

SCS2211 - LABORATORY II Practical – 09

01.(a)

The screenshot displays the Octave software interface. The Command Window on the right shows the following commands and their outputs:

```
>> r1=[1 2 3 4 5]
r1 =
    1    2    3    4    5

>> r2=[5 4 3 2 1]
r2 =
    5    4    3    2    1

>> a=[r1;r2;r1;r2;r1]
a =
    1    2    3    4    5
    5    4    3    2    1
    1    2    3    4    5
    5    4    3    2    1
    1    2    3    4    5

>>
```

The Workspace window on the left shows the following variables:

Name	Class	Dimension	Value	Attribute
r1	double	1x5	[1, 2, 3, 4, 5]	
r2	double	1x5	[5, 4, 3, 2, 1]	
a	double	5x5	[1, 2, 3, 4, 5, 4...	

The Command History window at the bottom shows the following commands:

```
xdistance
# Octave 7.3.0, Wed Feb 01 11:36:32 2023 GMT <unkn
r1=[1 2 3 4 5]
r2=[5 4 3 2 1]
a=[r1;r2;r1;r2;r1]
```

(b)

The image displays two screenshots of the Octave software interface, showing the workspace, command window, and command history.

Top Screenshot:

- File Browser:** Shows the current directory as `C:\Users\Lenovo`. The file list includes `que[bb]`, `gg.png`, `Firefox.Ink`, `aaaa.m`, `aa.m`, `.viminfo`, and `.lesshst`.
- Workspace:** A table showing variables in the workspace:

Name	Class	Dimension	Value	Attribute
r1	double	5x1	[1; 2; 3; 4; 5]	
r2	double	5x1	[5; 4; 3; 2; 1]	
a	double	5x5	[1, 2, 3, 4, 5; 4...	
b	double	5x5	[1, 5, 1, 5, 1; 2, 4...	
- Command Window:** Shows the following commands and their outputs:


```
>> r1=[1; 2; 3; 4; 5]
r1 =
     1
     2
     3
     4
     5

>> r2=[5; 4; 3; 2; 1]
r2 =
     5
     4
     3
     2
     1

>> b=[r1 r2 r1 r2 r1]
b =
     1     5     1     5     1
     2     4     2     4     2
     3     3     3     3     3
     4     2     4     2     4
```
- Command History:** Shows the sequence of commands entered:


```
r2=[5 4 3 2 1]
a=[r1;r2;r1;r2;r1]
r1=[1; 2; 3; 4; 5]
r2=[5; 4; 3; 2; 1]
b=[r1 r2 r1 r2 r1]
```

Bottom Screenshot:

- File Browser:** Same as the top screenshot.
- Workspace:** Same as the top screenshot.
- Command Window:** Shows the same commands and outputs as the top screenshot.


```
>> r1=[1; 2; 3; 4; 5]
r1 =
     1
     2
     3
     4
     5

>> r2=[5; 4; 3; 2; 1]
r2 =
     5
     4
     3
     2
     1

>> b=[r1 r2 r1 r2 r1]
b =
     1     5     1     5     1
     2     4     2     4     2
     3     3     3     3     3
     4     2     4     2     4
     5     1     5     1     5
```
- Command History:** Shows the sequence of commands entered:


```
r2=[5 4 3 2 1]
a=[r1;r2;r1;r2;r1]
r1=[1; 2; 3; 4; 5]
r2=[5; 4; 3; 2; 1]
b=[r1 r2 r1 r2 r1]
```

02. (a)

Octave Command Window:

```
>> c=a .* b
c =
    1    10     3    20     5
   10    16     6     8     2
     3     6     9    12    15
   20     8    12     4     4
     5     2    15     4    25
```

Workspace:

Name	Class	Dimension	Value	Attribute
r1	double	5x1	[1; 2; 3; 4; 5]	
r2	double	5x1	[5; 4; 3; 2; 1]	
a	double	5x5	[1, 2, 3, 4, 5; 4, 5, 1, 2, 3; ...]	
b	double	5x5	[1, 5, 1, 5, 1; 2, 4, ...]	
c	double	5x5	[1, 10, 3, 20, 5; 10, 16, 6, 8, 2; ...]	

