

youtube.com/watch?v=KEs5UyBJ39g



(1) Niharika Kaur So... Daily-Reflect - Googl... Daily UPDATE G-237 My Drive - Google Dr... Strivers A2Z-DSA Cou... Strivers A2Z DSA Cou... CSES - CSES Problem...

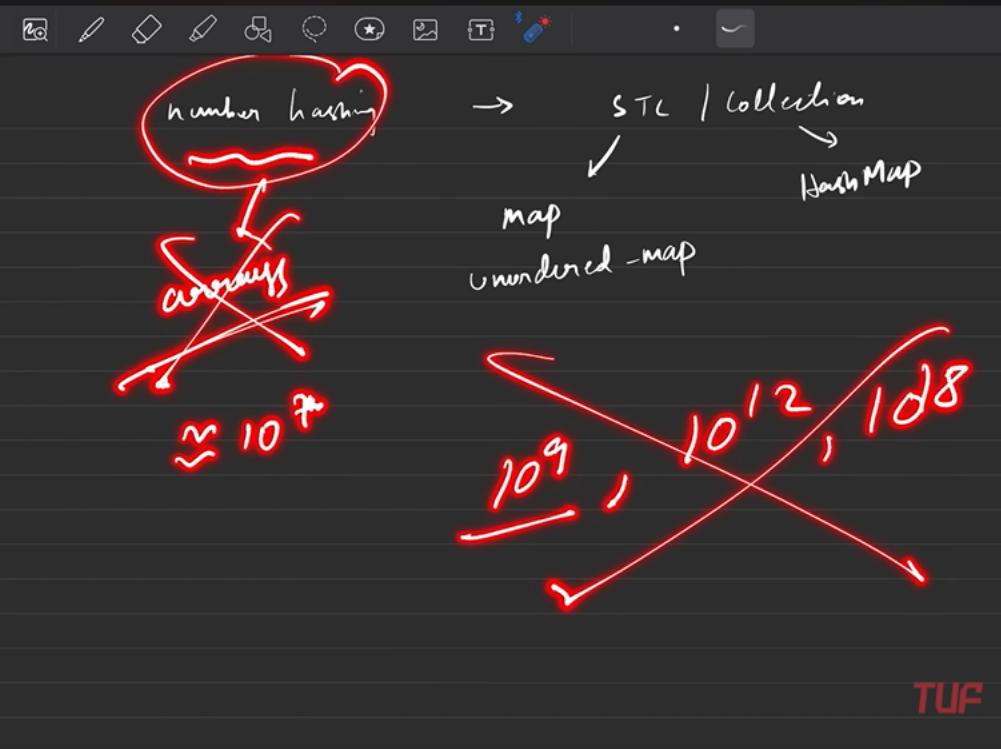
YouTube IN

Search

Search icon

Microphone icon

More icons



All From take U forward Algorithms C++ >



Become a Salesforce Developer

Salesforce economy will create roughly 1.9 million jobs in India by 2024.

Ad · Trailhead

Sign up



Sorting - Part 1 | Selection Sort, Bubble Sort, Insertion Sort ...

take U forward 13K views • 2 weeks ago



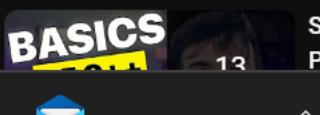
Time and Space Complexity - Strivers A2Z DSA Course

take U forward 43K views • 1 month ago



2021 Mega Mashup | DJ Ravish & DJ Ankit | Welcome 2022...

DJ Ravish 1.6M views • 1 year ago



Strivers A2Z-DSA Course | DSA Playlist | Placements

Hashing | Maps | Time Complexity | Collisions | Division Rule of Hashing | Strivers A2Z DSA Course



take U for... 313K subscribers

Join



Subscribed

1.1K



Share

Thanks



Search



ENG IN

15:25
19-02-2023

youtube.com/watch?v=KEs5UyBJ39g

Search

IN

YouTube

map

unordered-map

$n = 13 \rightarrow$ array

array = [1, 2, 3, 1, 3, 2, 12]

map < int, int >

key, value

frequency

number

(12 → 1)

