

Name :Bhamare Hansraj Ravindra

Batch : A1

Roll No : 18

Experiment No.1 : Create One/Two Dimentional Array

```
--> v = [1 2 3 4 5 6]
```

v =

1. 2. 3. 4. 5. 6.

```
--> v = [1 2; 3 4; 5 6]
```

v =

1. 2.

3. 4.

5. 6.

```
--> v = []
```

v =

[]

```
--> i = eye(2,2)
```

i =

1. 0.

0. 1.

```
--> d = diag( [1,2])
```

d =

1. 0.

0. 2.

```
--> s = ['Hello'; 'Good']
```

```
s =
```

```
"Hello"
```

```
"Good"
```

```
--> z = zeros(3,3)
```

```
z =
```

```
0. 0. 0.
```

```
0. 0. 0.
```

```
0. 0. 0. --> v = ones(4,5) v =
```

```
1. 1. 1. 1. 1.
```

```
1. 1. 1. 1. 1.
```

```
1. 1. 1. 1. 1.
```

```
1. 1. 1. 1. 1.
```

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Experiment No. 2 : Insertion and Deletion of element in array.

--> v = [1 4 5; 5 8 9; 2 6 7]

v =

1. 4. 5.

5. 8. 9.

2. 6. 7.

--> v(2,[1]) = [10]

v =

1. 4. 5. 10. 8. 9.

2. 6. 7.

--> v([1,3], 3) = [55;77]

v =

1. 4. 55. 10. 8. 9.

2. 6. 77.

--> v([1,2], 2) = [44;88]

v =

1. 44. 55. 10. 88.

9. 2. 6. 77. --> v(:,2) =

[]

v =

1. 55.

10. 9.

2. 77.

--> v(1,:) = []

v =

10. 9.

2. 77.

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Experiment No. 3 : Perform arithmetic operation on array (Addition, Subtraction, Multiplication, Division, Exponentiation, Inverse, Transpose etc.)

--> a = [5 4;8 7]

a =

5. 4.

8. 7.

--> b = [1 2;4 5]

b = 1. 2.

4. 5.

--> c = a+b

= 6. 6.

12. 12.

--> d = a-b

d =

4. 2.

4. 2.

--> e = a/b

e =

-3. 2.

-4. 3.

--> e = a\b

e =

-3. -2.

4. 3. --> m =

a * b

m =

21. 30.

36. 51.

--> a = [1 2;3 4]

a =

1. 2.

3. 4.

--> a'

ans =

1. 3.

2. 4.

--> a = [1 2;4 5]

a =

1. 2.

4. 5.

--> inv(a)

ans =

-1.6666667 0.6666667

1.3333333 -0.3333333 --> a = 4

a = 4.

--> x = 6

$x =$

6. \rightarrow

x^a ans

$=$

1296.

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Experiment No. 4 : Perform Relational and Logical operations on two matrix like

a. Relational Operations - >, <, ==, <=, >=, ~=.

b. Logical Operations - ~, &, |, XOR.

--> c = [2 0;0 2]

c =

2. 0.

0. 2.

--> d = [0 1;2 0]

d =

0. 1.

2. 0.

--> c>d

ans = T F

F T

--> c<d

ans = F T

T F

> c == d ans

=

--

F F

F F --> c

>= d

ans = T

F

F T --> c

<= d

ans = F

T

T F --> c

~= d

ans = T

T

T T

--> a = [1 0 0; 0 1 0; 0 0 1]

a =

1. 0. 0.

0. 1. 0.

0. 0. 1.

--

> ~a ans

=

F T T

T F T

T T F -->

~(~a)

ans =

T F F

F T F

F F T --> v = [1

0;0 1]

v =

1. 0.

0. 1.

--> d = [0 1;1 0]

d =

0. 1.

1. 0. --> v&d ans = F F

F F

> v|d ans

=

--

T T

T T --> c = [3

5;6 7]

c =

3. 5.

6. 7.

--> v = [4 6;8 9]

v =

4. 6.

8. 9. --> x =

bitxor(c,d)

x =

3. 4.

7. 7.

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Experiment No. 5 : Solve linear expression and round it to the nearest integer value using Round,Floor,Ceil and Fix operation.

--> v = [2 6 -9;-3 7 8;2 -4 6]

v =

2. 6. -9.

-3. 7. 8.

2. -4. 6.

--> c = [15;-14;7]

c =

15.

-14.

7.

--> l = linsolve(v,c)

l =

-5.1000000

-0.4513514

0.2324324

--> fix(l)

ans = -5.

0.

0.

--> round(l)

ans = -5.

0.

0.

--> floor(l)

ans = -6.

-1.

0.

--> ceil(l)

ans =

-5. 0.

1.

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EXPERIMENT NO 6 :- Solve linear expression and plot the trigonometric functions $\sin(t)$, $\cos(t)$, $\tan(t)$, $\sec(t)$.

