#include<stdio.h>

#include<math.h>

#define Pi 3.1416

void rec(float a[50][50], float b[50][50]);

void fahrtocelsius();

void celsiustofahr();

int gcd(int num1, int num2);

int fac(int num);

float a[50][50], b[50][50], c[50][50];

static int p, q, p1, q1;

float g=0.00, f;

static int i=0, j=0, x2=0, y4=0, x1=0, y3=0;

int i1=0;

char ch[100];

static int count=0;

struct calculation c1;

struct calculation m1;

struct calculation d1;

struct calculation s1;

struct calculation b1;

struct calculation l1;

struct calculation f1;

struct calculation t1;

int ye, m3, d3, gcd1, lcm1, fact1;

float c3[50][50], dete ;

float re, re1, res, cel, far;

char string[50];

struct calculation

{

int ye, m3, d3, gcd1, lcm1, fact1;

float c3[50][50], dete;

float re, re1, res, cel, far;

} c1, m1,d1,s1,b1 ;

float rad(float angle) // Calculating Radian

{

float radian;

radian=((Pi\*angle)/180);

return radian;

}

char age() //Calculating Age

{

FILE \*file1;

file1=fopen("test1.txt","a");

int d1, d2, m1, m2, y1, y2, d, m, y;

printf("Enter birth day: ");

scanf("%d",&d1);

printf("Enter birth month: ");

scanf("%d",&m1);

printf("Enter birth year: ");

scanf("%d",&y1);

printf("Enter current day: ");

scanf("%d",&d2);

printf("Enter current month: ");

scanf("%d",&m2);

printf("Enter current year: ");

scanf("%d",&y2);

printf("\n");

if(m1<=12 && m2<=12)

{

if((y2%400==0 || y2%100!=0)&& (y2%4==0))

{

if(m2==1 || m2==2 || m2==4 || m2==6 || m2==8 || m2==9 || m2==11 )

{

if((d1>31 || d2>31) && (m1==1 || m2==1))

{

printf("Try again!\n");

}

else if((d1>30 || d2>30) && (m1==4 || m1==6 || m1==8 || m1==9 || m1==11|| m2==4 || m2==6 || m2==8 || m2==9 || m2==11))

{

printf("Try again!\n");

}

else if((d1>29 || d2>29) && (m1==2 || m2==2))

{

printf("Try again!\n");

}

else if(d2>d1 && m2>m1)

{

d=d2-d1;

m=m2-m1;

y=y2-y1;

printf("%d Years\n",y);

printf("%d Months\n",m);

printf("%d Days\n",d);

}

else if(d2<d1 && m2>m1)

{

d= (d2+31)-d1;

m= (m2-1)-m1;

y= y2-y1;

printf("%d Years\n",y);

printf("%d Months\n",m);

printf("%d Days\n",d);

}

else if(d2==d1 && m2>m1)

{

d=d2-d1;

m=m2-m1;

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printf("%d Years\n",y);

printf("%d Months\n",m);

printf("%d Days\n",d);

}

else if(d2==d1 && m2<m1)

{

d=d2-d1;

m=(m2+12)-m1;

y=(y2-1)-y1;

printf("%d Years\n",y);

printf("%d Months\n",m);

printf("%d Days\n",d);

}

else if(d2>d1 && m2<m1)

{

d=d2-d1;

m=(m2+12)-m1;

y=(y2-1)-y1;

printf("%d Years\n",y);

printf("%d Months\n",m);

printf("%d Days\n",d);

}

else if(d2<d1 && m2<m1)

{

d= (d2+31)-d1;

m= (m2-1+12)-m1;

y= (y2-1)-y1;

printf("%d Years\n",y);

printf("%d Months\n",m);

printf("%d Days\n",d);

}

else if(d2>d1 && m2==m1)

{

d= d2-d1;

m= m2-m1;

y= y2-y1;

printf("%d Years\n",y);

printf("%d Months\n",m);