{3 → 2}

{2 → 2}

{1 → 2}

All From take U forward Algorithms C++ >

Become a Salesforce Developer :

Start a new career Learn Salesforce for free

Sonali Dangore Associate Software Technology Consultant

Ad - Trailhead

Sign up

Sorting - Part 1 | Selection Sort, Bubble Sort, Insertion Sort ...

take U forward 43:44 13K views • 2 weeks ago

Time and Space Complexity - Strivers A2Z DSA Course

take U forward 43K views • 1 month ago

2021 Mega Mashup | DJ Ravish & DJ Ankit | Welcome 2022... DJ Ravish 1.6M views • 1 year ago

Basics

Strivers A2Z-DSA Course | DSA Playlist | Placements

Hashing | Maps | Time Complexity | Collisions | Division Rule of Hashing | Strivers A2Z DSA Course

take U for... 313K subscribers

Join Subscribed

1.1K

Share

Thanks

15:33

ENG IN

19-02-2023

youtube.com/watch?v=KEs5UyBJ39g

Search

Map

unordered-map

$arr = [1, 2, 3, 1, 3, 2, 12]$

$n = 13 \rightarrow$ array

map < int, int >

map { arr[i] } ++

number frequency

map { 12 } → 1

map { 3 } → 2

map { 2 } → 2

map { 1 } → 2

map { 4 } → 0

All From take U forward Algorithms C++ >

Become a Salesforce Developer :

Start a new career Learn Salesforce for free

Sonali Dangore Associate Software Technology Consultant

Ad - Trailhead

Sign up

Sorting - Part 1 | Selection Sort, Bubble Sort, Insertion Sort ...

take U forward 13K views • 2 weeks ago

Time and Space Complexity - Strivers A2Z DSA Course

take U forward 43K views • 1 month ago

2021 Mega Mashup | DJ Ravish & DJ Ankit | Welcome 2022...

DJ Ravish 1.6M views • 1 year ago

Strivers A2Z-DSA Course | DSA Playlist | Placements

Hashing | Maps | Time Complexity | Collisions | Division Rule of Hashing | Strivers A2Z DSA Course

take U for... 313K subscribers

Join Subscribed

1.1K

Share

Thanks

15:34

ENG IN

19-02-2023

youtube.com/watch?v=KEs5UyBJ39g

Search

IN

YouTube

Patterns.cpp hashing.cpp

```

1 using namespace std;
2
3 int main() {
4     int n;
5     cin >> n;
6     int arr[n];
7     for(int i = 0;i<n;i++) {
8         cin >> arr[i];
9     }
10    // pre-compute
11    map<int, int> mpp;
12    for(int i = 0;i<n;i++) {
13        mpp[arr[i]]++;
14    }
15
16    int q;
17    cin >> q;
18    while(q--) {
19        int number;
20        cin >> number;
21        // fetch
22        cout << mpp[number] << endl;
23    }
24
25    return 0;
26 }
```

input.txt

```

1 7
2 1 2 3 1 3 2 12
3 5
4 1
5 2
6 3
7 4
8 12
```

output.txt

```

1 2
2 2
3 2
4 0
5 1
6
```

TUF

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

40:21 / 1:00:05 • Problem - 1 Code by map >

Terminal will be reused by tasks, press any key to close it.

CC HD

take U forward

Subscribed

Join

1.1K

Share

Thanks

All From take U forward Algorithms C++ >

Become a Salesforce Developer

Salesforce economy will create roughly 1.9 million jobs in India by 2024.

Ad - Trailhead

Sign up

Sorting - Part 1 | Selection Sort, Bubble Sort, Insertion Sort |...

take U forward 43:44 13K views • 2 weeks ago

Time and Space Complexity - Strivers A2Z DSA Course

take U forward 35:16 43K views • 1 month ago

2021 Mega Mashup | DJ Ravish & DJ Ankit | Welcome 2022...

DJ Ravish 3:13 1.6M views • 1 year ago

Strivers A2Z-DSA Course | DSA Playlist | Placements

ENG IN

15:35

19-02-2023

Hashing | Maps | Time Complexity | Collisions | Division Rule of Hashing | Strivers A2Z DSA Course

1.1K

Share

Thanks

...

