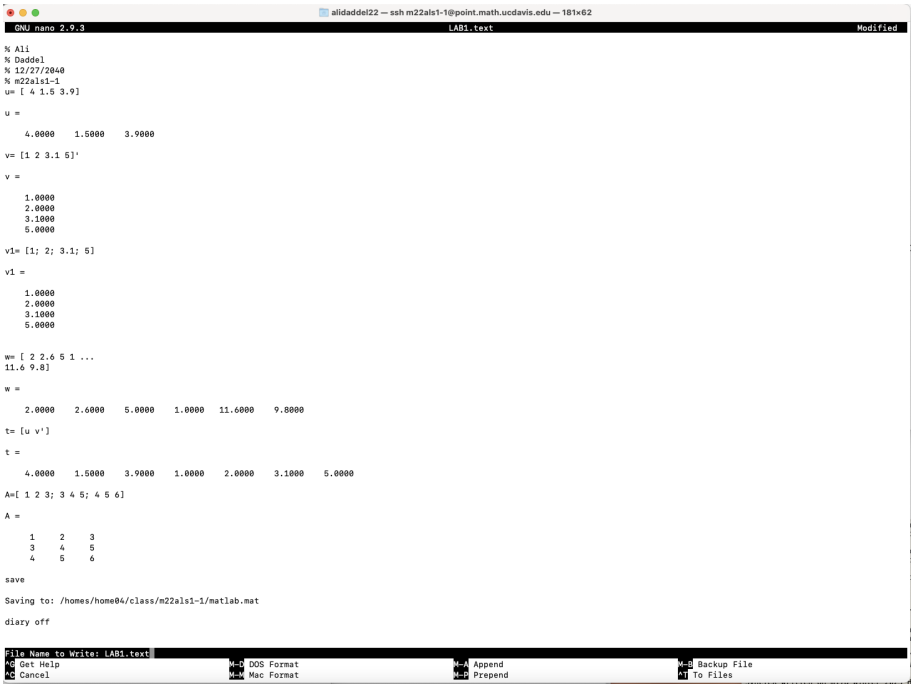


Here is a picture of the clean LAB1.text file. This is not the entire lab, I just did the part of it to show how it works.

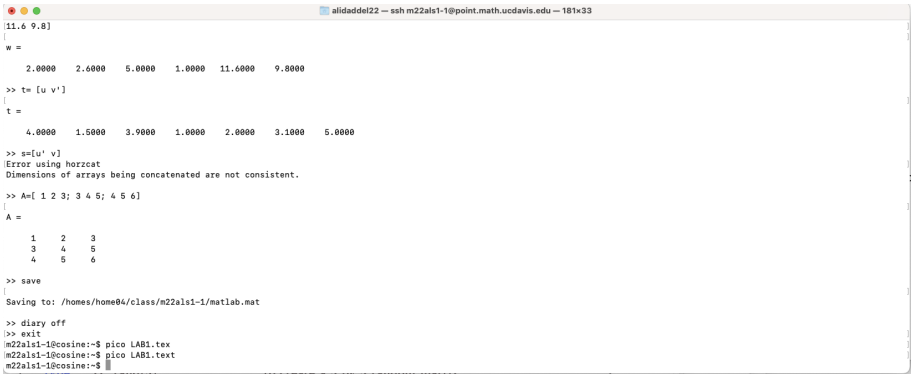


12 Saving Changes

I used Ctrl-O to save changes. Pico asking me if I want to save on the same file?
Filename to Write: LAB1.text
Press return to confirm the file name.

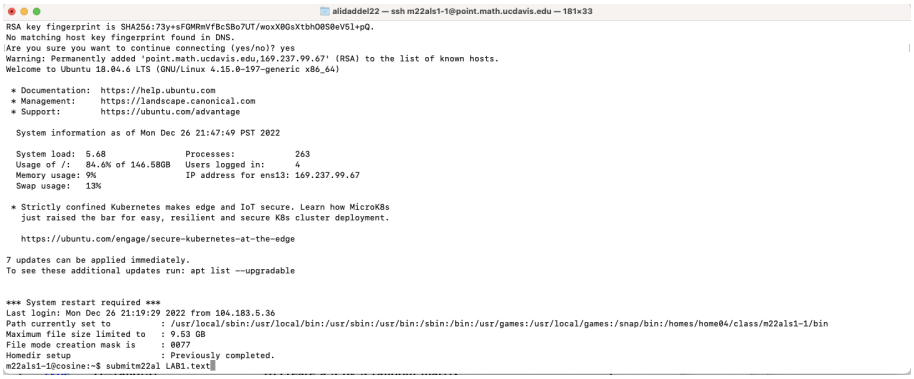


Then I used Ctrl-X to exit pico and get back to computer command line. I typed ssh point to connect to a math Department server, this is needed when you work at terminals in room 1118, if you are using your own computer, you don't need this.



13 Submitting your LAB

To submit LAB1.text I typed :
submitm22al LAB1.text



14 Confirmation of submission

When LAB1 is sent, it will write on the screen:
m22als1-1 sending LAB1.text at Mon Dec. 26 21:48:28 to ta22al@math.ucdavis.edu
This is your confirmation, please take a picture or screenshot and keep it until the end of the quarter.

15 Logging out

Now it is time to logout: