**SSN COLLEGE OF ENGINEERING (Autonomous)**

**Affiliated to Anna University**

**DEPARTMENT OF CSE**

**UCS 1211 PROGRAMMING IN C LABORATORY**

**Assignment 5 : Pointers in C**

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**CLASS : CSE-B (SEMESTER-2)**

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**1.Word Frequency count**

#include <stdio.h>

#include<string.h>

int search(char \*str,char \*str1);

int main()

{

char str[100],str1[40];

int count;

printf("Enter the string:");

scanf("%[^\n]%\*c",str);

printf("Enter the string to be found:");

scanf("%s",str1);

count=search(&str,&str1);

if (count!=0)

{

printf("Number of times the word repeated is:%d\n",count);

}

else

{

printf("Word not found\n");

}

return 0;

}

int search(char \*str,char \*str1)

{

int count=0,z=0,x;

x=strlen(str1);

str1[x]=' ';

int m=strlen(str),n=strlen(str1);

for (int i=0;i<m-n+1;i++)

{

count=0;

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

{

if (\*(str+i+j)==\*(str1+j))

{

count+=1;

if(count==n)

{

z+=1;

}

}

else

{

break;

}

}

while(str[i]!=' ')

{

i++;

}

}

return z;

}

**Output**:

cseb121@jtl-19:~$gcc a5\_1 -o a5\_1

cseb121@jtl-19:~$./a5\_1

Enter the string:ssn nss sns ssn ssnnss ssn

Enter the string to be found:ssn

Number of times the word repeated is:2

**2. Word Split**

#include<stdio.h>

#include<stdlib.h>

#include<string.h>

void main()

{

char \*a[20];

int n = 0, i, j;

printf("Enter the lines and enter End to stop

\n");

for(i=0; i<20; i++)

a[i] = (char \*) malloc(sizeof(char)\*20);

do

{

scanf(" %[^\n]", a[n]);

}while(strcmp(a[n++], "End")!=0);

n--;

printf("Tokens are:\n");

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

{

printf("\nString: %d\n", i+1);

for(j=0; \*(a[i] + j); j++)

{

if(\*(a[i] + j) != ' ')

printf("%c", \*(a[i] + j));

else

printf("\n");

}

}

}

**Output:**

cseb121@jtl-19:~$gcc gcc a5\_2 -o a5\_2

cseb121@jtl-19:~$./ a5\_2

Enter the lines and enter End to stop

I am Rahul

from SSN

End

Tokens are:

String: 1

I

am

Rahul

String: 2

from

SSN

**3a. Modify 11.22**

#include<stdio.h>

#include<stdlib.h>

void readinput(int (\*a)[20],int row,int col);

void computetable(int (\*a)[20],int (\*b)[20],int (\*c)[20],int row,int col);

void display(int (\*a)[20],int row,int col);

int main()

{

int row,col;

int (\*a)[20], (\*b)[20], (\*c)[20];

printf("Enter the number of rows:");

scanf("%d",&row);

printf("Enter the number of coloumns:");

scanf("%d",&col);

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

{

a=(int \*) malloc (col\*row\*sizeof(int));

b=(int \*) malloc (col\*row\*sizeof(int));

c=(int \*) malloc (col\*row\*sizeof(int));

}

printf("First table:\n");

readinput(a,row,col);

printf("Second table:\n");

readinput(b,row,col);

computetable(a,b,c,row,col);

display(c,row,col);

return 0;

}

void readinput(int (\*a)[20],int x,int y)

{

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

{

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

{

printf("Enter the %dth row %dth column element:",i+1,j+1);

scanf("%d",(\*(a+i)+j));

}

}

return;

}

void computetable(int (\*a)[20],int (\*b)[20],int (\*c)[20],int x,int y)

{

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

{

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

{

if (\*(\*(a+i)+j)>\*(\*(b+i)+j))

{

\*(\*(c+i)+j)=\*(\*(a+i)+j);

}

else

{

\*(\*(c+i)+j)=\*(\*(b+i)+j);

}

}

}

return;

}

void display(int (\*a)[20],int x,int y)

{

printf("The resultant table is:\n");

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

{

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

{

printf("%d\t",\*(\*(a+i)+j));

}

printf("\n");

}

return;

