**CSE 115 Lab on 2D Array – Ara2**

1. **C program to find transpose of a 3\*3 matrix:**

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| #include <stdio.h>  void main()  {  int A[3][3], B[3][3], row, col;    printf("Enter elements in matrix of size 3x3: \n");  for(row=0; row<3; row++)  {  for(col=0; col<3; col++)  {  scanf("%d", &A[row][col]);  }  }  // Compute matrix B: the transpose of matrix A  for(row=0; row<3; row++)  {  for(col=0; col<3; col++)  {  //Store each row of A to each column of matrix B  B[row][col] = A[col][row];  }  }    // Prints the original matrix A  printf("\nOriginal matrix: \n");  for(row=0; row<3; row++)  {  for(col=0; col<3; col++)  {  printf("%d ", A[row][col]);  }  printf("\n");  }    // Prints the transpose of matrix A  printf("Transpose of matrix A: \n");  for(row=0; row<3; row++)  {  for(col=0; col<3; col++)  {  printf("%d ", B[row][col]);  }  printf("\n");  }  } |

**Exercise:**

1. **Write C program to read a 3\*5 matrix A from user and print the elements of the matrix n\*A where n is a decimal number read from user.**
2. **Write C program to read a n\*n matrix A from user (n is a user input) and print the (i) upper left, (ii) lower right, (iii) upper right, and (iv) lower left triangle, (v) diagonal and (vi) reverse diagonal of A.**
3. **Write C program to read a r\*c matrix A from user (r, c are user inputs) and print the sum of even numbers in A.**

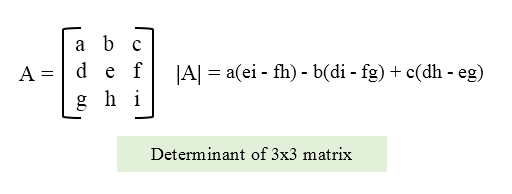
**Assignment:**

1. **Write a C program to find sum of border elements (bold ones) of a matrix**

**Example:**   
If the array elements are:   
**1 2 3 4**  
**4** 5 6 **7**  
**7 8 9 9**  
Output should be: Sum of main border elements = 54

because 1+2+3+4+7+9+9+8+7+4 = 54

1. **Write C program to read two r\*c matrices A and B from user (r, c are user inputs) and print the matrix 5A+7B+9 (add 9 with each element of the matrix 5A+7B to get the resultant matrix).**
2. **Write a C program to compute determinant of a 3X3 matrix**

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