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}

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{

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m= (m2-1+12)-m1;

y= (y2-1)-y1;

printf("%d Years\n",y);

printf("%d Months\n",m);

printf("%d Days\n",d);

}

else if(y2==y1 && d1==d2 && m2>m1)

{

d=d2-d1;

m=m2-m1;

y=y2-y1;

printf("%d Years\n",y);

printf("%d Months\n",m);

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printf("%d Days\n",d);

}

else if(d1==d2 && m1==m2)

{

d=d2-d1;

m=m2-m1;

y=y2-y1;

printf("%d Years\n",y);

printf("%d Months\n",m);

printf("%d Days\n",d);

}

}

else if(m2==3)

{

if((d1>31 || d2>31) && (m1==3 || m2==3))

{

printf("Try again!\n");

}

else if(d2>d1 && m2>m1)

{

d=d2-d1;

m=m2-m1;

y=y2-y1;

printf("%d Years\n",y);

printf("%d Months\n",m);

printf("%d Days\n",d);

}

else if(d2<d1 && m2>m1)

{

d= (d2+29)-d1;

m= (m2-1)-m1;

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printf("%d Years\n",y);

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d=d2-d1;

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printf("%d Years\n",y);

printf("%d Months\n",m);

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}

else if(y2==y1 && d1==d2 && m2>m1)

{

d=d2-d1;

m=m2-m1;

y=y2-y1;

printf("%d Years\n",y);

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d=d2-d1;

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d=(d2+29)-d1;

m=(m2-1)-m1;

y=y2-y1;

printf("%d Years\n",y);

printf("%d Months\n",m);

printf("%d Days\n",d);

}

else if(d1==d2 && m1==m2)

{

d=d2-d1;

m=m2-m1;

y=y2-y1;

printf("%d Years\n",y);

printf("%d Months\n",m);

printf("%d Days\n",d);

}

}

else if(m2==5 || m2==7 || m2==10 || m2==12)

{

if((d1>31 || d2>31) && (m1==5 || m1==7 || m1==10 || m1==12 || m2==5|| m2==7 || m2==10 || m2==12 ))

{

printf("Try again!\n");

}

else if(d2>d1 && m2>m1)

{

d=d2-d1;

m=m2-m1;

y=y2-y1;

printf("%d Years\n",y);

printf("%d Months\n",m);

printf("%d Days\n",d);

}

else if(d2<d1 && m2>m1)

{

d= (d2+30)-d1;

m= (m2-1)-m1;

y= y2-y1;

printf("%d Years\n",y);

printf("%d Months\n",m);

printf("%d Days\n",d);

}

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d=d2-d1;

m=m2-m1;

y=y2-y1;

printf("%d Years\n",y);

printf("%d Months\n",m);

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}

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{

d= (d2+30)-d1;

m= (m2-1+12)-m1;

y= (y2-1)-y1;

printf("%d Years\n",y);

printf("%d Months\n",m);

printf("%d Days\n",d);

}

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{

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m= m2-m1;

y= y2-y1;

printf("%d Years\n",y);

printf("%d Months\n",m);

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}

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{

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m= (m2-1+12)-m1;

y= (y2-1)-y1;

printf("%d Years\n",y);

printf("%d Months\n",m);

printf("%d Days\n",d);

}

else if(y2==y1 && d1==d2 && m2>m1)

{

d=d2-d1;

m=m2-m1;

y=y2-y1;

printf("%d Years\n",y);

printf("%d Months\n",m);

printf("%d Days\n",d);

}

else if(y2==y1 && d2>d1 && m2>m1)

{

d=d2-d1;

m=m2-m1;

y=y2-y1;

printf("%d Years\n",y);

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}

else if(y2==y1 && d2<d1 && m2>m1)

{

d=(d2+30)-d1;

m=(m2-1)-m1;

y=y2-y1;

printf("%d Years\n",y);

printf("%d Months\n",m);

printf("%d Days\n",d);

}

else if(d1==d2 && m1==m2)

