PSDS

Q1

Design a stack that supports push, pop, top, and retrieving the minimum element in constant time.

Implement the MinStack class:

MinStack() initializes the stack object.
void push(int val) pushes the element val onto the stack.
void pop() removes the element on the top of the stack.
int top() gets the top element of the stack.
int getMin() retrieves the minimum element in the stack.
You must implement a solution with O(1) time complexity for each function.

Example 1:

Input
["MinStack","push","push","push","getMin","pop","top","getMin"]
[[],[-2],[0],[-3],[],[],[],[]]

Output
[null,null,null,null,-3,null,0,-2]

Explanation
MinStack minStack = new MinStack();
minStack.push(-2);
minStack.push(0);
minStack.push(-3);
minStack.getMin(); // return -3
minStack.pop();
minStack.top();   // return 0
minStack.getMin(); // return -2

Q2:

Given an integer array nums and an integer k, return the kth largest element in the array.
Note that it is the kth largest element in the sorted order, not the kth distinct element.

Example 1:
Input: nums = [3,2,1,5,6,4], k = 2

Output: 5

Example 2:
Input: nums = [3,2,3,1,2,4,5,5,6], k = 4
Output: 4

Q3:

Given an array nums with n objects colored red, white, or blue, sort them in-place so that objects of the same color are adjacent, with the colors in the order red, white, and blue.

We will use the integers 0, 1, and 2 to represent the color red, white, and blue, respectively.

You must solve this problem without using the library's sort function.

Example 1:
Input: nums = [2,0,2,1,1,0]
Output: [0,0,1,1,2,2]

Example 2:
Input: nums = [2,0,1]
Output: [0,1,2]

0,0,2,1,1,2

Q4:

Given, an array of size n. Find an element that divides the array into two sub-arrays with equal sums.
Input: 2 3 4 1 4 5
Output: 1
Explanation: If 1 is the partition,
Subarrays are : {2, 3, 4} and {4, 5}

SQL

Q1:

Location (id, location_id, street_address, city, state_province, country_id)

Country (id, country_id, country_name)

1) Give all the cities for a given country_id

2) Give all the cities, country_name for a given country_id (5)

3) Give the distinct cities for a given country_name. (India)

Q2:

From the following tables write a SQL query to find the salesperson and customer who reside in the same city. Return Salesman, cust_name and city.

Sample table: salesman

salesman_id	name	city	commission
5001	James Hoog	New York	0.15
5002	Nail Knite	Paris	0.13
5005	Pit Alex	London	0.11
5006	Mc Lyon	Paris	0.14
5007	Paul Adam	Rome	0.13
5003	Lauson Hen	San Jose	0.12

customer_id	cust_name	city	grade	salesman_id
3002	Nick Rimando	New York	100	5001
3007	Brad Davis	New York	200	5001
3005	Graham Zusi	California	200	5002
3008	Julian Green	London	300	5002
3004	Fabian Johnson	Paris	300	5006
3009	Geoff Cameron	Berlin	100	5003
3003	Jozy Altidor	Moscow	200	5007
3001	Brad Guzan	London		5005

“CAN ASK MULTIPLE QUESTION FROM THIS”

Order table - O1, Date, Price, Userid
Item - I1, O1, Date, itemPrice, quantity
Units - U1, I1, unit price

Print the order_id for a given list of units