Search

IN

15:35

19-02-2023

youtube.com/watch?v=KEs5UyBJ39g

(1) Niharika Kaur So... Daily-Reflect - Googl... Daily UPDATE G-237 My Drive - Google Dr... Strivers A2Z-DSA Cou... Strivers A2Z DSA Cou... CSES - CSES Problem...

YouTube IN

Search

All From take U forward Algorithms C++ >

Become a Salesforce Developer :
Start a new career Learn Salesforce for free
Sonali Dangore Associate Software Technology Consultant
Ad - Trailhead

Sign up

Sorting - Part 1 | Selection Sort, Bubble Sort, Insertion Sort ...
take U forward 13K views • 2 weeks ago

Time and Space Complexity - Strivers A2Z DSA Course
take U forward 43K views • 1 month ago

2021 Mega Mashup | DJ Ravish & DJ Ankit | Welcome 2022...
DJ Ravish 1.6M views • 1 year ago

Strivers A2Z-DSA Course | DSA Playlist | Placements

TUF

Hashing | Maps | Time Complexity | Collisions | Division Rule of Hashing | Strivers A2Z DSA Course

take U for... 313K subscribers Join Subscribed 1.1K Share Thanks ...

Search

15:36 ENG IN 19-02-2023 1

youtube.com/watch?v=KEs5UyBJ39g

Search

IN

YouTube



```

code > hashing.cpp > main()
1 #include<iostream>
2 using namespace std;
3
4 int main() {
5     int n;
6     cin >> n;
7     int arr[n];
8     map<int, int> mpp;
9     for(int i = 0; i < n; i++) {
10         cin >> arr[i];
11         mpp[arr[i]]++;
12     }
13     // pre-compute
14
15     // iterate in the map
16     // for(auto it : mpp) {
17     //     cout << it.first << " ->" << it.second << endl;
18     // }
19
20     int q;
21     cin >> q;
22     while(q--) {
23         int number;
24         cin >> number;
25         // fetch
26         cout << mpp[number] << endl;
27     }
}

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

* Terminal will be reused by tasks, press any key to close it.

TUF

All From take U forward Algorithms C++ >

Become a Salesforce Developer

Start a new career Learn Salesforce for free

Sonali Dangore Associate Software Technology Consultant

Ad - Trailhead

Sign up

Sorting - Part 1 | Selection Sort, Bubble Sort, Insertion Sort ...

take U forward 43:44 13K views • 2 weeks ago

Time and Space Complexity - Strivers A2Z DSA Course

take U forward 35:16 43K views • 1 month ago

2021 Mega Mashup | DJ Ravish & DJ Ankit | Welcome 2022...

DJ Ravish 3:13 1.6M views • 1 year ago

Strivers A2Z-DSA Course | DSA Playlist | Placements

ENG IN 15:37 19-02-2023

Search

Share

Thanks

Join Subscribed

1.1K

...

Basics

youtube.com/watch?v=KEs5UyBJ39g

Search

All From take U forward Algorithms C++ >

Become a Salesforce Developer

Start a new career Learn Salesforce for free

Sonali Dangore Associate Software Technology Consultant

Ad · Trailhead

Sign up

Sorting - Part 1 | Selection Sort, Bubble Sort, Insertion Sort ...

take U forward 13K views • 2 weeks ago

43:44

Time and Space Complexity - Strivers A2Z DSA Course

take U forward 43K views • 1 month ago

35:16

2021 Mega Mashup | DJ Ravish & DJ Ankit | Welcome 2022...

DJ Ravish 1.6M views • 1 year ago

3:13

Strivers A2Z-DSA Course | DSA Playlist | Placements

13

Hashing | Maps | Time Complexity | Collisions | Division Rule of Hashing | Strivers A2Z DSA Course

take U for... 313K subscribers

Join Subscribed

1.1K

Share

Thanks

15:38

ENG IN

19-02-2023

1

youtube.com/watch?v=KEs5UyBJ39g

Search

All From take U forward Algorithms C++ >

Become a Salesforce Developer :
Salesforce economy will create roughly 1.9 million jobs in India by 2024.
Ad - Trailhead
Sign up

Sorting - Part 1 | Selection Sort, Bubble Sort, Insertion Sort ...
take U forward 13K views • 2 weeks ago
43:44

Time and Space Complexity - Strivers A2Z DSA Course
take U forward 43K views • 1 month ago
35:16

2021 Mega Mashup | DJ Ravish & DJ Ankit | Welcome 2022...
DJ Ravish 1.6M views • 1 year ago
3:13

Strivers A2Z-DSA Course | DSA Playlist | Placements
13

Hashing | Maps | Time Complexity | Collisions | Division Rule of Hashing | Strivers A2Z DSA Course

take U for... 313K subscribers Join Subscribed 1.1K Share Thanks ...

TUF

44:51 / 1:00:05 • Time Complexity (map), unordered_map I like this

Time Complexity → map
Storage fetching } → $(\log n)$ but average worst
Unordered-map

youtube.com/watch?v=KEs5UyBJ39g

Search

IN

YouTube

Search

Code Editor:

```
code > hashing.cpp > main()
1 #include<iostream>
2 using namespace std;
3
4 int main() {
5     int n;
6     cin >> n;
7     int arr[n];
8     unordered_map<int, int> mpp;
9     for(int i = 0;i<n;i++) {
10         cin >> arr[i];
11         mpp[arr[i]]++;
12     }
13     // pre-compute
14
15
16     // iterate in the map
17     for(auto it : mpp) {
18         cout << it.first << " -> " << it.second << endl;
19     }
20
21     int q;
22     cin >> q;
23     while(q--) {
24         int number;
25         cin >> number;
26         // fetch
27         cout << mpp[number] << endl;
28     }
}
```

Terminal:

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

* Terminal will be reused by tasks, press any key to close it.

File Browser:

- input.txt
- output.txt

input.txt content:

```
1 7
2 1 2 3 1 3 2 12
3 5
4 1
5 2
6 3
7 4
8 12
```

output.txt content:

```
1 3->2
2 12->1
3 2->2
4 1->2
5 2
6 2
7 2
8 0
9 1
```

TUF

Hashing | Maps | Time Complexity | Collisions | Division Rule of Hashing | Strivers A2Z DSA Course

take U for... 313K subscribers

Join Subscribed 1.1K

Share Thanks

All From take U forward Algorithms C++ >

Become a Salesforce Developer

Start a new career Learn Salesforce for free

Sonali Dangore Associate Software Technology Consultant

Ad - Trailhead

Sign up

Sorting - Part 1 | Selection Sort, Bubble Sort, Insertion Sort ...

take U forward 43:44 13K views • 2 weeks ago

Time and Space Complexity - Strivers A2Z DSA Course

take U forward 35:16 43K views • 1 month ago

2021 Mega Mashup | DJ Ravish & DJ Ankit | Welcome 2022...

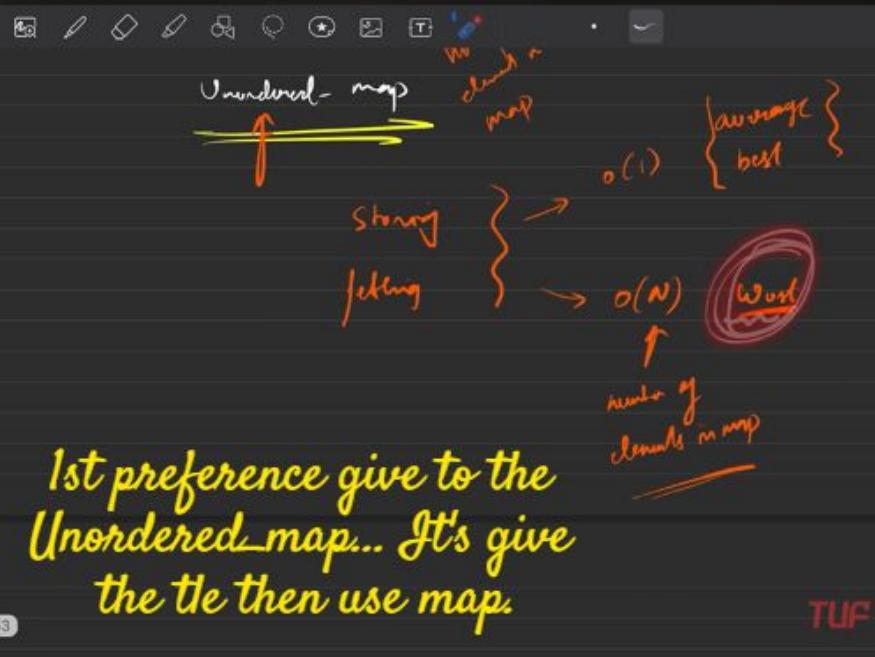
DJ Ravish 3:13 1.6M views • 1 year ago

Strivers A2Z-DSA Course | DSA Playlist | Placements

ENG IN

15:41

19-02-2023



1st preference give to the
Unordered_map... It's give
the tie then use map.

All From take U forward Algorithms C+ >



Become a Salesforce Developer :

Salesforce economy will create roughly 1.9 million jobs in India by 2024.
Ad - Trailhead

[Sign up](#)



• Selection Sort
• Bubble Sort
• Insertion Sort

Sorting - Part 1 | Selection Sort, Bubble Sort, Insertion Sort |...

take U forward 43:44
13K views • 2 weeks ago



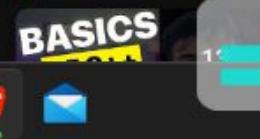
Time and Space Complexity - Strivers A2Z DSA Course

take U forward 35:16
43K views • 1 month ago



2021 Mega Mashup | DJ Ravish & DJ Ankit | Welcome 2022...

DJ Ravish 3:13
1.6M views • 1 year ago



Strivers A2Z DSA Course BASICS 15:45
Kapwing 19-02-2023

Hashing | Maps | Time Complexity | Collisions | Division Rule of Hashing | Strivers A2Z DSA Course

TUF take U for... 313K subscribers

Join



Subscribed



1.1K



Share



Thanks



Search



youtube.com/watch?v=KEs5UyBJ39g

Search