{

d=d2-d1;

m=m2-m1;

y=y2-y1;

printf("%d Years\n",y);

printf("%d Months\n",m);

printf("%d Days\n",d);

}

}

}

else

{

if(m2==1 || m2==2 || m2==4 || m2==6 || m2==8 || m2==9 || m2==11 )

{

if((d1>31 || d2>31) && (m1==1 || m2==1))

{

printf("Try again!\n");

}

else if((d1>28 || d2>28) && (m1==2 || m2==2))

{

printf("Try again!\n");

}

else if((d1>30 || d2>30) && (m1==4 || m1==6 || m1==8 || m1==9 || m1==11|| m2==4 || m2==6 || m2==8 || m2==9 || m2==11))

{

printf("Try again!\n");

}

else if(d2>d1 && m2>m1)

{

d=d2-d1;

m=m2-m1;

y=y2-y1;

printf("%d Years\n",y);

printf("%d Months\n",m);

printf("%d Days\n",d);

}

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d= (d2+31)-d1;

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printf("%d Days\n",d);

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m=(m2+12)-m1;

y=(y2-1)-y1;

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printf("%d Months\n",m);

printf("%d Days\n",d);

}

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m= m2-m1;

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printf("%d Years\n",y);

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}

else if(d2<d1 && m2==m1)

{

d= (d2+31)-d1;

m= (m2-1+12)-m1;

y= (y2-1)-y1;

printf("%d Years\n",y);

printf("%d Months\n",m);

printf("%d Days\n",d);

}

else if(y2==y1 && d1==d2 && m2>m1)

{

d=d2-d1;

m=m2-m1;

y=y2-y1;

printf("%d Years\n",y);

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}

else if(y2==y1 && d2>d1 && m2>m1)

{

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{

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m=(m2-1)-m1;

y=y2-y1;

printf("%d Years\n",y);

printf("%d Months\n",m);

printf("%d Days\n",d);

}

else if(d1==d2 && m1==m2)

{

d=d2-d1;

m=m2-m1;

y=y2-y1;

printf("%d Years\n",y);

printf("%d Months\n",m);

printf("%d Days\n",d);

}

}

else if(m2==3)

{

if((d1>31 || d2>31) && (m1==2 || m2==2))

{

printf("Try again!\n");

}

else if(d2>d1 && m2>m1)

{

d=d2-d1;

m=m2-m1;

y=y2-y1;

printf("%d Years\n",y);

printf("%d Months\n",m);

printf("%d Days\n",d);

}

else if(d2<d1 && m2>m1)

{

d= (d2+28)-d1;

m= (m2-1)-m1;

y= y2-y1;

printf("%d Years\n",y);

printf("%d Months\n",m);

printf("%d Days\n",d);

}

else if(d2==d1 && m2>m1)

{

d=d2-d1;

m=m2-m1;

y=y2-y1;

printf("%d Years\n",y);

printf("%d Months\n",m);

printf("%d Days\n",d);

}

else if(d2==d1 && m2<m1)

{

d=d2-d1;

m=(m2+12)-m1;

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d= (d2+28)-d1;

m= (m2-1+12)-m1;

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{

d= d2-d1;

m= m2-m1;

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printf("%d Years\n",y);

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{

d= (d2+28)-d1;

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}

else if(y2==y1 && d1==d2 && m2>m1)

{

d=d2-d1;

m=m2-m1;

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printf("%d Years\n",y);

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printf("%d Years\n",y);

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}

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{

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m=(m2-1)-m1;

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printf("%d Years\n",y);

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}

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{

d=d2-d1;

m=m2-m1;

y=y2-y1;

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printf("%d Months\n",m);

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}

}

else if(m2==5 || m2==7 || m2==10 || m2==12)

{

if((d1>31 || d2>31) && (m1==5 || m1==7 || m1==10 || m1==12 || m2==5|| m2==7 || m2==10 || m2==12 ))

{

printf("Try again!\n");

}

else if(d2>d1 && m2>m1)

