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#include <stdio.h>

struct Disjoint{
   int parent[10];
   int rank[10];
   int n;

}dis;

 void makeSet()
{
    for(int i=0;i<dis.n;i++){
        dis.parent[i]=i;
        dis.rank[i]=0;
    }
}

 void displaySet()

 {
     printf("\nParent Array\n");
     for(int i=0;i<dis.n;i++){
         printf("%d",dis.parent[i]);}
         printf("\nRank Array\n");
         for(int i=0;i<dis.n;i++)
         {
           printf("%d",dis.rank[i]);
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        }
        printf("\n");
}
int find(int x)
{
    if(dis.parent[x]!=x) {
        dis.parent[x]=find(dis.parent[x]);
    }
    return dis.parent[x];
}
void Union(int x,int y)
{
    int xset=find(x);
     int yset=find(y);
     if(xset==yset)
     return;
     if(dis.rank[xset]<dis.rank[yset]){
       dis.parent[xset]=yset;
       dis.rank[xset]=-1;
     }
     else if(dis.rank[xset]>dis.rank[yset]){
         dis.parent[xset]=yset;
         dis.rank[xset]=-1;

     }
     else if(dis.rank[xset]>dis.rank[yset]){
         dis.parent[yset]=xset;
         dis.rank[yset]=-1;
     }
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else {
   dis.parent[yset]=xset;
   dis.rank[xset]=dis.rank[xset]+1;
   dis.rank[yset]=-1;

}
}
int main()
{
   int n,x,y;
   printf("How many elements?");
   scanf("%d",&dis.n);
   makeSet();
   int ch,wish;
   do
   {
      printf("\n_______MENU_______\n");
      printf("1.Union\n2.Find\n3.Display\n");
      printf("Enter choice\n");
      scanf("%d",&ch);

      switch(ch)
      {
         case 1:printf("Enter elements to check if connected union");
               scanf("%d%d",&x,&y);
               Union(x,y);
               break;
         case 2:printf("Enter elements to check if connected components");
               scanf("%d%d",&x,&y);
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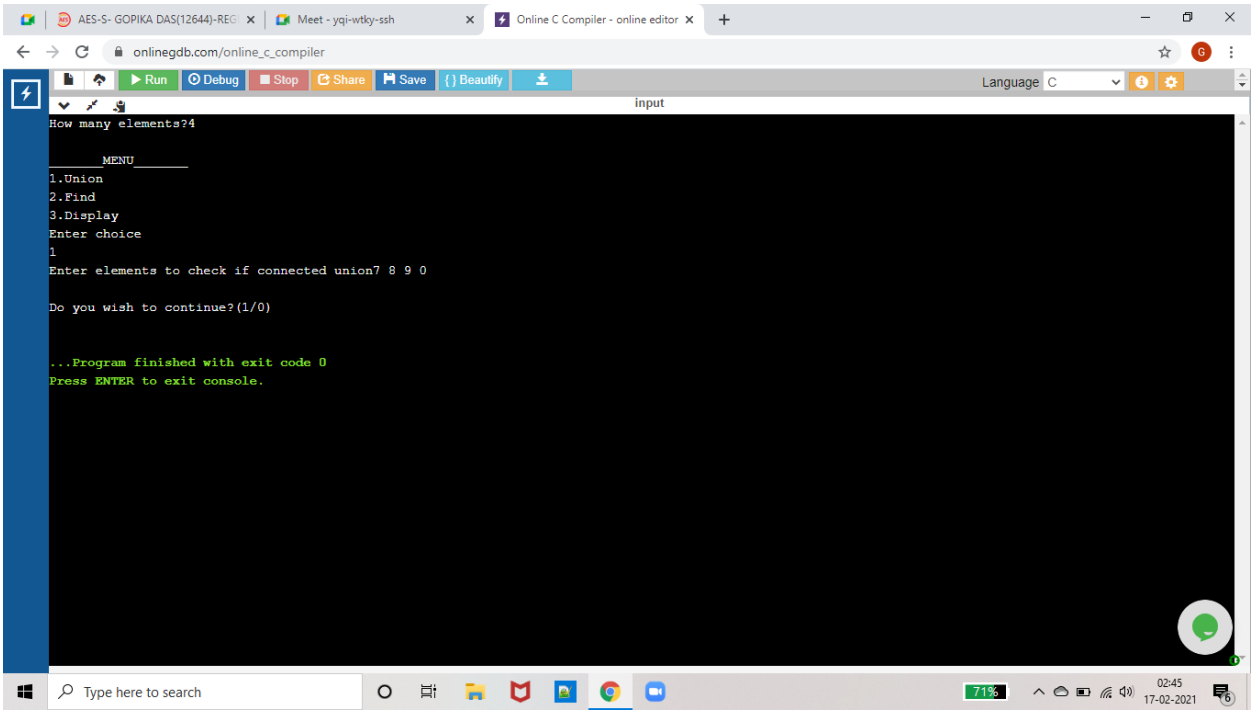
            if(find(x)==find(y))
            printf("Connected components\n");
            else
             printf(" Not Connected components\n");

            break;
            case 3:displaySet();
            break; }
        printf("\nDo you wish to continue?(1/0)\n");
        scanf("%d",&wish);
    }
    while(wish==1);
    return 0;
}
```


AES-S- GOPIKA DAS(12644)-REG
Meet - yqi-wtky-ssh
Online C Compiler - online editor
onlinegdb.com/online_c_compiler
Run
Debug
Stop
Share
Save
{ } Beautify
Language C
input
How many elements?4
_____MENU_____
1.Union
2.Find
3.Display
Enter choice
1
Enter elements to check if connected union7 8 9 0
Do you wish to continue?(1/0)
...Program finished with exit code 0
Press ENTER to exit console.
Type here to search
71%
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