Command History:

```
a=[r1;r2;r1;r2;r1]
r1=[1; 2; 3; 4; 5]
r2=[5; 4; 3; 2; 1]
b=[r1 r2 r1 r2 r1]
c=a .* b
```

(b)

Octave Command Window:

```
>> d=a' .* b
d =
    1    25     1    25     1
    4    16     4    16     4
    9     9     9     9     9
   16     4    16     4    16
   25    25    25    25    25
```

Workspace:

Name	Class	Dimension	Value	Attribute
r1	double	5x1	[1; 2; 3; 4; 5]	
r2	double	5x1	[5; 4; 3; 2; 1]	
a	double	5x5	[1, 2, 3, 4, 5; 4, 5, 1, 2, 3; ...]	
b	double	5x5	[1, 5, 1, 5, 1; 2, 4, ...]	
c	double	5x5	[1, 10, 3, 20, 5; 10, 16, 6, 8, 2; ...]	
d	double	5x5	[1, 25, 1, 25, 1; 4, 16, 4, 16, 4; ...]	

Command History:

```
r1=[1; 2; 3; 4; 5]
r2=[5; 4; 3; 2; 1]
b=[r1 r2 r1 r2 r1]
c=a .* b
d=a' .* b
```

(c)

Octave

File Edit Debug Tools Window Help News

Current Directory: C:\Users\Lenovo

File Browser

C:\Users\Lenovo

Name

- que[bb]
- gg.png
- Firefox.Ink
- aaaa.m
- aa.m
- .viminfo
- .lesshst

Workspace

Name	Class	Dimension	Value	Attribute
r1	double	5x1	[1; 2; 3; 4; 5]	
r2	double	5x1	[5; 4; 3; 2; 1]	
a	double	5x5	[1, 2, 3, 4, 5; 5, 4, 3, 2, 1]	
b	double	5x5	[1, 5, 1, 5, 1; 2, 4, 2, 4, 2]	
c	double	5x5	[1, 10, 3, 20, 5; 1, 10, 3, 20, 5]	
d	double	5x5	[1, 25, 1, 25, 1; 4, 16, 4, 16, 4]	

Command History

```

r2=[5; 4; 3; 2; 1]
b=[r1 r2 r1 r2 r1]
c=a .* b
d=a' .* b
e=a .* b'

```

Command Window

```

>> e=a .* b'
e =
     1     4     9    16    25
    25    16     9     4     1
     1     4     9    16    25
    25    16     9     4     1
     1     4     9    16    25

```

Command Window Documentation Variable Editor Editor

Profiler

80°F 11:12 PM 2/9/2023

03.

(a)

Octave

File Edit Debug Tools Window Help News

Current Directory: C:\Users\Lenovo

File Browser

C:\Users\Lenovo

Name

- que[bb]
- gg.png
- Firefox.Ink
- aaaa.m
- aa.m
- .viminfo
- .lesshst

Workspace

Name	Class	Dimension	Value	Attribute
r1	double	5x1	[1; 2; 3; 4; 5]	
r2	double	5x1	[5; 4; 3; 2; 1]	
a	double	5x5	[1, 2, 3, 4, 5; 5, 4, 3, 2, 1]	
ans	double	5x5	[1, 1, 1, 1, 1; 1, 1, 1, 1, 1]	
b	double	5x5	[1, 5, 1, 5, 1; 2, 4, 2, 4, 2]	
c	double	5x5	[1, 10, 3, 20, 5; 1, 10, 3, 20, 5]	

Command History

```

b=[r1 r2 r1 r2 r1]
c=a .* b
d=a' .* b
e=a .* b'
ones(5,5)