{

d=d2-d1;

m=m2-m1;

y=y2-y1;

printf("%d Years\n",y);

printf("%d Months\n",m);

printf("%d Days\n",d);

}

else if(d2<d1 && m2>m1)

{

d= (d2+30)-d1;

m= (m2-1)-m1;

y= y2-y1;

printf("%d Years\n",y);

printf("%d Months\n",m);

printf("%d Days\n",d);

}

else if(d2==d1 && m2>m1)

{

d=d2-d1;

m=m2-m1;

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else if(d2==d1 && m2<m1)

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{

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d= (d2+30)-d1;

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y= (y2-1)-y1;

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printf("%d Months\n",m);

printf("%d Days\n",d);

}

else if(y2==y1 && d1==d2 && m2>m1)

{

d=d2-d1;

m=m2-m1;

y=y2-y1;

printf("%d Years\n",y);

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}

else if(y2==y1 && d2>d1 && m2>m1)

{

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m=m2-m1;

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}

else if(y2==y1 && d2<d1 && m2>m1)

{

d=(d2+30)-d1;

m=(m2-1)-m1;

y=y2-y1;

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printf("%d Months\n",m);

printf("%d Days\n",d);

}

else if(d1==d2 && m1==m2)

{

d=d2-d1;

m=m2-m1;

y=y2-y1;

printf("%d Years\n",y);

printf("%d Months\n",m);

printf("%d Days\n",d);

}

}

}

c1.ye=y;

c1.m3=m;

c1.d3=d;

fprintf(file1, "Year =%d Month =%d Day=%d\n", y, m, d);

fclose(file1);

}

else

printf("Try again!");

}

char mat() // Calculating Matrix

{

FILE \*file1;

file1=fopen("test1.txt","a");

int x;

printf("1) Matrix Addition 2) Matrix Subtraction 3) Matrix Multiple: ");

scanf("%d", &x);

if(x==1)

{

printf("Here both Matrix rows and columns will be equal\n");

printf("Enter first matrix rows and columns: ");

scanf("%d %d",&p, &q);

printf("Enter second Matrix rows and columns: ");

scanf("%d %d",&p1, &q1);

printf("\n");

if(p==q &&p1==q1 && p==p1 && q==q1)

{

for(int i=0; i<p; i++)

{

for(int j=0; j<q; j++)

{

printf("A[%d][%d] = ",i,j);

scanf("%f",&a[i][j]);

}

}

printf("\n");

for(int i=0; i<p1; i++)

{

for(int j=0; j<q1; j++)

{

printf("B[%d][%d] = ",i,j);

scanf("%f",&b[i][j]);

}

}

for(int i=0, h=0, k=0; i<p; i++, h++, k++)

{

for(int j=0, h1=0, k1=0; j<q; j++, h1++, k1++)

{

c[i][j] = a[h][h1] + b[k][k1];

}

}

printf("\n");

for(int i=0; i<p; i++)

{

for(int j=0; j<q; j++)

{

printf("C[%d][%d] = %.3f ",i, j, c[i][j]);

}

printf("\n");

}

for(int i=0; i<p; i++)

{

for(int j=0; j<q; j++)

{

m1.c3[i][j]=c[i][j];

}

printf("\n");

}

for(int i=0; i<p; i++)

{

for(int j=0; j<q; j++)

{

fprintf(file1, "C[%d][%d] = %f \n",i,j,c[i][j]);

}

printf("\n");

}

fclose(file1);

}

else

printf("Try Again!");

}

else if(x==2)

{

printf("Here both Matrix rows and columns will be equal\n");

printf("Enter first matrix rows and columns: ");

scanf("%d %d",&p, &q);

printf("Enter second Matrix rows and columns: ");

scanf("%d %d",&p1, &q1);

printf("\n");

if(p==q &&p1==q1 && p==p1 && q==q1)

{

for(int i=0; i<p; i++)

{

for(int j=0; j<q; j++)

{

printf("A[%d][%d] = ",i,j);

scanf("%f",&a[i][j]);

