**Question 1 -**

Sample output when n = 5

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**Solution -**

#include<stdio.h>

int main()

{

int n,i,j;

scanf("%d",&n);

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

{

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

{

printf("\* ");

}

printf("\n");

}

return 0;

}

**Question 2 -**

>> Find the k-th largest element or k-th smallest element

**Solution -**

/\*

Steps -

1) Input niyachi n (array er size)

2) n size er array ta input niyachi

3) Oi array theke largest element ta find korte hbe er pore

4) arr[largestElement+1] size er akta array declare korechi

5) arr[largestElement+1] size er array er prottek ta index ee 0

assign kore dita hbe.

6) 0 theke n times akta loop chalaite hbe and every index eer jonno ai

operation ta -> arr[input[i]]+=1; perform korsi

7) depends on problem statement

\*/

#include<stdio.h>

int main()

{

int n,i;

scanf("%d",&n);

int input[n];

for(i=0; i<n; i+=1)

{

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

}

int largestElement=input[0];

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

{

if(input[i]>largestElement)

{

largestElement=input[i];

}

}

int arr[largestElement+1];

for(i=0; i<=largestElement; i+=1)

{

arr[i]=0;

}

for(i=0; i<n; i+=1)

{

arr[input[i]]+=1;

}

int cnt=0;

for(i=largestElement; i>=1; i-=1)

{

if(arr[i]==1)

{

cnt++;

}

if(cnt==3)

{

printf("3rd largest element is %d\n",i);

break;

}

}

return 0;

}

**Question 3 -**

>> Find the duplicate or unique element from an array

**Solution -**

/\*

Steps -

1) Input niyachi n (array er size)

2) n size er array ta input niyachi

3) Oi array theke largest element ta find korte hbe er pore

4) arr[largestElement+1] size er akta array declare korechi

5) arr[largestElement+1] size er array er prottek ta index ee 0

assign kore dita hbe.

6) 0 theke n times akta loop chalaite hbe and every index eer jonno ai

operation ta -> arr[input[i]]+=1; perform korsi

7) depends on problem statement

\*/

#include<stdio.h>

int main()

{

int n,i;

scanf("%d",&n);

int input[n];

for(i=0; i<n; i+=1)

{

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

}

int largestElement=input[0];

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

{

if(input[i]>largestElement)

{

largestElement=input[i];

}

}

int arr[largestElement+1];

for(i=0; i<=largestElement; i+=1)

{

arr[i]=0;

}

for(i=0; i<n; i+=1)

{

arr[input[i]]+=1;

}

int duplicate=0,unique=0;

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

{

if(arr[i]==1)

unique+=1;

else if(arr[i]>1)

duplicate+=1;

}

printf("Total duplicate element found %d\n",duplicate);

printf("Total unique element found %d\n",unique);

return 0;

}

**Question 4 -**

Link - <https://codeforces.com/contest/1512/problem/A>

**Solution -**

#include<stdio.h>

int main()

{

int t,ii;

scanf("%d",&t);

for(ii=1; ii<=t; ii+=1)

{

int n,i,maxN=101;

scanf("%d",&n);

int input[n+1];

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

{

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

}

int arr[maxN];

for(i=0; i<maxN; i+=1)

{

arr[i]=0;

}

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

{

arr[input[i]]+=1;

}

int index;

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

{

if(arr[input[i]]==1)

{

index=i;

break;

}

}

printf("%d\n",index);

}

return 0;

}