```

Command Window

```

>> ones(5,5)
ans =
     1     1     1     1     1
     1     1     1     1     1
     1     1     1     1     1
     1     1     1     1     1
     1     1     1     1     1

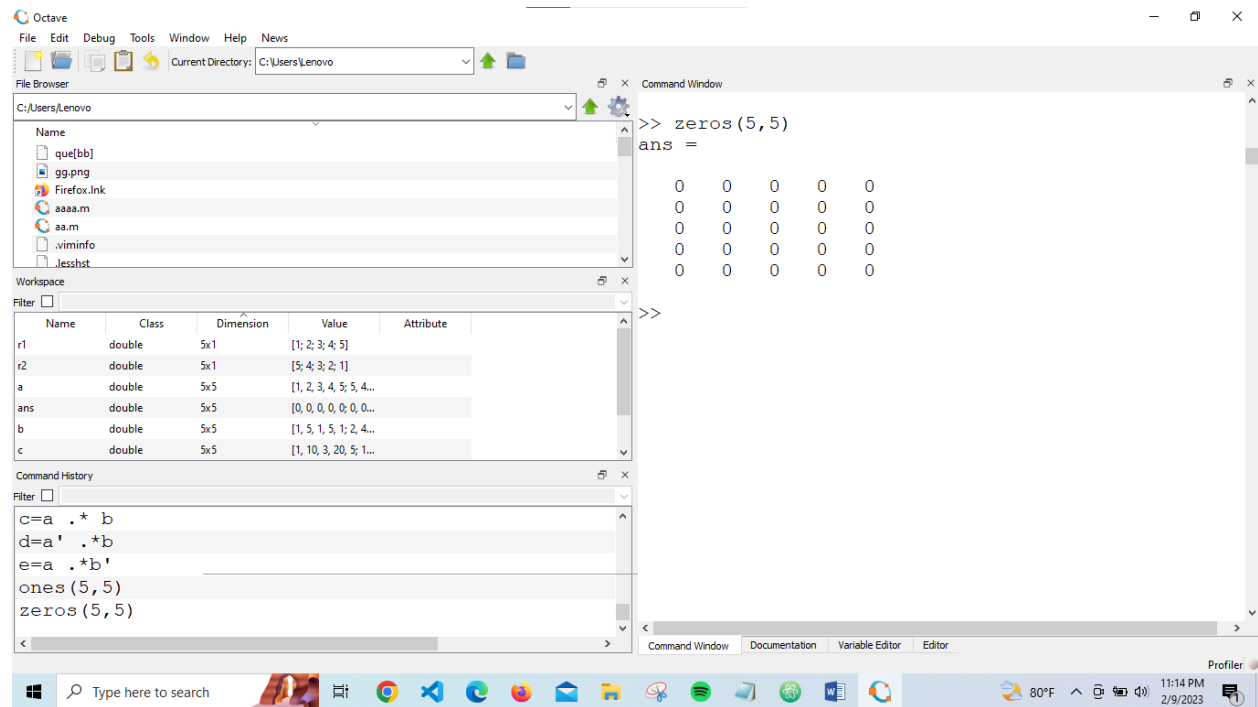
```

