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COURSE NAME:DECODE DSA WITH C++
BATCH:DECODE 2.0
MODULE NAME:STACK PART 2
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QUESTION1

1. Valid Parentheses [Leetcode - 20]

Answer:

```
class Solution {
public:
 bool isValid(string s) {
 if(s.size()%2) return false;
 stack<char> open,close;
 for(int i=0; i<s.size(); i++){


 if(s[i] == '(' || s[i]== '{' || s[i]=='[') open.push(s[i]);

 if( !open.empty() &&
 (
 (s[i] == ')' && open.top()=='(') ||
 (s[i] == '}' && open.top()=='{') ||
 (s[i] == ']' && open.top()=='[')
 )
 ) close.push(s[i]),open.pop();

 }
 if(close.size()*2 == s.size()) return true;
 return false;
 }
```

Question:2

2. Next Greater Node in Linked List [Leetcode - 1019]

Answer:

```
vector<int> nextLargerNodes(ListNode* head) {
 stack<ListNode*> st;
 ListNode* temp=head;
 while(temp!=NULL){
 while(!st.empty() && (st.top())->val<temp->val){
 ListNode* help=st.top();
 st.pop();
 help->val=temp->val;
 }
 st.push(temp);
 temp=temp->next;
 }
 while(!st.empty()){
 ListNode* help=st.top();
 st.pop();
 help->val=0;
 }
 vector<int> ans;
 while(head!=NULL){
 ans.push_back(head->val);
 head=head->next;
 }
 return ans;
 }
```

Question:3

3. Final Prices with a Special Discount in a Shop **[Leetcode - 1475]**

Answer:

```
class Solution {
public:
 vector<int> finalPrices(vector<int>& prices) {
 int n=prices.size();
```

```
 stack<int>st;
 vector<int>ans(n);
 for(int i=n-1;i>=0;i--){
 while(!st.empty() and prices[st.top()]>prices[i]){
 st.pop();
 }if(st.empty()){
 ans[i]=prices[i];
 }else{
 ans[i]=prices[i]-prices[st.top()];
 }st.push(i);
 }return ans;
 }
};
```

Question:4

4. Next Greater Element II [Leetcode - 503]

Answer:

```
class Solution {
public:
 vector<int> nextGreaterElements(vector<int>& nums) {
 int n = nums.size();
 vector<int> a(2*n);
 for(int i=0;i<2*n;i++){
 a[i] = nums[i % n];
 }
 stack<int> s;
 vector<int> ans(2*n);
 for(int i=2*n-1;i>=0;i--){
 while(s.size() && s.top() <= a[i]){
 s.pop();
 }
 if(s.size() && s.top() > a[i]){
 ans[i] = s.top();
 }else ans[i] = -1;
 s.push(a[i]);
 }

 for(int i=0;i<n;i++){
 nums[i] = ans[i];
```

```
}
```