

```

1  #include<bits/stdc++.h>
2  using namespace std;
3  //array declared globally so that we don't have to pass them
   again and again
4  long input[4]={3,2,4,1}; //taking an example array input, we
   will build a minimum range query segment tree
5  long seg[16]; //Segment tree array, its size in worst case
   might get 4*n
6  //function prototypes
7  void printarray(long [],long); //A function to print array
8  long query(long ,long ,long ,long ,long);
9  void build(long tnode,long starti,long endi) //building the
   segment tree
10 {
11     if(starti==endi) //if index is like (5,5), the value to be
        fetched is input[5], by common sense
12     {
13         seg[tnode]=input[starti];
14         return;
15     }
16     else //else build the childs and then get value
17     {
18         long mid=(starti+endi)/2; //calculate mid
19         build(tnode*2,starti,mid); //build left subtree
20         build(tnode*2+1,mid+1,endi); //build right subtree
21         if(seg[tnode*2]<seg[tnode*2+1]) //fetch values from
            children
22         {
23             seg[tnode]=seg[tnode*2];
24         }
25         else
26         {
27             seg[tnode]=seg[tnode*2+1];
28         }
29     }
30 }
31 int main()
32 {
33     build(1,0,3); //1 is start index of segtree, 0 and 3 is
        the range of input array
34     printarray(seg,16); // printing the segtree array
35     cout<<query(1,0,3,0,2); //1 start index of segtree, 0 and
        3 range of input array,0 and 2 range of query
36     return 0;
37 }
38 void printarray(long input[],long n)
39 {

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40     long i;
41
42     cout<<"-----" <
43     <endl;
44     for(i=0;i<n;i++)
45     {
46         cout<<input[i]<<" ";
47     }
48
49     cout<<endl<<"-----"
50     <endl;
51 }
52 long query(long node,long l,long r,long qs,long qe)
53 {
54     if(qs<=l && qe>=r) //if falls under query range
55     {
56         return seg[node];
57     }
58     else if(qe<l || qs>r) //if falls out of query range
59     {
60         return INT_MAX;
61     }
62     else //else
63     {
64         long mid=(l+r)/2; //take mid
65         long a=query(node*2,l,mid,qs,qe); //build two halves
66         of the tree
67         long b=query(node*2+1,mid+1,r,qs,qe);
68         if(a<b) //return the smaller value
69         {
70             return a;
71         }
72         else
73         {
74             return b;
75         }
76     }
77 }

```