Command Window Documentation Variable Editor Editor

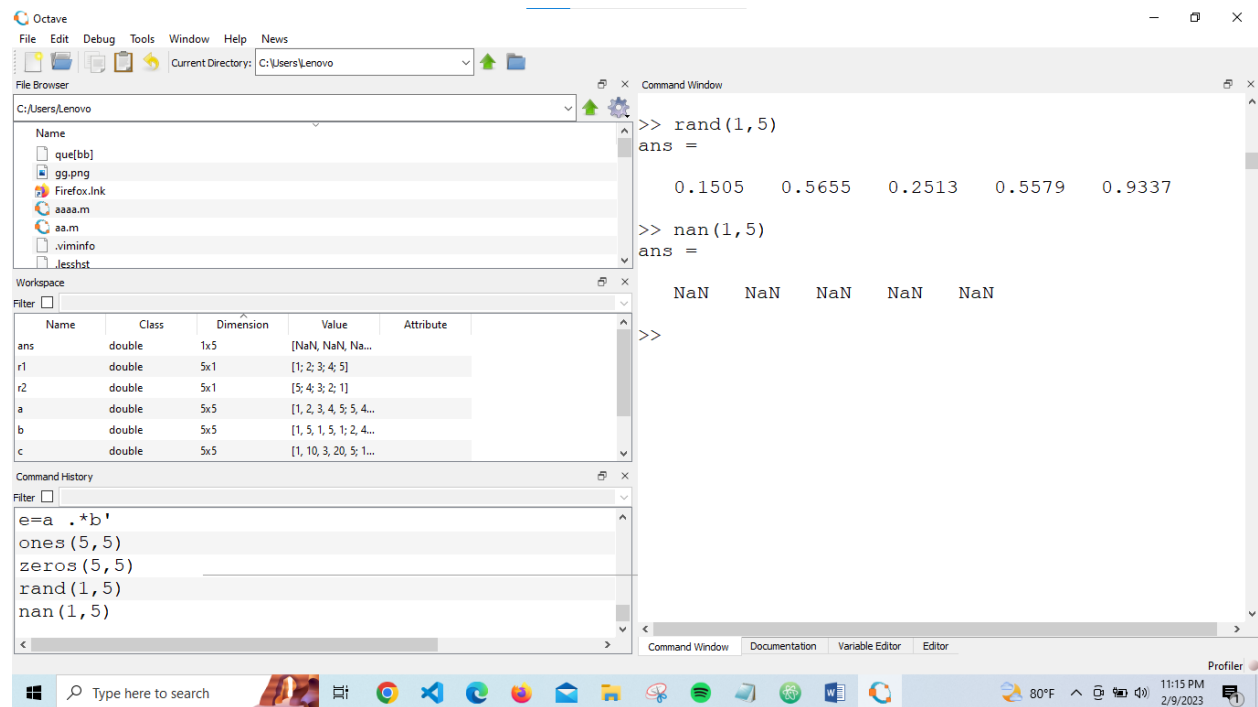
Profiler

80°F 11:13 PM 2/9/2023

(b)



(c)(d)



The screenshot shows the MATLAB R2023a environment. The File Browser on the left displays the current directory C:\Users\lenovo. The Workspace pane shows a table of variables:

Name	Class	Dimension	Value	Attribute
x	double	1x1000	[0, 0.012579, 0.0...	
ans	double	1x5	[NaN, NaN, Na...	
r1	double	5x1	[1; 2; 3; 4; 5]	
r2	double	5x1	[5; 4; 3; 2; 1]	
a	double	5x5	[1, 2, 3, 4, 5; 4...	
b	double	5x5	[1, 5, 1, 5, 1; 2...	