}

}

printf("\n");

for(int i=0; i<p1; i++)

{

for(int j=0; j<q1; j++)

{

printf("B[%d][%d] = ",i,j);

scanf("%f",&b[i][j]);

}

}

printf("\n");

for(int i=0, h=0, k=0; i<p; i++, h++, k++)

{

for(int j=0, h1=0, k1=0; j<q; j++, h1++, k1++)

{

c[i][j] = a[h][h1] - b[k][k1];

}

}

printf("\n");

for(int i=0; i<p; i++)

{

for(int j=0; j<q; j++)

{

printf("C[%d][%d] = %.3f ",i, j, c[i][j]);

}

printf("\n");

}

for(int i=0; i<p; i++)

{

for(int j=0; j<q; j++)

{

m1.c3[i][j]=c[i][j];

}

printf("\n");

}

for(int i=0; i<p; i++)

{

for(int j=0; j<q; j++)

{

fprintf(file1, "C[%d][%d] = %f \n",i,j,c[i][j]);

}

printf("\n");

}

fclose(file1);

}

else

printf("Try Again!");

}

else if(x==3)

{

printf("Here First Matrix column and Second Matrix rows will be equal\n");

printf("Enter first matrix rows and columns: ");

scanf("%d %d",&p, &q);

printf("Enter second Matrix rows and columns: ");

scanf("%d %d",&p1, &q1);

printf("\n");

if(q==p1)

{

for(int i=0; i<p; i++)

{

for(int j=0; j<q; j++)

{

printf("A[%d][%d] = ",i,j);

scanf("%f",&a[i][j]);

}

}

printf("\n");

for(int i=0; i<p1; i++)

{

for(int j=0; j<q1; j++)

{

printf("B[%d][%d] = ",i,j);

scanf("%f",&b[i][j]);

}

}

printf("\n");

rec(a, b);

for(int i=0; i<p; i++)

{

for(int j=0; j<q1; j++)

{

printf("C[%d][%d] = %.3f ",i,j,c[i][j]);

}

printf("\n");

}

for(int i=0; i<p; i++)

{

for(int j=0; j<q1; j++)

{

m1.c3[i][j]=c[i][j];

}

printf("\n");

}

for(int i=0; i<p; i++)

{

for(int j=0; j<q1; j++)

{

fprintf(file1, "C[%d][%d] = %f \n",i,j,c[i][j]);

}

printf("\n");

}

fclose(file1);

}

else

printf("Try again! \n");

}

}

void rec(float a[50][50], float b[50][50]) // Recursive Function

{

if(i<p)

{

if(j<q1)

{

if(x1<q)

{

f= a[x2][x1] \* b[y3][y4];

g= g+f;

x1++;

y3++;

rec(a,b); // Calling Recursive Function

}

x1=0;

y3=0;

c[i][j]=g;

g=0;

j++;

y4++;

rec(a,b); // Calling Recursive Function

}

j=0;

y4=0;

x2++;

i++;

rec(a,b); // Calling Recursive Function

}

}

char det() //Calculating Determinant

{

FILE \*file1;

file1=fopen("test1.txt","a");

float a[50][50], result;

int p, q;

printf("Rows and Columns will be equal\n");

printf("Rows and Columns must be 3 or 2\n");

printf("Enter row: ");

scanf("%d",&p);

printf("Enter column: ");

scanf("%d",&q);

printf("\n");

if(p==3 && q==3)

{

for(int i=0; i<p; i++)

{

for(int j=0; j<q; j++)

{

printf("D[%d][%d] = ",i,j);

scanf("%f",&a[i][j]);

}

}

printf("\n");

result= (a[0][0] \* a[1][1] \* a[2][2]) + (a[0][1] \* a[2][0] \* a[1][2]) + (a[0][2] \* a[1][0] \* a[2][1]) - (a[2][1] \* a[1][2] \* a[0][0]) - (a[0][1] \* a[1][0] \* a[2][2]) \* (a[0][2] \* a[2][0] \* a[1][1]);

d1.dete=result;

printf("Determinant value is: %.3f \n",result);