}

**Output**:

cseb121@jtl-19:~$gcc a5\_3a -o a5\_3a

cseb121@jtl-19:~$./ a5\_3a

Enter the number of rows:2

Enter the number of coloumns:2

First table:

Enter the 1th row 1th column element:4

Enter the 1th row 2th column element:5

Enter the 2th row 1th column element:6

Enter the 2th row 2th column element:7

Second table:

Enter the 1th row 1th column element:6

Enter the 1th row 2th column element:7

Enter the 2th row 1th column element:4

Enter the 2th row 2th column element:5

The resultant table is:

6 7

6 7

**3b. Modify 11.22**

#include<stdio.h>

#include<stdlib.h>

void readinput(int \*a[20],int row,int col);

void computetable(int \*a[20],int \*b[20],int \*c[20],int row,int col);

void display(int \*a[20],int row,int col);

int main()

{

int row,col;

int \*a[20], \*b[20], \*c[20];

printf("Enter the number of rows:");

scanf("%d",&row);

printf("Enter the number of coloumns:");

scanf("%d",&col);

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

{

a[i]=(int \*) malloc (col\*sizeof(int));

b[i]=(int \*) malloc (col\*sizeof(int));

c[i]=(int \*) malloc (col\*sizeof(int));

}

printf("First table:\n");

readinput(a,row,col);

printf("Second table:\n");

readinput(b,row,col);

computetable(a,b,c,row,col);

display(c,row,col);

return 0;

}

void readinput(int \*a[20],int x,int y)

{

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

{

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

{

printf("Enter the %dth row %dth column element:",i+1,j+1);

scanf("%d",(\*(a+i)+j));

}

}

return;

}

void computetable(int \*a[20],int \*b[20],int \*c[20],int x,int y)

{

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

{

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

{

if (\*(\*(a+i)+j)>\*(\*(b+i)+j))

{

\*(\*(c+i)+j)=\*(\*(a+i)+j);

}

else

{

\*(\*(c+i)+j)=\*(\*(b+i)+j);

}

}

}

return;

}

void display(int \*a[20],int x,int y)

{

printf("The resultant table is:\n");

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

{

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

{

printf("%d\t",\*(\*(a+i)+j));

}

printf("\n");

}

return;

}

**Output:**

cseb121@jtl-19:~$gcc a5\_3b -o a5\_3b

cseb121@jtl-19:~$./a5\_3b

Enter the number of rows:2

Enter the number of coloumns:2

First table:

Enter the 1th row 1th column element:5

Enter the 1th row 2th column element:6

Enter the 2th row 1th column element:7

Enter the 2th row 2th column element:8

Second table:

Enter the 1th row 1th column element:6

Enter the 1th row 2th column element:5

Enter the 2th row 1th column element:4

Enter the 2th row 2th column element:3

The resultant table is:

6 6

7 8

**4. Days Count**

#include<stdio.h>

void readinput(int \*pm,int \*pd,int \*py);

int ndays(int mm,int dd,int yy);

int main()

{

int mm1,dd1,yy1,mm2,dd2,yy2,days1,days2;;

printf("Enter the month date year of the first date:");

readinput(&mm1,&dd1,&yy1);

printf("Enter the month date year of the second date:");

readinput(&mm2,&dd2,&yy2);

days1=ndays(mm1,dd1,yy1);

days2=ndays(mm2,dd2,yy2);

if (days1-days2 >= 0)

{

printf("The difference between the two dates is:%d\n",days1-days2);

}

else

{

printf("The differnce between the two dates is:%d\n",days2-days1);

}

return 0;

}

void readinput(int \*pm,int \*pd,int \*py)

{

scanf("%d %d %d",pm,pd,py);

return;

}

int ndays(int mm,int dd,int yy)

{

int nyears,nodays;

long ndays,ncycles;

yy-=1900;

ndays=(long)(30.42 \* (mm-1) + dd);

if(mm==2) ++ndays;

if ((mm>2) && (mm<8)) --ndays;

if ((yy%4==0) && (mm>2)) ++ndays;

ncycles=yy/4;

ndays+=ncycles\*1461;

nyears=yy % 4;

if (nyears>0)

{

ndays+=365\*nyears+1;

