SET DATASTRUCTURE

//Universal Set is {1,2,3,4,5,6,7,8,9}

#include <stdio.h>

void input();

void output();

void setunion();

void intersection();

void difference();

int a[]={0,0,0,0,0,0,0,0,0},b[]={0,0,0,0,0,0,0,0,0};

int c[]={0,0,0,0,0,0,0,0,0};

int main()

{

int ch,wish;

clrscr();

do

{

printf("\n\_\_\_MENU\_\n");

printf("1.Input\n2.Union\n3.Intersection\n4.Difference\n");

printf("enter choice\n");

scanf("%d",&ch);

switch(ch)

{

case 1:input();

break;

case 2:setunion();

break;

case 3:intersection();

break;

case 4:difference();

break;

}

printf("\nDo you wish to continue ?(1/0)\n");

scanf("%d",&wish);

}while(wish==1);

}

void input()

{

int n,x,i;

printf("Enter size of the 1st set\n");

scanf("%d",&n);

printf("\nEnter elements:\t");

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

{

scanf("%d",&x);

a[x]=1;

}

printf("\nEnter size of the 2nd set\n");

scanf("%d",&n);

printf("\nEnter elements:\t");

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

{

scanf("%d",&x);

b[x]=1;

}

printf("\n1st set:\t");

for(i=1;i<=9;i++)

{

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

}

printf("\n2nd set:\t");

for(i=1;i<=9;i++)

{

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

}

}

void output(int c[])

{

int i;

printf("\n Set is:\t");

for(i=1;i<=9;i++)

{

if (c[i]!=0)

printf("%d\t",i);

}

}

void setunion()

{

int i,c[10];

for(i=1;i<=9;i++)

{

if(a[i]!=b[i])

c[i]=1;

else

c[i]=a[i];

}

for(i=1;i<=9;i++)

{

printf("%d",c[i]);

}

output(c);

}

void intersection()

{

int i,c[10];

for(i=1;i<=9;i++)

{

if (a[i]==b[i])

c[i]=a[i];

else

c[i]=0;

}

for(i=1;i<=9;i++)

{

printf("%d",c[i]);

}

output(c);

}

void difference()

{

int i,c[10];

for(i=1;i<=9;i++)

{

if (a[i]==1 && b[i]==0)

c[i]=1;

else

c[i]=0;

}

for(i=1;i<=9;i++)

{

printf("%d",c[i]);

}

output(c);

}

OUTPUT







