Structures:

Create a record book and having elements name,price and pages

#include<stdio.h>

struct book

{

char name[100];

int pages;

float price;

};

int main()

{

struct book b;

strcpy(b.name,"compiler design");

b.pages=1000;

b.price=450;

printf("\n book details are \n");

printf("\n name is:%s",b.name);

printf("\n no of pages:%d",b.pages);

printf("\n price is:%8.2f",b.price);

return 0;

}

Create record student and data members are name,rno,fee and address

(NOTE: read the data member values from keyboard)

#include<stdio.h>

struct student

{

char name[100];

char address[1000];

int rno;

float fee;

}s;

int main()

{

printf("enteer name,adress ,rno and fee of th student");

scanf("%s%s%d%f",s.name,s.address,&s.rno,&s.fee);

printf("\n student details are \n");

printf("\n name is:%s",s.name);

printf("\n address is:%s",s.address);

printf("\n rno:%d",s.rno);

printf("\n fee is:%8.2f",s.fee);

return 0;

}

Create a record employee with typedef,take atleast three data members(name,id,salary)

#include<stdio.h>

#include<string.h>

typedef struct

{

char name[100];

int id;

float salary;

}emp;

int main()

{

emp e;

strcpy(e.name,"nitika");

e.id=38;

e.salary=30000;

printf("\n employee details are \n");

printf("\n name is:%s",e.name);

printf("\n id:%d",e.id);

printf("\n salary is:%8.2f",e.salary);

return 0;

}

Program to add 2 complex numbers using strcuture

#include<stdio.h>

#include<string.h>

struct complex

{

float real;

float imag;

}c1,c2;

int main()

{

float rc,imagc;

printf("enter real and imaginary numbers of the first complex number");

scanf("%f%f",&c1.real,&c1.imag);

printf("enter the real and complex numbers of second complex number");

scanf("%f%f",&c2.real,&c2.imag);

rc=c1.real+c2.real;

imagc=c1.imag+c2.imag;

printf("first no is=%.f+i%.f\n",c1.real,c1.imag);

printf("second no is=%.f+i%.f\n",c2.real,c2.imag);

printf("result is=%.f+i%.f\n",rc,imagc);

return 0;

}

Create a nested structure having members title,pages,price and date of publishing of the book

#include<stdio.h>

#include<string.h>

struct book

{

char title[100];

int pages;

float price;

struct dop

{

int dd;

int mm;

int yyyy;

}d;

}b;

int main()

{

strcpy(b.title,"goosebumps");

b.pages=500;

b.price=300;

b.d.dd=23;

b.d.mm=01;

b.d.yyyy=2020;

printf("\n the book details are \n");

printf("\n title of the book is:%s",b.title);

printf("\n pages :%d",b.pages);

printf("\n price :%8.2f",b.price);

printf("\n date of purcase of the book is");

printf("\n date :%d-%d-%d",b.d.dd,b.d.mm,b.d.yyyy);

return 0;

}

Read the 3 records of the book and display the data of the book

#include<stdio.h>

#include<string.h>

struct book

{

char title[100];

int pages;

float price;

}b[3];

int main()

{

int i;

for(i=1;i<=3;i++)

{

printf("enter the book %d data",i);

scanf("%s%d%f",b[i].title,&b[i].pages,&b[i].price);

}

for(i=1;i<=3;i++)

{

printf("\n book %d data \n",i);

printf("name:%s\n",b[i].title);

printf("pages:%d\n",b[i].pages);

printf("price:%8.2f\n",b[i].price);

}

return 0;

}

union:

Create a record accoune using union

#include<stdio.h>

union account

{

char name[100];

int accno;

float bal;

}a;

int main()

{

printf("\n bank account details \n");

strcpy(a.name,"nitika");

printf("name is:%s\n",a.name);

a.accno=2222;

printf("account no:%d\n",a.accno);

a.bal=45000;

printf("balance:%8.2f\n",a.bal);

return 0;

}

i/o:gitam hyd

o/p:Gitam Hyd

#include<stdio.h>

int main()

{

char str[100];

int i;

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

for(i=0;str[i]!='\0';i++)

{

if(i==0)

str[i]=str[i]-32;

else if(str[i]==' ')

str[i+1]=str[i+1]-32;

}

printf("%s",str);

return 0;

}

i/p:gitamhyd

o/p:g

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gitamhyd

#include<stdio.h>

int main()

{

char str[100];

int i,j;

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

for(i=0;str[i]!='\0';i++)

{

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

{

printf("%c",str[j]);

}

printf("\n");

}

return 0;

}

POINTER:

ex:

#include <stdio.h>

int main()

{

int a=100;

int \*ptr;

ptr=&a;

printf("\n a=%d",a);

printf("\n &a=%d",&a);

printf("\n \*&a=%d",\*&a);

printf("\n ptr=%d",ptr);

printf("\n value of a using ptr:%d",\*ptr);

\*ptr=\*ptr+200;

printf("\n after modification a is:%d",a);

return 0;

}

Typed pointer ex:

#include <stdio.h>

int main()

{

int a=10;

char b='$';

float c=12.56;

int \*aptr;

char \*bptr;

float \*cptr;

aptr=&a;

bptr=&b;

cptr=&c;

printf("\n the value of a is:%d",\*aptr);

printf("\n the address of a is:%d",\*aptr);

printf("\n the value of b is:%c",\*bptr);

printf("\n the address of b is:%d",bptr);

printf("\n the value of c is:%.2f",\*cptr);

printf("\n the address of c is:%d",cptr);

return 0;

}

Untyped pointer ex:(void pointer)

#include <stdio.h>

int main()

{

int a=10;

char b='$';

float c=12.56;

int \*aptr;

char \*bptr;

float \*cptr;

void \*vptr;

vptr=&a;

printf("\n address of a is:%p",vptr);

printf("\n the value of a is:%d",\*((int\*)vptr));

vptr=&b;

printf("\n the address of b is:%p",vptr);

printf("\n the value of b is:%c",\*((char\*)vptr));

vptr=&c;

printf("\n the address of c is:%p",vptr);

printf("\n the value of c is:%.2f",\*((float\*)vptr));

return 0;

}

o/p:888

#include <stdio.h>

int main()

{

int a=10;

char b='$';

float c=12.56;

int \*aptr;

char \*bptr;

float \*cptr;

aptr=&a;

bptr=&b;

cptr=&c;

printf("%d%d%d",sizeof(aptr),sizeof(bptr),sizeof(cptr));

return 0;

}

i/p:4 o/p: 6 7

1 2 3 4 2 3

5 6 7 8

1 2 3 4

5 6 7 8

#include <stdio.h>

int main()

{

int a[10][10],i,j,n;

scanf("%d",&n);

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

{

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

{

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

}

}

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

{

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

{

if(i!=0 && j!=0 && i!=n-1 && j!=n-1)

{

printf("%d\t",a[i][j]);

}

}

printf("\n");

}

return 0;

}

i/p:5 o/p:1 3 8 15 5

1 2 3 4 5

(put 1st and last elements same and multiply alternate numbers)

#include <stdio.h>

int main()

{

int a[100],i,n;

scanf("%d",&n);

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

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

printf("%d",a[0]);

for(i=1;i<n-1;i++)

{

printf("%d",a[i-1]\*a[i+1]);

}

printf("%d",a[n-1]);

return 0;

}