

```
#include <iostream>
using namespace std;

int bSearch(int arr[], int low, int high, int x)
{
    if(low > high)
        return -1;

    int mid = (low + high) / 2;

    if(arr[mid] == x)
        return mid;

    else if(arr[mid] > x)
        return bSearch(arr, low, mid - 1, x);

    else
        return bSearch(arr, mid + 1, high, x);
}
```

```
int search(int arr[], int x)
{
    if(arr[0] == x) return 0;

    int i = 1;

    while(arr[i] < x)
        i = i * 2;
```

```
if(arr[i] == x) return i;
```

```
    return bSearch(arr, i / 2 + 1, i - 1, x);  
}
```

```
int main() {
```

```
    int arr[] = {1, 2, 3, 5, 5};
```

```
    int x = 4;
```

```
    cout << search(arr, x);
```

```
    return 0;  
}
```