The Command Window shows the execution of the command `x=linspace(0,4*pi,1000)`. The output is a 1x1000 double array. The matrix is displayed in groups of 5 columns:

```

> x=linspace(0,4*pi,1000)
=
Columns 1 through 5:
    0    0.0126    0.0252    0.0377    0.0503
Columns 6 through 10:
    0.0629    0.0755    0.0881    0.1006    0.1132
Columns 11 through 15:
    0.1258    0.1384    0.1509    0.1635    0.1761
Columns 16 through 20:
    0.1887    0.2013    0.2138    0.2264    0.2390
Columns 21 through 25:
    0.2516    0.2642    0.2767    0.2893    0.3019
Columns 26 through 30:
    0.3143    0.3268    0.3393    0.3518    0.3643
Columns 31 through 35:
    0.3768    0.3893    0.4018    0.4143    0.4268
Columns 36 through 40:
    0.4393    0.4518    0.4643    0.4768    0.4893
Columns 41 through 45:
    0.5018    0.5143    0.5268    0.5393    0.5518
Columns 46 through 50:
    0.5643    0.5768    0.5893    0.6018    0.6143
Columns 51 through 55:
    0.6268    0.6393    0.6518    0.6643    0.6768
Columns 56 through 60:
    0.6893    0.7018    0.7143    0.7268    0.7393
Columns 61 through 65:
    0.7518    0.7643    0.7768    0.7893    0.8018
Columns 66 through 70:
    0.8143    0.8268    0.8393    0.8518    0.8643
Columns 71 through 75:
    0.8768    0.8893    0.9018    0.9143    0.9268
Columns 76 through 80:
    0.9393    0.9518    0.9643    0.9768    0.9893
Columns 81 through 85:
    1.0018    1.0143    1.0268    1.0393    1.0518
Columns 86 through 90:
    1.0643    1.0768    1.0893    1.1018    1.1143
Columns 91 through 95:
    1.1268    1.1393    1.1518    1.1643    1.1768
Columns 96 through 100:
    1.1893    1.2018    1.2143    1.2268    1.2393
Columns 101 through 105:
    1.2518    1.2643    1.2768    1.2893    1.3018
Columns 106 through 110:
    1.3143    1.3268    1.3393    1.3518    1.3643
Columns 111 through 115:
    1.3768    1.3893    1.4018    1.4143    1.4268
Columns 116 through 120:
    1.4393    1.4518    1.4643    1.4768    1.4893
Columns 121 through 125:
    1.5018    1.5143    1.5268    1.5393    1.5518
Columns 126 through 130:
    1.5643    1.5768    1.5893    1.6018    1.6143
Columns 131 through 135:
    1.6268    1.6393    1.6518    1.6643    1.6768
Columns 136 through 140:
    1.6893    1.7018    1.7143    1.7268    1.7393
Columns 141 through 145:
    1.7518    1.7643    1.7768    1.7893    1.8018
Columns 146 through 150:
    1.8143    1.8268    1.8393    1.8518    1.8643
Columns 151 through 155:
    1.8768    1.8893    1.9018    1.9143    1.9268
Columns 156 through 160:
    1.9393    1.9518    1.9643    1.9768    1.9893
Columns 161 through 165:
    2.0018    2.0143    2.0268    2.0393    2.0518
Columns 166 through 170:
    2.0643    2.0768    2.0893    2.1018    2.1143
Columns 171 through 175:
    2.1268    2.1393    2.1518    2.1643    2.1768
Columns 176 through 180:
    2.1893    2.2018    2.2143    2.2268    2.2393
Columns 181 through 185:
    2.2518    2.2643    2.2768    2.2893    2.3018
Columns 186 through 190:
    2.3143    2.3268    2.3393    2.3518    2.3643
Columns 191 through 195:
    2.3768    2.3893    2.4018    2.4143    2.4268
Columns 196 through 200:
    2.4393    2.4518    2.4643    2.4768    2.4893
Columns 201 through 205:
    2.5018    2.5143    2.5268    2.5393    2.5518
Columns 206 through 210:
    2.5643    2.5768    2.5893    2.6018    2.6143
Columns 211 through 215:
    2.6268    2.6393    2.6518    2.6643    2.6768
Columns 216 through 220:
    2.6893    2.7018    2.7143    2.7268    2.7393
Columns 221 through 225:
    2.7518    2.7643    2.7768    2.7893    2.8018
Columns 226 through 230:
    2.8143    2.8268    2.8393    2.8518    2.8643
Columns 231 through 235:
    2.8768    2.8893    2.9018    2.9143    2.9268
Columns 236 through 240:
    2.9393    2.9518    2.9643    2.9768    2.9893
Columns 241 through 245:
    3.0018    3.0143    3.0268    3.0393    3.0518
Columns 246 through 250:
    3.0643    3.0768    3.0893    3.1018    3.1143
Columns 251 through 255:
    3.1268    3.1393    3.1518    3.1643    3.1768
Columns 256 through 260:
    3.1893    3.2018    3.2143    3.2268    3.2393
Columns 261 through 265:
    3.2518    3.2643    3.2768    3.2893    3.3018
Columns 266 through 270:
    3.3143    3.3268    3.3393    3.3518    3.3643
Columns 271 through 275:
    3.3768    3.3893    3.4018    3.4143    3.4268
Columns 276 through 280:
    3.4393    3.4518    3.4643    3.4768    3.4893
Columns 281 through 285:
    3.5018    3.5143    3.5268    3.5393    3.5518
Columns 286 through 290:
    3.5643    3.5768    3.5893    3.6018    3.6143
Columns 291 through 295:
    3.6268    3.6393    3.6518    3.6643    3.6768
Columns 296 through 300:
    3.6893    3.7018    3.7143    3.7268    3.7393
Columns 301 through 305:
    3.7518    3.7643    3.7768    3.7893    3.8018
Columns 306 through 310:
    3.8143    3.8268    3.8393    3.8518    3.8643
Columns 311 through 315:
    3.8768    3.8893    3.9018    3.9143    3.9268
Columns 316 through 320:
    3.9393    3.9518    3.9643    3.9768    3.9893
Columns 321 through 325:
    4.0018    4.0143    4.0268    4.0393    4.0518
Columns 326 through 330:
    4.0643    4.0768    4.0893    4.1018    4.1143
Columns 331 through 335:
    4.1268    4.1393    4.1518    4.1643    4.1768
Columns 336 through 340:
   
```