}

if (ndays>59) --ndays;

nodays=ndays;

return nodays;

}

**OUTPUT:**

cseb121@jtl-19:~$gcc a5\_4 -o a5\_4

cseb121@jtl-19:~$./ a5\_4

Enter the month date year of the first date:05 30 2001

Enter the month date year of the second date:3 31 2019

The differnce between the two dates is:6514

**5. CI**

#include<stdio.h>

#include<stdlib.h>

#include<ctype.h>

#include<math.h>

double table(double(\*pf)(double i,int m,double n),double a,int m,double n,int j);

double md1(double i, int m,double n);

double md2(double i, int m,double n);

double md3(double i, int m,double n);

void display(double \*a[15]);

int main()

{

int m;

double n,a,A[20],S[20],Q[20],M[20],D[20],C[20];

printf("FUTURE VALUE OF A SERIES OF MONTHLY DEPOSITS\n");

printf("Amount of each monthly payment: ");

scanf("%lf", &a);

printf("Number of years:");

scanf("%lf", &n);

printf("\t\tA=%.2lf\n",a);

printf("\t\tn=%.2lf\n",n);

printf("Interest rate= 5%%\t6%%\t7%%\t8%%\t9%%\t10%%\t11%%\t12%%\t13%%\t14%%\t15%%\n");

printf("Frequency\noof compounding\n");

for (int j=0;j<11;j++)

{

m=1;

A[j]=table(md1,a,m,n,j);

m=2;

S[j]=table(md1,a,m,n,j);

m=4;

Q[j]=table(md1,a,m,n,j);

m=6;

M[j]=table(md1,a,m,n,j);

m=360;

D[j]=table(md2,a,m,n,j);

m=0;

C[j]=table(md3,a,m,n,j);

}

printf("Annual\t\t");

display(&A);

printf("Semiannual\t");

display(&S);

printf("Quarterly\t");

display(&Q);

printf("Monthly\t\t");

display(&M);

printf("Daily\t\t");

display(&D);

printf("Continuously\t");

display(&C);

return 0;

}

double table(double(\*pf)(double i,int m,double n),double a,int m,double n,int j)

{

double i,f;

i=0.01\*(j+5);

f=a\*(\*pf)(i,m,n);

return f;

}

double md1(double i,int m,double n)

{

double factor,ratio;

factor=1+i/m;

ratio=12\*(pow(factor,m\*n)-1)/i;

return(ratio);

}

double md2(double i,int m,double n)

{

double factor,ratio;

factor=1+i/m;

ratio=(pow(factor,m\*n)-1)/ (pow(factor,m/12)-1);

return (ratio);

}

double md3(double i,int m,double n)

{

double ratio;

ratio=(exp(i\*n)-1)/(exp(i/12)-1);

return(ratio);

}

void display(double \*a[15])

{

for(int l=0;l<11;l++)

{

printf("%.2lf\t",\*(a+l));

}

printf("\n");

}

**Output**:

cseb121@jtl-19:~$gcc a5\_5a -o a5\_5a

[cseb121@jtl-19:~$./ a5\_5a](mailto:cseb126@jtl-25:./a)

FUTURE VALUE OF A SERIES OF MONTHLY DEPOSITS

Amount of each monthly payment: 100

Number of years:2

A=100.00

n=2.00

Interest rate= 5% 6% 7% 8% 9% 10% 11% 12% 13% 14% 15%

Frequency

of compounding

Annual 2460.00 2472.00 2484.00 2496.00 2508.00 2520.00 2532.00 2544.00 2556.00 2568.00 2580.00

Semiannual 2491.51 2510.18 2528.97 2547.88 2566.91 2586.07 2605.36 2624.77 2644.30 2663.97 2683.75

Quarterly 2507.67 2529.85 2552.26 2574.89 2597.75 2620.83 2644.15 2667.70 2691.48 2715.51 2739.77

Monthly 2513.11 2536.50 2560.15 2584.06 2608.24 2632.69 2657.42 2682.42 2707.70 2733.26 2759.11

Daily 2518.84 2543.56 2568.60 2593.97 2619.69 2645.74 2672.14 2698.90 2726.01 2753.48 2781.33

Continuously2518.85 2543.57 2568.62 2594.00 2619.72 2645.78 2672.19 2698.95 2726.07 2753.562781.41

