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4C7

Aim

To find the inverse of a square matrix using Gauss-Jordan method.

Experiment - 2

APPLIED MATHEMATICS LAB

# **EXPERIMENT – 2**

## **Aim:**

To find the inverse of a square matrix using Gauss-Jordan method.

**Source Code:**

function [**B**]=inv(**A**)

**B** = eye(3, 3)

disp('Given Matrix A is -: ', **A**)

if (det(**A**) == 0) then

disp('Matrix is singular, Inverse does not exist')

abort

end

Aug = [**A**, **B**]

if (Aug(1, 1) == 0 & Aug(2, 1) ~= 0) then

C(1, :) = Aug(1, :)

Aug(1, :) = Aug(2, :)

Aug(2, :) = C(1, :)

elseif (Aug(1, 1) == 0 & Aug(3, 1) ~= 0) then

C(1, :) = Aug(1, :)

Aug(1, :) = Aug(3, :)

Aug(3, :) = C(1, :)

end

Aug(1, :) = Aug(1, :)/Aug(1, 1)

Aug(2, :) = Aug(2, :) - Aug(2, 1) \* Aug(1, :)

Aug(3, :) = Aug(3, :) - Aug(3, 1) \* Aug(1, :)

if (Aug(2, 2) == 0) then

C(2, :) = Aug(2, :)

Aug(2, :) = Aug(3, :)

Aug(3, :) = C(2, :)

end

Aug(2, :) = Aug(2, :)/Aug(2, 2)

Aug(1, :) = Aug(1, :) - Aug(1, 2) \* Aug(2, :)

Aug(3, :) = Aug(3, :) - Aug(3, 2) \* Aug(2, :)

Aug(3, :) = Aug(3, :)/Aug(3, 3)

Aug(1, :) = Aug(1, :) - Aug(1, 3) \* Aug(3, :)

Aug(2, :) = Aug(2, :) - Aug(2, 3) \* Aug(3, :)

Aug(:, 1:3) = []

**B** = Aug(:, 1: 3);

printf('\n\n Name - Syeda Reeha Quasar \n Enrolment No. - 14114802719 \n Group - C7 \n\n')

disp('The inverse of given matrix is:- ')

endfunction

# **Output:**





