8) NEXT GREATER ELEMENT

METHOD:

In this sum, we need the nearest element which is just greater than the elements on its right.
The algorithm is(Starting iteration from the last element of the vector):

1) If the stack is empty then we push the element into the stack and print -1 for that element.
2) If the stack is not empty and
   1) If the topmost element of the stack is greater than the element than we print the topmost element and push the current element into the stack
   2) If the topmost element of the stack is less than the element, then we start popping the elements from the stack till we encounter the element which is greater than the current element or till the stack is empty.
      If the stack becomes empty then we print -1 for that element and push the current element into the stack.
      Else we print the topmost element and push the current element into the stack

CODE OF THE PROGRAM:

```
class Solution
{
   public:
   //Function to find the next greater element for each element of the array.
   vector<long long> nextLargerElement(vector<long long> arr, int n){
      stack<long long int> s;
      vector<long long int> answer;
      for(int i=n-1;i>=0;i--){
         if(s.size()==0){
            s.push(arr[i]);
            answer.push_back(-1);
         }
         else if(s.top()>arr[i]){
            answer.push_back(s.top());
            s.push(arr[i]);
         }
         else{
            while(s.size()!=0 && s.top()<arr[i]){
               s.pop();
            }
            if(s.size()==0){
               answer.push_back(-1);
               s.push(arr[i]);
            }
            else{
               answer.push_back(s.top());
               s.push(arr[i]);
            }
         }
      }
      reverse(answer.begin(),answer.end());
```

```
        return answer;
    }
};
```