}

else if(p==2 && q==2)

{

for(int i=0; i<p; i++)

{

for(int j=0; j<q; j++)

{

printf("D[%d][%d] = ",i,j);

scanf("%f",&a[i][j]);

}

}

printf("\n");

result= (a[0][0] \* a[1][1]) - (a[1][0] \* a[0][1]);

d1.dete=result;

printf("Determinant value is: %.3f\n",result);

}

else

{

printf("Try again!\n");

}

fprintf(file1, "%f\n", result);

fclose(file1);

}

char sci() // Scientific Calculation

{

FILE \*file1;

file1= fopen("test1.txt","a");

float result=0, h=0,j=0,k=0,j1=0,p1=0,q1=0,t1=0,result1=0,angle;

int y;

printf("Enter any: 1(sin) 2(cos) 3(tan) 4(Power) 5(square root) 6(log) 7(Equation): ");

scanf("%d",&y);

printf("\n");

switch(y)

{

case (1):

{

printf("Input angle:");

scanf("%f",&angle);

float h = rad(angle); // Calling rad function

result = sin(h);

s1.re=result;

printf("sin(%.2f)= %f\n",angle,result);

break;

}

case (2):

{

printf("Input angle:");

scanf("%f",&angle);

float h = rad(angle); // Calling rad function

result = cos(h);

s1.re=result;

printf("cos(%.2f)= %f\n",angle,result);

break;

}

case (3):

{

printf("Input angle:");

scanf("%f",&angle);

if(angle==90)

{

printf("Undefined! \n");

}

else if(angle!=90)

{

float h = rad(angle); // Calling rad function

result = tan(h);

s1.re=result;

printf("tan(%.2f)= %f\n",angle,result);

}

break;

}

case (4):

{

printf("Enter base & power:");

scanf("%f %f",&j,&k);

result = pow(j,k);

s1.re=result;

printf("%.2f^%.2f= %.2f\n",j,k,result);

break;

}

case (5):

{

printf("Enter Base:");

scanf("%f",&j1);

result = sqrt(j1);

s1.re=result;

printf("Square root of %.2f= (+,-)%.2f\n",j1,result);

break;

}

case (6):

{

printf("Input Number:");

scanf("%f",&j1);

result = log (j1);

s1.re=result;

printf("log(%.2f)= %.2f\n",j1,result);

break;

}

case (7):

{

printf("Input value of p1, q1, t1:");

scanf("%f %f %f",&p1,&q1,&t1);

result = (-q1+sqrt((q1\*q1)-(4\*p1\*t1)));

result =(result/(p1\*2));

s1.re=result;

result1 = (-q1-sqrt((q1\*q1)-(4\*p1\*t1)));

result1= (result1/(p1\*2));

s1.re1=result1;

printf("Value of x1= %.2f, Value of x2= %.2f\n",result,result1);

break;

}

default:

printf("Invalid Operation! \n");

break;

}

fprintf(file1,"%f, %f\n", result, result1);

fclose(file1);

}

char bas() // Basic Calculation

{

FILE \*file1;

file1= fopen("test1.txt","a");

float p=0,q=0, result=0, arr[50];

int x, i=0;

printf("Select operation: 1.(+), 2(-), 3(\*), 4(/), 5(avg):");

scanf("%d",&x);

switch(x)

{

case(1):

{

printf("Enter numbers: ");

printf("\n");

for(i=0; i<50; i++)

{

scanf("%f",&arr[i]);

scanf("%c",&ch[i]);

if(ch[i]=='=')

{

break;

}

else

{

result=result+arr[i];

}

}

b1.res=result;

printf("%f\n",result);

break;

}

case(2):

{

printf("Enter two numbers:");

scanf("%f %f",&p, &q);

result=p-q;

b1.res=result;

printf("%f\n",result);

break;

}

case(3):

