

04 Apr 2023

<https://my.newtonschool.co/playground/code/hwf4rfevk96u/>

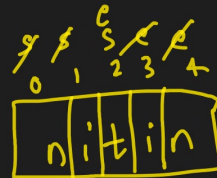
```
static boolean check_Palindrome(String str,int s, int e)
{
    // if there is only one character
    if (s==e)
        return true;

    // if the first and last characters do not match
    if ( (str.charAt(s)) != (str.charAt(e)) )
        return false;

    // if there are more than two characters, check if the middle substring
    // is also a palindrome or not
    if (s < e+1)
        return check_Palindrome(str, s+1, e-1);
    return true;
}
```

0 1 2 3 4
nitin

s 2
e 3



s = start char index

e = end char index

→ a → Palindrome
← a ← s=0, e=0

nitin : s=0, e=4
s e

0 1 2 3 4 5 6
racecar : s=0, e=6
s e

s=0 1
e=4 3

str = nitin

2 2
X 3

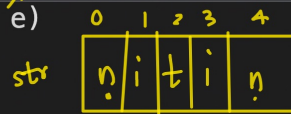
```
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    // if there are more than two characters, check if the middle substring
    // is also a palindrome or not
    if (s < e+1)
        return check_Palindrome(str, s+1, e-1);
    return true;
}
```

nitin

2 2
X 3



s=0 1

e=4 3

True
return (nitin, 1, 3) True

return (nitin, 2, 2) True

```
if (s < e+1)
    return check_Palindrome(str, s+1, e-1);
return true;
```

Newton School

my.newtonschool.co/lecture/57q6fpxnobe3/live/

REC

EVEN/ODD check
using
Recursion

num >= 0

Recursion(new)

```
def is_even(num):
    if num == 0:
        return true
    elif num == 1:
        return False
    else:
        return is_even(num-2)
```

DI

return is_even(8) T
return is_even(6) T
return is_even(4) T
return is_even(2) T
return is_even(0) T

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Screen - Dr. Darsha... (you)

Start Open Session Stop Sharing Video Off Mic On More Leave

Chat

To everyone 1

Arunangshu Mullick 6m ago
Sir jst one logic ka thora hint denge?
Recursion mai even odd
jayyse sir even odd ko print karenge
1-10 i/p....thn odd and even alag hoga
Okay sir

Rupesh Kumar just now
minus2 every time

Arunangshu Mullick just now
% operator nehi lagega thn is case mai?
pura hi bol diyee sir app
hint chahiye tha sir
Thank you sir

10 Reactions

YES 5 NO 5

Reset Counter

Message..

Searching:

1. Search engines: Google, Bing, Yahoo
2. Databases:
3. Social media: FB, Twitter
4. Online marketplaces: Amazon, eBay
5. GPS & maps:
6. Image recognition:
7. Digital libraries:

Linear search will look for 1st occurrence of 8.
& return its index.

Linear search

Array

6	3	0	5	1	2	8	-1	8
---	---	---	---	---	---	---	----	---

8

Doesn't match

Element to search: 8

NS 4 Apr 2023

$n=5$
search= 5

```
17  
18 System.out.print("Enter the number to be searched: ");  
19 search = sc.nextInt();  
20  
21 for(i=0; i<n; i++)  
22     if(arr[i] == search)  
23     {  
24         System.out.print("Element found at index "+i);  
25         break; // terminate for loop  
26     }  
27  
28 if(i==n)  
29     System.out.print(search + "element is not present in the array.");  
30  
31
```

arr

3	4	6	5	2
---	---	---	---	---

Enter the number of elements: 5
3
4
6
5
2
Enter array is:
3 4 6 5 2 Enter the number to be searched: 5
Element found at index 3

(base) ingledarshan@192 NS 4 Apr 2023 %

```
J Main.java 1 x
J Main.java > Main > main(String[])
18 System.out.print("\nEnter the number to be searched: ");
19 search = sc.nextInt();
20
21 for(i=0; i<n; i++)
22     if(arr[i] == search)
23     {
24         System.out.print("\nElement found at index "+i+"\n");
25         break;
26     }
27
28 if(i==n)
29     System.out.print(search + " element is not present in the array.");
30 }
31 }
32
```

Handwritten notes on the code editor:

- $n = 3$
- Search = 61
- $i = 3$
- arr:

3	4	2
---	---	---
- Annotations: $i=0$, $i=1$, $i=2$ with arrows pointing to the for loop.
- Annotation: 61 next to the search value.

Terminal output:

```
Enter the number of elements: 3
3
4
2
Enter array is:
3 4 2
Enter the number to be searched: 61
61 element is not present in the array.
(base) ingledarshan@192 NS 4 Apr 2023 %
```

Newton School | binary search - Google Search | 2951.1490520804.gif (600x400) | +

my.newtonschool.co/lecture/57q6fpxnobe3/live/

REC

Recursion(new)

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

$m = \frac{l+h}{2}$

$m = \frac{1+26}{2} = \frac{27}{2} = 13$

if $ch > ch(mid)$, $l = mid + 1$

if $ch < ch(mid)$, $h = mid - 1$

while ($l < h$)

DI

$m = \frac{14+26}{2} = \frac{40}{2} = 20$

$m = \frac{17+19}{2} = \frac{36}{2} = 18$

$m = \frac{14+19}{2} = 16$

Sajan

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Screen - Dr. Darsha... (you)

4 Reactions

YES 4 NO 0

Message..

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[https://www.google.com/search?](https://www.google.com/search?q=binary%20search&tbm=isch&tbs=itp:animated&hl=en&sa=X&ved=0CAQQpwVqFwoTCKDbpKHekP4CFQAAAAAdAAAAABAE&biw=1295&bih=746#imgsrc=BNoCs5oO9nBrFM)

[q=binary%20search&tbm=isch&tbs=itp:animated&hl=en&sa=X&ved=0CAQQpwVqFwoTCKDbpKHekP4CFQAAAAAdAAAAABAE&biw=1295&bih=746#imgsrc=BNoCs5oO9nBrFM](https://www.google.com/search?q=binary%20search&tbm=isch&tbs=itp:animated&hl=en&sa=X&ved=0CAQQpwVqFwoTCKDbpKHekP4CFQAAAAAdAAAAABAE&biw=1295&bih=746#imgsrc=BNoCs5oO9nBrFM)