# Techno-Online-Assignment

//Program 1

#include <iostream>

#include <cmath>

void simplify\_fraction(int num, int denom);

using namespace std;

int main()

{

double number;

cout << "Enter Number: ";

cin >> number;

double fractional\_part = number - floor(number);

for (double i = 0.1, j = 10; ; i/=10, j\*=10)

{

if ( fractional\_part >= i )

{

simplify\_fraction(number \* j, j);

break;

}

}

return 0;

}

void simplify\_fraction(int num, int denom)

{

for (int i = denom; i>=2; i--)

{

if (num % i == 0 && denom % i == 0)

{

num = num/i;

denom = denom/i;

}

}

cout << "Fraction: ";

if (denom == 1)

cout << num;

else

cout << denom << "/" << num;

cout << endl;

}

//Program 2

#include<iostream>

using namespace std;

void calculate\_transpose(int matrix[5][5], int rows, int cols);

void calculate\_trace(int matrix[5][5], int rows, int cols);

int main()

{

int matrix[5][5];

int i,j,rows,cols;

// Taking Input In Array

cout<<"Enter Number of ROWS :";

cin>>rows;

cout<<"Enter Number Of COLS :";

cin>>cols;

for( i=0;i<rows;i++){

for( j=0;j<cols;j++)

{

cin>>matrix[i][j];

}

}

cout<<"\n Matrix You Entered\n";

for( i=0;i<rows;i++){

for( j=0;j<cols;j++)

{

cout<<matrix[i][j]<<" ";

}

cout<<endl;

}

calculate\_transpose(matrix,rows,cols);

calculate\_trace(matrix,rows,cols);

return 0;

}

void calculate\_transpose(int matrix[5][5], int rows, int cols)

{

int i,j;

int transpose\_matrix[5][5];

cout<<"\n\n\nTranspose of Entered Matrix\n";

for(i=0;i<rows;i++){

for( j=0;j<cols;j++)

{

transpose\_matrix[j][i]=matrix[i][j];

}

cout<<endl;

}

for(i=0;i<cols;i++){

for( j=0;j<rows;j++)

{

cout<<transpose\_matrix[i][j]<<" ";

}

cout<<endl;

}

}

void calculate\_trace(int matrix[5][5], int rows, int cols)

{

int i,j,s=0;

int transpose\_matrix[5][5];

for(i=0;i<rows;i++){

for( j=0;j<cols;j++)

{

if(i==j)

{

s=s+matrix[i][j];

}

}

cout<<endl;

}

cout<<"Trace Of Matrix is "<<s;

}