Name: Shailja Kant Tiwarri

Course: B.Sc(H) Physics Sem-5

Roll NO.-81

Aim:To check whether the give matrix is hermitia, skew-hermitian or neither.

Source Code:

clc

clear

A=[1 2+3\*%i 3+%i; 2-3\*%i 2 1-2\*%i; 3-%i 1+2\*%i 5]

B=[%i 2-3\*%i 4+5\*%i; -2-3\*%i 0 2\*%i; -4-5\*%i 2\*%i -3\*%i]

C=[-2\*%i 2+3\*%i 2-%i; -2+3\*%i %i -3\*%i; -2-%i -3\*%i 0]

for i=1:3

K=input("K=")

select K

case 1 then

disp(A,"A=");

T=A'

if A==T then

disp("Matrix A is Hermitian Matrix")

else if A==-T then

disp("Matrix A is skew-Hermitian Matrix")

else disp("Matrix A is neither Hermitian Matrix nor skew-Hermitian Matrix")

end

end

case 2 then

disp(B,"B=");

T=B'

if B==T then

disp("Matrix B is Hermitian Matrix")

else if B==-T then

disp("Matrix B is skew-Hermitian Matrix")

else disp("Matrix B is neither Hermitian Matrix nor skew-Hermitian Matrix")

end

end

else

disp(C,"C=");

T=C'

if C==T then

disp("Matrix C is Hermitian Matrix")

else if C==-T then

disp("Matrix C is skew-Hermitian Matrix")

else disp("Matrix C is neither Hermitian Matrix nor skew-Hermitian Matrix")

end

end

end

end

Output:

K=1

A=

1. 2. + 3.i 3. + i

2. - 3.i 2. 1. - 2.i

3. - i 1. + 2.i 5.

Matrix A is Hermitian Matrix

K=2

B=

i 2. - 3.i 4. + 5.i

-2. - 3.i 0. 2.i

-4. - 5.i 2.i -3.i

Matrix B is neither Hermitian Matrix nor skew-Hermitian Matrix

K=3

C=

-2.i 2. + 3.i 2. - i

-2. + 3.i i -3.i

-2. - i -3.i 0.

Matrix C is skew-Hermitian Matrix