CODECHEF
An Educational Initiative

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Code, Compile & Run

Ide ✖ +

| Contest Code/Name (e.g. JULY15/PRACTICE) | Problem Code/Name (e.g. TEST) | **Select** |

C (gcc 6.3) ▾ 💾 🗑 Code gets autosaved every second   ⓘ ⬇ ⤢ ⚙

```c
1   #include<stdio.h>
2   #include<stdlib.h>
3   int main()
4 ▾ {
5   int smallest, secondsmallest;
6   int array[100],size,i;
7   printf("\nHow many elements do you want to enter:");
8   scanf("%d",&size);
9   printf("\nEnter %d  elements",size);
10  for(i=0;i<size;i++)
11  scanf("%d",&array[i]);
12  if(array[0]<array[2])
13 ▾ {
14  smallest=array[0];
15  secondsmallest =array[1];
16  }
17  else
18 ▾ {
19  smallest=array[1];
20  secondsmallest=array[0];
21  }
22  for(i=2;i<size;i++)
23 ▾ {
24  if(array[i]<smallest)
25 ▾ {
26  secondsmallest=smallest;
27  smallest=array[i];
28  }
```

21:7   ⟳

Open File   ✓Custom Input   **Run**

Custom Input

```
5
3 4 5 6 7
```

Status Successfully executed   **Date** 2020-06-06 08:55:38   **Time** 0 sec   **Mem** 9.424 kB   ✖

Input
```
5
3 4 5 6 7
```

Output
```
How many elements do you want to enter:
Enter 5  elements
second smallest element is 4
```

Code, Compile & Run

Ide ✕ +

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C (gcc 6.3) ▼ 💾 🗑 Code gets autosaved every second   ❶ ⬇ ↗ ⚙

```
10   for(i=0;i<size;i++)
11   scanf("%d",&array[i]);
12   if(array[0]<array[2])
13 ▾ {
14   smallest=array[0];
15   secondsmallest =array[1];
16   }
17   else
18 ▾ {
19   smallest=array[1];
20   secondsmallest=array[0];
21   }
22   for(i=2;i<size;i++)
23 ▾ {
24   if(array[i]<smallest)
25 ▾ {
26   secondsmallest=smallest;
27   smallest=array[i];
28   }
29   else if(array[i]<secondsmallest)
30 ▾ {
31   secondsmallest=array[i];
32   }
33   }
34   printf("\nsecond smallest element is %d \n", secondsmallest);
35   return 0;
36   }
37
```

21:7   ↻

Open File   ✓ Custom Input   **Run**

Custom Input
```
5
3 4 5 6 7
```

Status Successfully executed   **Date** 2020-06-06 08:55:38   **Time** 0 sec   **Mem** 9.424 kB   ✕

Input
```
5
3 4 5 6 7
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Output
```
How many elements do you want to enter:
Enter 5  elements
second smallest element is 4
```

Priyanka. Shet
4ALI9CSO70

i) Algorithm (to find second smallest element in an array)

step1 : start

step2 : input size

step 3 : Display how many elements do you want to enter

step 4 : Display enter %d elements

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

input array [i]

step 5 : if (array [o] < array [i])

step 5.1 : Smallest = array [o]

step 5.2 : Second smallest = array [i]

step 5.3 : go to step10 & step 11

step 6 : else

smallest = array [i]

Second smallest = array [o]

goto step 10 and step 11

step 7 : for (i= 2; i<size; i++)

step 8 : if (array [i] < Smallest)

second smallest = smallest

smallest = array [i]

goto step 10 and step 11

step 9 : else if (array [i] < second smallest)

second smallest = array [i]

step 10 : Print the second smallest element

step 11 : stop.

ii) Flowchart

```
                    ( start )
                        │
                        ▼
                ┌──────────────┐
                │  input size  │
                └──────────────┘
                        │
                        ▼
                ┌──────────────────┐
                │ Print how many   │
                │ elements do you  │
                │ want to enter    │
                └──────────────────┘
                        │
                        ▼
                ┌──────────────┐
                │  Read size   │
                └──────────────┘
                        │
                        ▼
                / Enter 1 . d elements /
                        │
                        ▼
                   ┌───────┐
                   │  i = 0 │
                   └───────┘
                        │
                        ▼
         ┌──────<  i < size  >────F────┐
         │        ╲────────╱           │
         │            │ T              ▼
         │            ▼          <  array[0] ≤  >────F────┐
   ┌───────────┐  ┌──────────────┐  ╲ array[1] ╱         │
   │input array│  │              │       │ T             ▼
   └───────────┘  └──────────────┘       ▼        ┌──────────────────┐
         │            │             ┌──────────────────┐ │ Smallest = array[1] │
      ┌──────┐        │             │ Smallest = array[1]│└──────────────────┘
      │ i++  │────────┘             └──────────────────┘        │
      └──────┘                             │                    ▼
                                           ▼         ┌──────────────────────┐
                              ┌──────────────────────┐│Secondsmallest = array[0]│
                              │Secondsmallest = array[1]│└──────────────────────┘
                              └──────────────────────┘        │
                                                              ▼
                                                         ┌───────┐
                                                         │ i = 2 │
                                                         └───────┘
                                                              │
                                                              ▼
                              ┌────────────────<  i < size  >────F────┐
                              │                  ╲────────╱           │
                              │                      │ T              │
                              │                      ▼                │
                              │            <  array[i] <  >────F──┐    │
                              │            ╲  smallest  ╱         │    │
                              │                  │ T             │    │
                              ▼                  ▼               │    │
                  <  array[i] <  >────F──┐  ┌──────────────────┐ │    │
                  ╲ secondsmallest╱      │  │secondsmallest=smallest│ │    │
                        │ T             │  └──────────────────┘ │    │
                        │          ┌──────┐        │           │    │
                        │          │ i++  │        ▼           │    │
                        │          └──────┘  ┌──────────────────┐│    │
                        ▼                    │ Smallest = array[i]│◄──┘    │
              / Print the second /           └──────────────────┘        │
              / smallest element /◄──────────────────────────────────────┘
                        │
                        ▼
                   (  Stop  )
```