

## Q1. SQL Technique Question

**Problem: We have 2 tables available below -**

Table A: This is a transaction table containing details of transactions from 2018 to 2021.

transaction_id	seller_id	buyer_id	item_id	quantity	item_price	payment_success_yn	Transaction_date ( in dd/mm/yyyy) format
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**Note:** *payment\_success\_yn* is a Yes / No flag to tell whether this transaction is successful with payment cleared.

Table B: This is a lookup table telling which country the seller is from.

seller_id	country_name
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**Note:** *The list of sellers in table A is a subset of Table B.*

1. Using the below two tables, write two queries to answer the following-
  - 1.1. What is the weekly revenue for 2020?
  - 1.2. What is the highest actual revenue for each country? (The final result of your query has to show a record for each country and the record must have all details (i.e. all fields in Table A below) of the transaction)

## Q2. Diagnose a national education system

### Description of situation

Country X is a country located in Africa with a population of 20 million. The government of X wants to achieve major improvements in both the quantity and quality of education for its children. The country's free-market economy is still developing, having emerged from many decades under communism. Recently, the government of X put in place a new economic plan, with aspirations to transform its economy and "turbocharge" its development so that it is well positioned to compete with its African neighbors. The government of X realizes that the education of its children is a critical factor in meeting its economic development goals. It intends to transform its school system over the next 10 years so that it is able to support its economic aspirations.

Schooling in country X is completely public, and is provided by a network of government run schools which admit children from ages 5 through 18.

The first stage of this effort is to diagnose the current state of education in schools to determine how best to meet the government's future aspirations.

### QUESTION 1

What are the issues you would want to investigate in diagnosing the condition of the current school system in X?

### QUESTION 2

The table below shows some important education-related measures for country X, and also for some comparison countries. Three sets of comparison countries have been used. In the first set are some of X's neighboring countries in Africa. In the second set are some of the most developed economies in Africa. Finally, in the third set are some countries that have similar sized economies to country X on a per person basis (similar GDP per capita).

What can you observe from this chart?

	Students per School	Students per Teacher	Government Spending on Education per Student (\$)	Average International- Assessment Score
Country X	500	18	5,000	41
Close Neighbors				
Neighbor A	400	16	3,000	38
Neighbor B	700	20	4,000	43
Neighbor C	800	20	5,500	48
Developed African Countries				
Developed A	500	21	8,000	54
Developed B	350	23	8,500	55
Developed C	400	20	9,000	53

Similar African Countries				
Similar A	600	22	3,500	45
Similar B	500	20	4,000	44
Similar C	300	19	4,500	46

**Q3.** What key metrics would you propose to monitor how well B-Stock is doing? What, according to you, are the north star metrics for our company?