--> $v = \begin{bmatrix} 4 & 2 & 6 \\ 8 & 9 & 2 \\ -1 & 5 & 2 \end{bmatrix} v$

=

4. 2. 6.

8. 9. 2. -

1. 5. 2.

--> $c = \begin{bmatrix} -25 \\ -28 \\ -3 \end{bmatrix} c$

=

-25.

-28.

-3.

--> $a = \text{linsolve}(v, c)$

a =

2.6827586

0.2137931

2.3068966

--> $b = \sin(a) \ b$

=

0.4429030

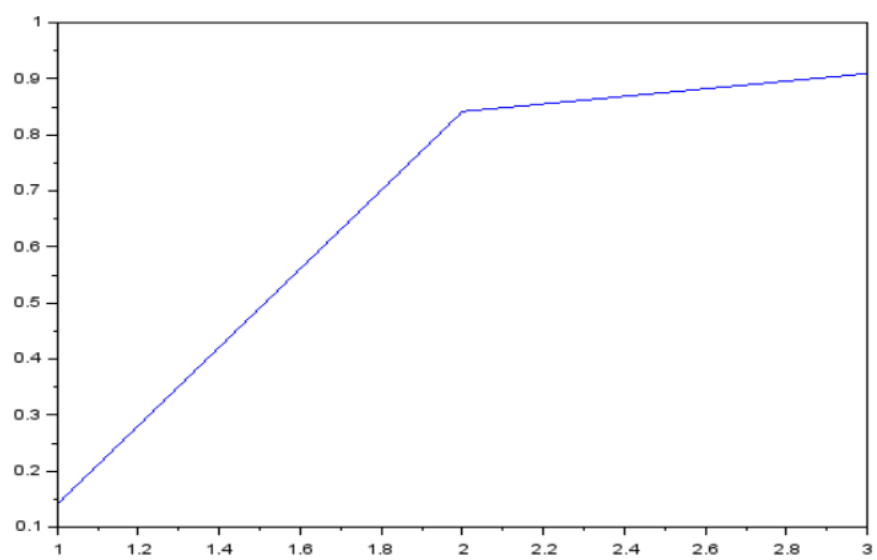
0.2121682

0.7410925

--> $\text{xtitle}(\text{"sin graph"}, \text{"x-axis"}, \text{"y-axis"})$

--> $\text{plot}(d)$





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**Experiment No. 7 : Performing Matrix Manipulation-
Concatenating,Indexing,Sorting,Reshaping,Resizing.**

--> V1 = [9 8 7;6 5 4]

V1 =

9. 8. 7.

6. 5. 4.

--> A2 = [3 2 1;10 11 12]

A2 = 3. 2. 1.

10. 11. 12.

--> V = [V1,A2]

V =

9. 8. 7. 3. 2. 1.

6. 5. 4. 10. 11. 12. --> w

=cat(1,V1,A2) w =

9. 8. 7.

6. 5. 4.

3. 2. 1.

10. 11. 12.

--> k = cat(2,V1,A2)

k =

9. 8. 7. 3. 2. 1.

6. 5. 4. 10. 11. 12.

--> V = [9 8 7 6 5 4]

V =

9. 8. 7. 6. 5. 4.

--> A = V(4)

A =

6.

--> V = [9 8; 7 6; 5 4]

V =

9. 8.

7. 6.

5. 4.

--> B = V(4)

B =

8.

--> A = [1 2 3 4 5 6 7 8]

A =

1. 2. 3. 4. 5. 6. 7. 8.

--> B = [2 7]

B =

2. 7.

--> C = A(B)

C =

2. 7.

--> A = [1 2 3 4 5 6]

A =

1. 2. 3. 4. 5. 6.

--> C = A(3:5)

C =

3. 4. 5.

--> A = [8 36 28 93 82 81 29]

A =

8. 36. 28. 93. 82. 81. 29.

--> s = gsort(A,'g','i')

s =

8. 28. 29. 36. 81. 82. 93.

--> d = gsort(A,'g','d')

d =

93. 82. 81. 36. 29. 28. 8.

--> V = [3 6 7;8 9 5]

V =

3. 6. 7.

8. 9. 5. -->

matrix(V,1,6) ans =

3. 8. 6. 9. 7. 5. -->

matrix(V,2,3) ans =

3. 6. 7.

8. 9. 5.

--> V1 = [5 4 3;7 8 9]

V1 =

5. 4. 3.

7. 8. 9.

```
--> V2 = resize_matrix(V1,3,2)
```

V2 =

5. 4.

7. 8.

0. 0.

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EXPERIMENT NO 8 :- Generating a sinusoidal wave of a given frequency and plotting with graphical enhancement-title, labeling , adding text.

--> SamplingFrequency = 1e6;

--> BufferLength = 200;

--> n = 0:(BufferLength - 1);

--> BasebandSignal = sin(2*pi*n/(SamplingFrequency/BasebandFrequency));

--> plot(n,BasebandSignal)