All From take U forward Algorithms C++ >

Become a Salesforce Developer

Salesforce economy will create roughly 1.9 million jobs in India by 2024.

Ad · Trailhead

Sign up

Sorting - Part 1 | Selection Sort, Bubble Sort, Insertion Sort ...

take U forward 13K views • 2 weeks ago

Time and Space Complexity - Strivers A2Z DSA Course

take U forward 43K views • 1 month ago

2021 Mega Mashup | DJ Ravish & DJ Ankit | Welcome 2022...

DJ Ravish 1.6M views • 1 year ago

Strivers A2Z-DSA Course | DSA Playlist | Placements

15:45 19-02-2023

Collisions

f

Unordered-map

strong feeling

number of elements in map

$O(1)$ average best

$O(N)$ worst

worst

TUF

Hashing → Division Method

Hashing | Maps | Time Complexity | Collisions | Division Rule of Hashing | Strivers A2Z DSA Course

take U for... 313K subscribers

Join Subscribed

1.1K

Share

Thanks

Search

ENG IN

1

youtube.com/watch?v=KEs5UyBJ39g

Search

All From take U forward Algorithms C++ >

Hashing → Division Method

) Folding Method

(.) Mid Square Method

TUF

take U for... 313K subscribers

Join Subscribed

1.1K

Share

Thanks

Hashing | Maps | Time Complexity | Collisions | Division Rule of Hashing | Strivers A2Z DSA Course

Sorting - Part 1 | Selection Sort, Bubble Sort, Insertion Sort ...
take U forward 13K views • 2 weeks ago
43:44

Time and Space Complexity - Strivers A2Z DSA Course
take U forward 43K views • 1 month ago
35:16

2021 Mega Mashup | DJ Ravish & DJ Ankit | Welcome 2022...
DJ Ravish 1.6M views • 1 year ago
3:13

Basics

ENG IN

15:45

19-02-2023

youtube.com/watch?v=KEs5UyBJ39g

Search

All From take U forward Algorithms C++ >

Become a Salesforce Developer :
Start a new career Learn Salesforce for free
Sonali Dangore Advanced Technology Consultant
Ad - Trailhead

Sign up

Sorting - Part 1 | Selection Sort, Bubble Sort, Insertion Sort ...
take U forward 13K views • 2 weeks ago

43:44

Time and Space Complexity - Strivers A2Z DSA Course
take U forward 43K views • 1 month ago

35:16

2021 Mega Mashup | DJ Ravish & DJ Ankit | Welcome 2022...
DJ Ravish 1.6M views • 1 year ago

1M+ VIEWS 2021 MEGA MASHUP 3:13

Basics

ENG IN 15:59 19-02-2023

Hashing | Maps | Time Complexity | Collisions | Division Rule of Hashing | Strivers A2Z DSA Course

take U for... 313K subscribers

Join Subscribed

1.1K

Share Thanks

TUF

Search

19-02-2023

youtube.com/watch?v=KEs5UyBJ39g

Mid Square Method

{2, 5, 16, 28, 139}

{100, 107, 10¹⁶, 10²⁸}

TUF

Hashing | Maps | Time Complexity | Collisions | Division Rule of Hashing | Strivers A2Z DSA Course

take U for... 313K subscribers

Join Subscribed 1.1K

Share Thanks

All From take U forward Algorithms C++ >

Become a Salesforce Developer

Start a new career Learn Salesforce for free

