***Assignmnt No.1***

Represent steps using one dimensional array and implement functions to perform

1.Union 2.Intersection

3.Difference 4.Symmetric difference of two sets

ROLL NO 66

Batch: - S3

#include<stdio.h>

#include<stdlib.h>

#define M 40

int Create(int s[]);

void Set\_print(int s[],int x);

int Union(int s1[],int s2[],int s3[],int m,int n);

int Intersection(int s1[],int s2[],int s3[],int m,int n);

int Difference(int s1[],int s2[],int s3[],int m,int n);

int Symmdiff(int s1[],int s2[],int s3[],int m,int n);

int main()

{

int s1[M],s2[M],s3[M],m,n,k=0;

int ch;

do

{

printf("\n \*\*\* MENU \*\*\*");

printf("\n 1.Create");

printf("\n 2.Print");

printf("\n 3.Union");

printf("\n 4.Intersection");

printf("\n 5.Difference");

printf("\n 6.Symmetric Difference");

printf("\n 7.Quit");

printf("\n\n Enter your choice: ");

scanf("%d",&ch);

switch(ch)

{

case 1: printf("\nCreating first Set:");

m=Create(s1);

printf("\nCreating second Set:");

n=Create(s2);

break;

case 2: printf("\nFirst set is:\n");

Set\_print(s1,m);

printf("\n\nSecond set is:\n");

Set\_print(s2,n);

printf("\n\nThird set is:\n");

Set\_print(s3,k);

break;

case 3: printf("Union of sets is:");

k=Union(s1,s2,s3,m,n);

Set\_print(s3,k);

break;

case 4: printf("Intersection of sets is:");

k=Intersection(s1,s2,s3,m,n);

Set\_print(s3,k);

break;

case 5: printf("Difference of sets is:");

k=Difference(s1,s2,s3,m,n);

Set\_print(s3,k);

break;

case 6: printf("Symm\_Diff of sets is:");

k=Symmdiff(s1,s2,s3,m,n);

Set\_print(s3,k);

break;

case 7: exit(0);

default: printf("Invalid choice");

break;

}

}while(ch!=7);

}

int Create(int s[])

{

int n,i,x;

printf("\n Enter number of elements:="); scanf("%d",&n);

printf("\n Enter %d set elements:=",n);

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

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

return(n);

}

void Set\_print(int s[],int x)

{

int i;

printf("\t\t{ ");

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

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

printf(" }");

}

int Union(int s1[],int s2[],int s3[],int m,int n)

{

int i,j,f,k=0;

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

{

s3[i]=0;

}

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

{

s3[k]=s1[i];

k++;

}

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

{

f=0;

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

{

if(s2[i]==s1[j])

{

f=1;

break;

}

}

if(f==0)

{

s3[k]=s2[i];

k++;

}

}

return(k);

}

int Intersection(int s1[],int s2[],int s3[],int m,int n)

{

int i,j,k=0,f;

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

s3[i]=0;

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

{

f=1;

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

{

if(s1[i]==s2[j])

{

f=0;

break;

}

}

if(f==0)

{

s3[k]=s1[i];

k++;

}

}

return(k);

}

int Difference(int s1[],int s2[],int s3[],int m,int n)

{

int i,j,k=0,f;

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

s3[i]=0;

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

{

f=0;

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

{

if(s1[i]==s2[j])

{

f=1;

break;

}

}

if(f==0)

{

s3[k]=s1[i];

k++;

}

}

return(k);

}

int Symmdiff(int s1[],int s2[],int s3[],int m,int n)

{

int i,j,k=0,f;

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

s3[i]=0;

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

{

f=0;

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

{

if(s1[i]==s2[j])

{

f=1;

break;

}

}

if(f==0)

{

s3[k]=s1[i];

k++;

}

}

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

{

f=0;

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

{

if(s2[i]==s1[j])

{

f=1;

break;

}

}

if(f==0)

{

s3[k]=s2[i];

k++;

}

}

return(k);

}

----------------OUTPUT--------------

\*\*\* MENU \*\*\*

1.Create

2.Print

3.Union

4.Intersection

5.Difference

6.Symmetric Difference

7.Quit

Enter your choice: 1

Creating first Set:

Enter number of elements:=5

Enter 5 set elements:=6

2

3

4

5

Creating second Set:

Enter number of elements:=5

Enter 5 set elements:=6

8

9

1

2

\*\*\* MENU \*\*\*

1.Create

2.Print

3.Union

4.Intersection

5.Difference

6.Symmetric Difference

7.Quit

Enter your choice: 2

First set is:

{ 6 2 3 4 5 }

Second set is:

{ 6 8 9 1 2 }

Third set is:

{ }

\*\*\* MENU \*\*\*

1.Create

2.Print

3.Union

4.Intersection

5.Difference

6.Symmetric Difference

7.Quit

Enter your choice: 3

Union of sets is: { 6 2 3 4 5 8 9 1 }

\*\*\* MENU \*\*\*

1.Create

2.Print

3.Union

4.Intersection

5.Difference

6.Symmetric Difference

7.Quit

Enter your choice: 4

Intersection of sets is: { 6 2 }

\*\*\* MENU \*\*\*

1.Create

2.Print

3.Union

4.Intersection

5.Difference

6.Symmetric Difference

7.Quit

Enter your choice: 5

Difference of sets is: { 3 4 5 }

\*\*\* MENU \*\*\*

1.Create

2.Print

3.Union

4.Intersection

5.Difference

6.Symmetric Difference

7.Quit

Enter your choice: 6

Symm\_Diff of sets is: { 3 4 5 8 9 1 }

\*\*\* MENU \*\*\*

1.Create

2.Print

3.Union

4.Intersection

5.Difference

6.Symmetric Difference

7.Quit

Enter your choice: 7