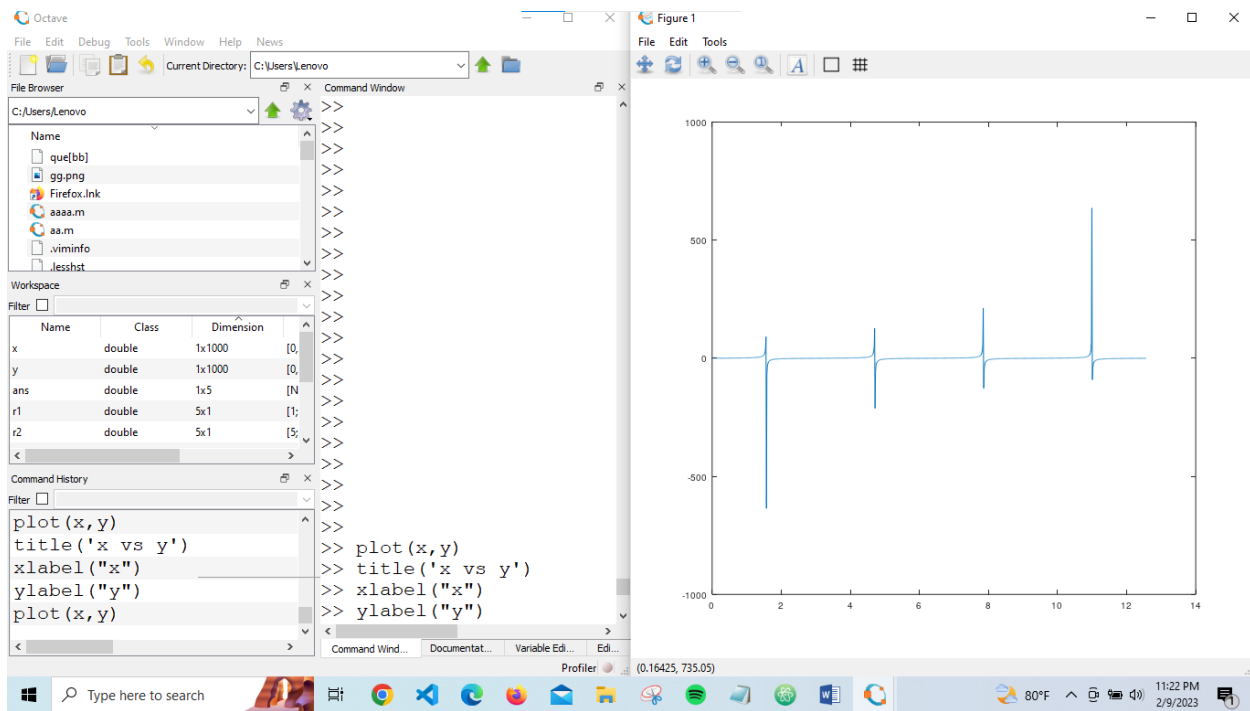
The screenshot shows the Octave GUI with the following panels:

- File Browser:** Displays the current directory `C:\Users\lenovo` with a list of files: `que[bb]`, `gg.png`, `Firefox.lnk`, `aaaa.m`, `aa.m`, `.viminfo`, and `.lessht`.
- Workspace:** Shows a table of variables in the workspace.

Name	Class	Dimension	Value	Attribute
x	double	1x1000	[0, 0.012579, 0.0...	
y	double	1x1000	[0, 0.012580, 0.0...	
ans	double	1x5	[NaN, NaN, Na...	
r1	double	5x1	[1; 2; 3; 4; 5]	
r2	double	5x1	[5; 4; 3; 2; 1]	
a	double	5x5	[1, 2, 3, 4, 5; 4...	
- Command Window:** Displays the command history, including:


```
rand(1,5)
nan(1,5)
x=linspace(0,4*pi,1000)
y=tan(x)
y=tan(x)
```
- Command History:** Shows the same command history as the Command Window.

The Windows taskbar at the bottom shows the time as 11:19 PM on 2/9/2023, with a temperature of 80°F.



05.