Sonali Dangore Associate Software Technology Consultant

Ad - Trailhead

Sign up

Sorting - Part 1 | Selection Sort, Bubble Sort, Insertion Sort ...

take U forward 13K views • 2 weeks ago

43:44

Time and Space Complexity - Strivers A2Z DSA Course

take U forward 43K views • 1 month ago

35:16

2021 Mega Mashup | DJ Ravish & DJ Ankit | Welcome 2022...

DJ Ravish 1.6M views • 1 year ago

3:13

Basics

Strivers A2Z-DSA Course | DSA Playlist | Placements

Search

16:00

ENG IN

19-02-2023

youtube.com/watch?v=KEs5UyBJ39g

Search

All From take U forward Algorithms C++ >

Become a Salesforce Developer :
Salesforce economy will create roughly 1.9 million jobs in India by 2024.

Ad - Trailhead

Sign up

Sorting - Part 1 | Selection Sort, Bubble Sort, Insertion Sort ...
take U forward 13K views • 2 weeks ago

Time and Space Complexity - Strivers A2Z DSA Course
take U forward 43K views • 1 month ago

2021 Mega Mashup | DJ Ravish & DJ Ankit | Welcome 2022...
DJ Ravish 1.6M views • 1 year ago

Strivers A2Z-DSA Course | DSA Playlist | Placements

Hashing | Maps | Time Complexity | Collisions | Division Rule of Hashing | Strivers A2Z DSA Course

take U for... 313K subscribers

Join Subscribed 1.1K Share Thanks ...

Search

16:03 19-02-2023

youtube.com/watch?v=KEs5UyBJ39g

Search

All From take U forward Algorithms C++ >

Become a Salesforce Developer

Salesforce economy will create roughly 1.9 million jobs in India by 2024.

Ad · Trailhead

Sign up

Sorting - Part 1 | Selection Sort, Bubble Sort, Insertion Sort ...

take U forward 13K views • 2 weeks ago

Time and Space Complexity - Strivers A2Z DSA Course

take U forward 43K views • 1 month ago

2021 Mega Mashup | DJ Ravish & DJ Ankit | Welcome 2022...

DJ Ravish 1.6M views • 1 year ago

Strivers A2Z-DSA Course | DSA Playlist | Placements

Hashing | Maps | Time Complexity | Collisions | Division Rule of Hashing | Strivers A2Z DSA Course

take U for... 313K subscribers

Join Subscribed

1.1K

Share Thanks

TUF

Folding Method

Mid Square Method

array [1..10]

{ 2, 5, 16, 28, 139, 38, 98; 28, 18 }

↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓

2 5 6 0 8 9 8 8 8

1

2 → 2

3

4

5 → 5

6 → 16

7 → 87 28 38 98

8 → 28 38 98

9 → 139

TUF

Search

ENG IN

16:05

19-02-2023

youtube.com/watch?v=KEs5UyBJ39g

The video shows a man with a beard, wearing a black hoodie, pointing at a whiteboard. On the whiteboard, there is handwritten text and arrows illustrating a sorting process. The text includes numbers like 16, 15, 9, 38, 78, 28, 18, 13, 9, 8, 6, 5, 4, 3, 2, 1, and 0. Arrows show the movement of elements, such as 16 moving down to become 13, and 18 moving down to become 13. A large orange arrow points from the unsorted state to the sorted state, which is labeled "sorted order".

