
```
#include <stdio.h>
```

```
int left_to_right=1;
```

```
int right_to_left=0;
```

```
int searcharr(int a[],int n, int mob){
```

```
    int i;
```

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

```
        if(a[i]==mob)
```

```
            return i+1;
```

```
    }
```

```
    return 0;
```

```
}
```

```
int getmobile(int a[], int dir[],int n){
```

```
    int mob_prev=0,mob=0,i;
```

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

```
        if(dir[a[i]-1]==right_to_left && i!=0){
```

```
            if(a[i]>a[i-1]&&a[i]>mob_prev){
```

```
                mob=a[i];
```

```
                mob_prev=mob;
```

```
            }
```

```
        }
```

```
        if(dir[a[i]-1]==left_to_right && i!=n-1){
```

```
            if(a[i]>a[i+1]&&a[i]>mob_prev){
```

```
                mob=a[i];
```

```
                mob_prev=mob;
```

```
            }
```

```
        }
```

```
    }
```

```
    if(mob==0&&mob_prev==0)
```

```
        return 0;
```



```

return 0;
else
return mob;
}

int printoneperm(int a[], int dir[],int n){
int mob,pos,temp,i;
mob=getmobile(a,dir,n);
pos=searcharr(a,n,mob);
if(dir[a[pos-1]-1]==right_to_left){
temp=a[pos-1];
a[pos-1]=a[pos-2];
a[pos-2]=temp;
}
else if(dir[a[pos-1]-1]==left_to_right){
temp=a[pos];
a[pos]=a[pos-1];
a[pos-1]=temp;
}
for(i=0;i<n;i++){
if(a[i]>mob){
if(dir[a[i]-1]==left_to_right)
dir[a[i]-1]=right_to_left;
else if(dir[a[i]-1]==right_to_left)
dir[a[i]-1]=left_to_right;
}
}
for(i=0;i<n;i++){
printf("%d",a[i]);
}
printf(" ");
return 0;
}

```

```

void printpermutations(int n){
int a[n],i;

```



```
if(dir[a[i]-1]==left_to_right)
dir[a[i]-1]=right_to_left;
else if(dir[a[i]-1]==right_to_left)
dir[a[i]-1]=left_to_right;
```

```
}
}
for(i=0;i<n;i++){
    printf("%d",a[i]);
}
printf(" ");
return 0;
```

```
void printpermutations(int n){
    int a[n],i;
    int dir[n];
    for(i=0;i<n;i++){
        a[i]=i+1;
        printf("%d",a[i]);
    }
    printf(" ");
    for(i=0;i<n;i++)
        dir[i]=right_to_left;
    while(getmobile(a,dir,n)!=0)
        printoneperm(a,dir,n);
}
```

```
int main(){
    int n;
    printf("Enter the number\n");
    scanf("%d",&n);
    printf("The Permutations are : \n");
    printpermutations(n);
    printf("\n");
    return 0;
}
```

```
input
Enter the number
5
The Permutations are :
12345 12354 12534 15234 51234 51243 15243 12543 12453 12435 14235 14253 14523 15423 51423 54123 45123 41
523 41253 41235 41325 41352 41532 45132 54132 51432 15432 14532 14352 14325 13425 13452 13542 15342 513
42 51324 15324 13524 13254 13245 31245 31254 31524 35124 53124 53142 35142 31542 31452 31425 34125 3415
2 34512 35412 53412 54312 45312 43512 43152 43125 43215 43251 43521 45321 54321 53421 35421 34521 34251
34215 32415 32451 32541 35241 53241 53214 35214 32514 32154 32145 23145 23154 23514 25314 52314 52341
25341 23541 23451 23415 24315 24351 24531 25431 52431 54231 45231 42531 42351 42315 42135 42153 42513
45213 54213 52413 25413 24513 24153 24135 21435 21453 21543 25143 52143 52134 25134 21534 21354 21345

...Program finished with exit code 0
Press ENTER to exit console.
```