{

result=1;

printf("Enter numbers: ");

printf("\n");

for(i=0; i<50; i++)

{

scanf("%f",&arr[i]);

scanf("%c",&ch[i]);

if(ch[i]=='=')

{

break;

}

else

{

result=result\*arr[i];

}

}

b1.res=result;

printf("%f\n",result);

break;

}

case(4):

{

printf("Enter two numbers:");

scanf("%f %f",&p, &q);

result = p / q;

b1.res=result;

printf("%f\n",result);

break;

}

case(5):

{

printf("Enter numbers: ");

printf("\n");

for(i=0; i<50; i++)

{

scanf("%f",&arr[i]);

scanf("%c",&ch[i]);

if(ch[i]=='=')

{

break;

}

else

{

result=result+arr[i];

}

}

result=result/i;

b1.res=result;

printf("%f\n",result);

break;

}

default:

printf("Invalid Operation! \n");

break;

}

fprintf(file1, "%f\n", result);

fclose(file1);

}

char lcm() // LCM and GCD

{

FILE \*file1;

file1= fopen("test1.txt","a");

int num1, num2, t, l;

printf("Enter Biggest num1: ");

scanf("%d",&num1);

printf("Enter Smallest num2: ");

scanf("%d",&num2);

t=gcd(num1, num2);

l1.gcd1=t;

printf("GCD=%d\n",t);

l=(num1 \* num2)/t;

l1.lcm1=l;

printf("LCM=%d\n",l);

fprintf(file1, "GCD = %d LCM = %d\n", t, l);

fclose(file1);

}

int gcd(int num1, int num2)

{

int rem=0;

if(num2!=0)

{

rem = num1 % num2;

num1=num2;

num2=rem;

gcd(num2, rem); // Calling Recursive Function

}

return num2;

}

char fact() // Factorial Calculation

{

FILE \*file1;

file1= fopen("test1.txt","a");

int num, r;

printf("Enter number: ");

scanf("%d",&num);

r=fac(num);

f1.fact1=r;

printf("Factorial of %d = %d\n",num,r);

fprintf(file1, "Factorial = %d\n", r);

fclose(file1);

}

int fac(int num)

{

static int t=1, p;

if(num!=0)

{

t=t\*num;

p=num-1;

fac(p); // Calling Recursive Function

}

return t;

}

char temp() // Temperature conversion

{

int c;

printf("Temperature Conversion Table\n");

printf("1 - Fahrenheit to Celsius Conversion\n");

printf("2 - Celsius to Fahrenheit Conversion\n");

printf("- Enter your Choice\n");

scanf("%d",&c);

if (c == 1)

fahrtocelsius();

else if (c == 2)

celsiustofahr();

else

printf("Invalid Choice\n");

return 0;

}

void fahrtocelsius()

{

FILE \*file1;

file1= fopen("test1.txt","a");

float celsius, fahrenheit;

printf("Enter temperature in Fahrenheit: ");

scanf("%f", &fahrenheit);

celsius = (fahrenheit - 32) \* 5 / 9;

t1.cel=celsius;

printf("%.2f Fahrenheit = %.2f Celsius\n", fahrenheit, celsius);

fprintf(file1, "%.2f Fahrenheit = %.2f Celsius\n", fahrenheit, celsius);

fclose(file1);

}

void celsiustofahr()

{

FILE \*file1;

file1= fopen("test1.txt","a");

float celsius, fahrenheit;

printf("Enter temperature in Celsius: ");

scanf("%f", &celsius);

fahrenheit = (celsius \* 9 / 5) + 32;

t1.far= fahrenheit;

printf("%.2f Celsius = %.2f Fahrenheit\n", celsius, fahrenheit);

fprintf(file1, "%.2f Celsius = %.2f Fahrenheit\n", celsius, fahrenheit);

fclose(file1);

}

void result() // Show Result

{

for(int i=0; i<=i1; i++)

{

if(string[i]=='c')