Search

All From take U forward Algorithms C++ >

Become a Salesforce Developer :
Salesforce economy will create roughly 1.9 million jobs in India by 2024.

Ad · Trailhead

Sign up

Sorting - Part 1 | Selection Sort, Bubble Sort, Insertion Sort |...
take U forward 13K views • 2 weeks ago

43:44

Time and Space Complexity - Strivers A2Z DSA Course
take U forward 43K views • 1 month ago

35:16

2021 Mega Mashup | DJ Ravish & DJ Ankit | Welcome 2022...
DJ Ravish 1.6M views • 1 year ago

3:13

Strivers A2Z-DSA Course | DSA Playlist | Placements

16:07
19-02-2023

Hashing | Maps | Time Complexity | Collisions | Division Rule of Hashing | Strivers A2Z DSA Course

take U for... 313K subscribers

Join Subscribed

1.1K Thanks

Share

TUF

54:54 / 1:00:05 • Collision >

CC HD

19-02-2023

Search

ENG IN

1

youtube.com/watch?v=KEs5UyBJ39g

Search

All From take U forward Algorithms C++ >

Become a Salesforce Developer

Start a new career Learn Salesforce for free

Sonali Dangore Associate Software Technology Consultant

Ad · Trailhead

Sign up

Sorting - Part 1 | Selection Sort, Bubble Sort, Insertion Sort ...

take U forward 13K views • 2 weeks ago

Time and Space Complexity - Strivers A2Z DSA Course

take U forward 43K views • 1 month ago

2021 Mega Mashup | DJ Ravish & DJ Ankit | Welcome 2022...

DJ Ravish 1.6M views • 1 year ago

Strivers A2Z-DSA Course | DSA Playlist | Placements

16:09 19-02-2023

Hashing → **Division Method** linear probing

~~Folding Method~~

~~Mid Square Method~~

{ 2, 5, 16, 26, 139, 38, 98, 28, 18 }

↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓

2 5 6 0 8 9 8 8 8

1
2 → 2
3
4
5 → 5

TUF

Hashing | Maps | Time Complexity | Collisions | Division Rule of Hashing | Strivers A2Z DSA Course

take U for... 313K subscribers

Join **Subscribed** 1.1K **Share** **Thanks**

Search

ENG IN

youtube.com/watch?v=KEs5UyBJ39g

Search

All From take U forward Algorithms C++ >

Become a Salesforce Developer :
Start a new career Learn Salesforce for free
Sonali Dangore Associate Software Technology Consultant
Ad - Trailhead

Sign up

Sorting - Part 1 | Selection Sort, Bubble Sort, Insertion Sort ...
take U forward 13K views • 2 weeks ago

Time and Space Complexity - Strivers A2Z DSA Course
take U forward 43K views • 1 month ago

2021 Mega Mashup | DJ Ravish & DJ Ankit | Welcome 2022...
DJ Ravish 1.6M views • 1 year ago

Strivers A2Z-DSA Course | DSA Playlist | Placements

Hashing | Maps | Time Complexity | Collisions | Division Rule of Hashing | Strivers A2Z DSA Course

take U for... 313K subscribers

Join Subscribed 1.1K Share Thanks

Search

16:10 19-02-2023