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| **Experiment No.** | 2 | | |

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| **AIM:** | To complete the following problems |
| **THEORY:** | **If else Braching**    **For Loop**  Identity Matrix of user size    Display matrix elements until a zero appears    **While Loop**    **Functions**    **Even Odd Function**    **Prime Number Function**  **Fahrenheit to Celsius and vice versa**    Topics covered:   * If else branching * For loop * While loop * Functions * Some of the important functions like evenOdd, prime number and degrees conversion |
| **PROBLEMS** | |
| **CODE:** | **First Problem:**  Find the user given matrix is   * Symmetrix(find the skew symmetrix equivalent) * Skew symmetrix * Singular * Non singular(find inverse too)   A=input("Enter a Matrix: ")  length=size(A)  len=length(1,1)  printf("\n-----------------------------------------\n")  asymmetric =0  for i=1:len  for j=1:len  if A(i,j)~=A(j,i) then  asymmetric=1  end  end  end  if asymmetric==1 then  printf("\nGiven Matrix is not symmetric\n")  else  printf("\nGiven Matrix is symmetric\n")    for i=1:len  for j=1:len  if i~=j  A(i,j) = -A(j,i)  else  A(i,j)=0  end  end  end  printf("\n\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\n")  printf("The skew symmetric matrix is:\n")  disp(A)  end  printf("\n-----------------------------------------\n")  skew =0  for i=1:len  for j=1:len  if A(i,j)~=-A(j,i) then  skew=1  end  end  end  if skew==1 then  printf("Given Matrix is not skew symmetric\n")  else  printf("Given Matrix is skew symmetric\n")  end  printf("\n-----------------------------------------\n")  determinant = det(A)  if determinant==0 then  printf("Matrix is singular\n")  else  printf("Matrix is non-singular\n")  printf("\n\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\n")  disp("The inverse of the given matrix is:")  disp(inv(A))  end  printf("\n-----------------------------------------\n") |
| **OUTPUT:** | When Matrix is neither symmetric nor skew symmetric    Matrix is symmetric and skew symmetric    **Second Problem**  Define a function that finds the sum of given matrix and 2i\*I  and display the matrix  function **matrix**=sumMatrix(**A**)    *//finding the length of the matrix a*  length = size(A)    *//Getting the 1row and 1column*  len = length(1,1)    *//Constructing a identity matrix of len x len*  B=eye(len,len)  B = 2\*%i\*B    *//returning the matrix with the sum*  matrix = A+B;  endfunction;  printf("\n--------------------------------\n")  A=input("Enter a Matrix: ")  printf("\n--------------------------------\n")  disp(sumMatrix(A))  printf("\n--------------------------------\n")  Output: |
| **CONCLUSION:** I learnt about the if-else branching, for loop, while loop and function. Learnt about the size function which returns the no of rows and column. I have learnt about prebuilt function like inv and det which finds the inverse and determinant of the matrix | |