# EXPERIMENT – 2

## Aim:

To perform vector operations, arithmetic operations, matrices operations and plotting graph using MATLAB command.

## Software used:

MATLAB

## Theory:

MATLAB has two different types of arithmetic operations: array operations and matrix operations. You can use these arithmetic operations to perform numeric computations, for example, adding two numbers, raising the elements of an array to a given power, or multiplying two matrices.

## Code:

**% 1D dimension**

A=[9 6 4 7 8]

B=[3 2 5 10 1]

C=[1;3;5;7;9]

A picture containing graphical user interface

Description automatically generated

**%ADD**

sum=A+B;

display(sum)

**%SUB**

diff=A-B;

display(diff)

**%MUL**

pro=A\*C;

display(pro)

**%DIV**

quo=A/B;

display(quo)

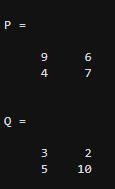
A screenshot of a computer screen

Description automatically generated with medium confidence

**% 2D dimension**

P=[9 6; 4 7]

Q=[3 2; 5 10]



**%ADD**

sum=P+Q;

display(sum)

**%SUB**

diff=P-Q;

display(diff)

**%MUL**

pro=P\*Q;

display(pro)

**%DIV**

quo=P/Q;

display(quo)

A screenshot of a computer screen

Description automatically generated with medium confidence

**%TRANSPOSE**

transpose(A)

transpose(B)

transpose(C)

transpose(P)

transpose(Q)

A screenshot of a computer

Description automatically generated with low confidence

**%INVERSE**

R=[5 3 1; 8 1 9; 5 4 5]

inv(R)

Text

Description automatically generated

**%RANDOM MATRIX**

randn(3)

rand(3)

A picture containing text

Description automatically generated

**%PLOT**

X=[9 6 3 5]

Y=[1 2 4 7]

xlabel('X-axis','FontSize',12,'Color','r')

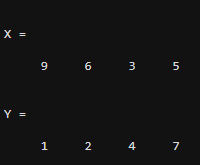
ylabel('Y-axis','FontSize',12,'Color','g')

title('X-Y Plot')

plot(X,Y)

grid on

legend



Chart, line chart

Description automatically generated

X=linspace(0,2\*pi,100);

Y1=cos(X)

hold on

plot(X,Y1,'color','c')

xlabel('X-axis','FontSize',12,'Color','r')

ylabel('Y-axis','FontSize',12,'Color','g')

title('X-Y Plot','Color','b')

grid on

Y2=sin(X)

plot(X,Y2,'color','m')

grid on

legend('cos(x)','sin(x)')

hold off

Chart, line chart

Description automatically generated

## Result:

Hence, performed vector operations, arithmetic operations, matrices operations and plotting graph using MATLAB command.