**5a. CI Modification**

#include<stdio.h>

#include<stdlib.h>

#include<ctype.h>

#include<math.h>

double table(double(\*pf)(double i,int m,double n),double a,int m,double n,int j);

double md1(double i, int m,double n);

double md2(double i, int m,double n);

double md3(double i, int m,double n);

void display(double \*a[15],double \*b[15],double \*c[15],double \*d[15],double \*e[15],double \*f[15],int x);

int main()

{

int m;

double n,a,A[20],S[20],Q[20],M[20],D[20],C[20];

printf("FUTURE VALUE OF A SERIES OF MONTHLY DEPOSITS\n");

printf("Amount of each monthly payment: ");

scanf("%lf", &a);

printf("Number of years:");

scanf("%lf", &n);

printf("\t\tA=%.2lf\n",a);

printf("\t\tn=%.2lf\n",n);

printf("Interest\tAnnual\t\tSemiannual\tQuarterly\tMonthly\t\tDaily\t\tContinuous\n");

printf("Rate\t\tCompounding\tCompounding\tCompounding\tCompounding\tCompounding\tCompounding\n");

for (int j=0;j<11;j++)

{

m=1;

A[j]=table(md1,a,m,n,j);

m=2;

S[j]=table(md1,a,m,n,j);

m=4;

Q[j]=table(md1,a,m,n,j);

m=6;

M[j]=table(md1,a,m,n,j);

m=360;

D[j]=table(md2,a,m,n,j);

m=0;

C[j]=table(md3,a,m,n,j);

}

for(int k=0;k<11;k++)

{

printf("%d%%\t\t",k+5);

display(&A,&S,&Q,&M,&D,&C,k);

printf("\n");

}

return 0;

}

double table(double(\*pf)(double i,int m,double n),double a,int m,double n,int j)

{

double i,f;

i=0.01\*(j+5);

f=a\*(\*pf)(i,m,n);

return f;

}

double md1(double i,int m,double n)

{

double factor,ratio;

factor=1+i/m;

ratio=12\*(pow(factor,m\*n)-1)/i;

return(ratio);

}

double md2(double i,int m,double n)

{

double factor,ratio;

factor=1+i/m;

ratio=(pow(factor,m\*n)-1)/ (pow(factor,m/12)-1);

return (ratio);

}

double md3(double i,int m,double n)

{

double ratio;

ratio=(exp(i\*n)-1)/(exp(i/12)-1);

return(ratio);

}

void display(double \*a[15],double \*b[15],double \*c[15],double \*d[15],double \*e[15],double \*f[15],int x)

{

printf("%.2lf\t\t%.2lf\t\t%.2lf\t\t%.2lf\t\t%.2lf\t\t%.2lf\t\t",\*(a+x),\*(b+x),\*(c+x),\*(d+x),\*(e+x),\*(f+x));

}

**Output:**

cseb121@jtl-19:~$gcc a5\_5b -o a5\_5b

cseb121@jtl-19:~$./ a5\_5b

FUTURE VALUE OF A SERIES OF MONTHLY DEPOSITS

Amount of each monthly payment: 100

Number of years:2

A=100.00

n=2.00

Interest Annual Semiannual Quarterly Monthly Daily Continuous

Rate Compounding Compounding Compounding Compounding Compounding Compounding

5% 2460.00 2491.51 2507.67 2513.11 2518.84 2518.85

6% 2472.00 2510.18 2529.85 2536.50 2543.56 2543.57

7% 2484.00 2528.97 2552.26 2560.15 2568.60 2568.62

8% 2496.00 2547.88 2574.89 2584.06 2593.97 2594.00

9% 2508.00 2566.91 2597.75 2608.24 2619.69 2619.72

10% 2520.00 2586.07 2620.83 2632.69 2645.74 2645.78

11% 2532.00 2605.36 2644.15 2657.42 2672.14 2672.19

12% 2544.00 2624.77 2667.70 2682.42 2698.90 2698.95

13% 2556.00 2644.30 2691.48 2707.70 2726.01 2726.07

14% 2568.00 2663.97 2715.51 2733.26 2753.48 2753.56

15% 2580.00 2683.75 2739.77 2759.11 2781.33 2781.41