***DATA STRUCTURE***

***PROGRAMS:***

***1.* Find ODD or Even number from a given set of numbers.**

*#include <stdio.h>*

*void checkOddOrEven(int num) {*

*if (num % 2 == 0) {*

*printf("%d is even.\n", num);*

*} else {*

*printf("%d is odd.\n", num);*

*}*

*}*

*int* *main() {*

*int n;*

*printf("Enter the number of elements: ");*

*scanf("%d", &n);*

*int numbers[n];*

*printf("Enter the elements:\n");*

*for (int i = 0; i < n; i++) {*

*scanf("%d", &numbers[i]);*

*}*

*printf("Odd or Even results:\n");*

*for (int i = 0; i < n; i++) {*

*checkOddOrEven(numbers[i]);*

*}*

*return 0;*

*}*

***OUTPUT:***

*Enter the number of elements: 5*

*Enter the elements:*

*1 5 3 8 2*

*Odd or Even results:*

*1 is odd.*

*5 is odd.*

*3 is odd.*

*8 is even.*

*2 is even.*

***2.Perform matrix multiplication***

*#include <stdio.h>*

*#define N 3*

*void multiplyMatrix(int firstMatrix**[][N], int secondMatrix**[][N], int resultMatrix**[][N]) {*

*for (int i = 0; i < N; i++) {*

*for (int j = 0; j < N; j++) {*

*resultMatrix[i][j] = 0;*

*for (int k = 0; k < N; k++) {*

*resultMatrix[i][j] += firstMatrix[i][k] \* secondMatrix[k][j];*

*}*

*}*

*}*

*}*

*int* *main() {*

*int firstMatrix[N][N] = {{1, 2, 3}, {4, 5, 6}, {7, 8, 9}};*

*int secondMatrix[N][N] = {{9, 8, 7}, {6, 5, 4}, {3, 2, 1}};*

*int resultMatrix[N][N];*

*multiplyMatrix(firstMatrix, secondMatrix, resultMatrix);*

*printf("Resultant Matrix:\n");*

*for (int i = 0; i < N; i++) {*

*for (int j = 0; j < N; j++) {*

*printf("%d ", resultMatrix[i][j]);*

*}*

*printf("\n");*

*}*

*return 0;*

*}*

***OUTPUT:***

*Resultant Matrix:*

*30 24 18*

*84 69 54*

*138 114 90*