{

printf("Years= %d\n",c1.ye);

printf("Months= %d\n",c1.m3);

printf("Days= %d\n",c1.d3);

}

else if(string[i]=='d')

{

for(int i=0; i<p; i++)

{

for(int j=0; j<q; j++)

{

printf("Matrix result=%.3f ",m1.c3[i][j]);

}

printf("\n");

}

}

else if(string[i]=='e')

{

printf("Determinant result=%.3f\n",d1.dete);

}

else if(string[i]=='b')

{

printf("Scientific Calculatio result=%.3f Scientific Calculatio result=%.3f\n",s1.re, s1.re1);

}

else if(string[i]=='a')

{

printf("Basic Calculation result=%.3f\n",b1.res);

}

else if(string[i]=='f')

{

printf("LCM=%d\n",l1.lcm1);

printf("GCD=%d\n",l1.gcd1);

}

else if(string[i]=='g')

{

printf("Factorial result=%d\n",f1.fact1);

}

else if(string[i]=='h')

{

printf("Temperature Conversition\n");

printf("Celcious=%.3f\n",t1.cel);

printf("Fahrenheit=%.3f\n",t1.far);

}

}

}

int main()

{

char ch;

printf("\t\t\t\t|-----------------------------------------------|\n");

printf("\t\t\t\t|\t\tWelcome to Our Project\t\t|\n");

printf("\t\t\t\t|-----------------------------------------------|\n");

printf("\t\t\t\t|-----------------------------------------------|\n");

printf("\t\t\t\t|\t\tCreated By |\n\n");

printf("\t\t\t\t|\t1.Israt Jahan(203-15-3858) |\n\n");

printf("\t\t\t\t|\t2.Nayeemul Hayder Nayeem(203-15-3861) |\n\n");

printf("\t\t\t\t|\t3.Sakir Hossain Faruque(203-15-3862) |\n\n");

printf("\t\t\t\t|\t4.Nusrat Faruqi(203-15-3885) |\n\n");

printf("\t\t\t\t|-----------------------------------------------|\n\n");

while(1)

{

printf("\n");

printf("\t\t\t\t|-----------------------------------------------|\n");

printf("\t\t\t\t| Select any: |\n");

printf("\t\t\t\t| a) Basic Calculation |\n");

printf("\t\t\t\t| b) Scientific Calculation |\n");

printf("\t\t\t\t| c) Age Calculation |\n");

printf("\t\t\t\t| d) Matrix Calculation |\n");

printf("\t\t\t\t| e) Determinant Calculation |\n");

printf("\t\t\t\t| f) LCM and GCD |\n");

printf("\t\t\t\t| g) Factorial |\n");

printf("\t\t\t\t| h) Temperature Conversion |\n");

printf("\t\t\t\t| i) Show Result |\n");

printf("\t\t\t\t| j) Exit |\n");

printf("\t\t\t\t|-----------------------------------------------|\n");

scanf("%c",&ch);

printf("\n");

if(ch=='a') //Basic Calculation

{

char a;

string[i1]='a';

i1++;

bas();

}

else if(ch=='b') // Scientific Calculation

{

char b;

string[i1]='b';

i1++;

sci();

}

else if(ch=='c') // Age Calculation

{

char c;

string[i1]='c';

i1++;

age();

}

else if(ch=='d') // Matrix Calculation

{

char d;

string[i1]='d';

i1++;

mat();

}

else if(ch=='e') // Determinant Calculation

{

char e;

string[i1]='e';

i1++;

det();

}

else if(ch=='f') // LCM & GCD

{

char f;

string[i1]='f';

i1++;

lcm();

}

else if(ch=='g') // Factorial

{

char g;

string[i1]='g';

i1++;

fact();

}

else if(ch=='h') // Temperature Convertion

{

char h;

string[i1]='h';

i1++;

temp();

}

else if(ch=='i')

{

char i;

result();

}

else if(ch=='j') // Exit

{

break;

}

else

{

printf("Invalid Charecter! \n");

}

getchar ();

}

return 0;

}