**Final Project/Exam**

**Must be received on/before the due date Dec 14th 2022 by 8:00 pm.**

**It is common to complete this within 2 hours, be sure to double-check your work**.

**Start time: \_8:09 pm\_\_\_\_\_\_ \_\_\_** Max 2 hour limit

**The Setup**:

1. Type your First and Last Name**: \_\_\_\_ Alec Gautreaux \_\_\_\_**
2. **CSIS #143,**
3. The last 4 numbers of your student Id. 8976 \_\_\_\_\_\_

General Information

1. Numbers (#1-10) later you will write your SQL commands under each number.
2. Some commands you can do from memory (in about 3-5 mins), while others you might want to research and/or Run and Test your commands (this might take 10-15 mins). [MySQL :: MySQL Community Edition](https://www.mysql.com/products/community/)
3. Always save your file from time-to-time.
4. When finished upload the Word doc back to the Project link

**Scenario**:

In an average employment environment your supervisor/director will ask your team to work on and complete parts of a team project.

Your team has received these instructions and has divided up the work.

Since you have a background in SQL you will be assisting your team on their project(s).

It’s your job to complete these SQL tasks with the best coding to be successful.

**Let’s get started!**

Perform each Task - see all 10 questions on all pages.

## #1 Task

Getting started: Your team has said we need to create a Table, let us call it

**Customers** that stores, *Customer\_ID, Fname, Lname*, and *address* information, and the *customer ID* the *primary key* for the data table.

Notes: The teams says let’s use Varchar (25 & 35) for the Customer Names, Address (50), City (25), State (2), Zip code (10). Also, the ***Customer Id*** field must have a number, thus **not null** and be the **PK**.

Write your code in your Word Doc under **Task #1**…….

CREATE TABLE Customers(

Customer\_ID NOT NULL PRIMARY KEY,

Fname Varchar(25),

Lname Varchar(35),

Address char (50),

City char(25),

State char (2),

Zip code char (10));

**#2 Task (Part 1 of 2)**

The company has a table called ***BOXES*** to store data about various sizes of cardboard boxes that your organization sells. Its columns are PRODUCT\_ID, NAME, DESCRIPTION, HEIGHT\_IN, WIDTH\_IN, and DEPTH\_IN.

There is no need to create the table you are only editing the table.

**Write a SQL command to remove any rows describing boxes with a height of 24 inches from the table**.

Note: Because of shipping constraints boxes (only) at 24 inches (or above) need to be deleted from this table.

Write your code in your Word Doc under **Task #2**…….

DELETE FROM BOXES WHERE HEIGHT\_IN(24);

### #2 Task (part 2 of 2):

## ****Think about Advantages of Indexes in SQL****

**What are the advantages of using Indexes in SQL?**

*(Note: This is one of the most frequently asked interview questions about SQL)*

*The adavntages of using indexes in SQL is that there always going be reduanncy avaible, your able to up load database into could for easy and safe storage and can be able accessed across entire network as need by any individual. It also has the ability to grow a data base big as need to be because being virtual data base there is no limit on how big it can be. This allow to manage data easier by being able to search specific terms as need with the data base.*

**What are the common benefits/advantages of using an Indexes in SQL?**

**Safety and Security, Audit compliance, Environmentally friendly, Time saving, Reducing storage spaces and cost of psychail storage like file cabinets etc.**

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| --- | --- | --- | --- |
| **#3 Task**  Henry (another programmer) uses a large database to generate reports and would like to make report delivery *more efficient (and faster*). You remember reading information about the SQL Indexes which will be valuable (p.374) and helpful for Henry. These reports derive from these two tables.  ​  ***CANDY*** (table), with these columns: PROD\_ID, NAME, UNITS\_SOLD\_LAST\_30DAYS and  ***EMPLOYEE*** (table), with these columns: EMP\_ID, FIRST\_NAME, LAST\_NAME, OFFICE\_PHONE  ​  **Only Write SQL commands** to improve the efficiency (and faster) of creating these two reports:   * **Employee** records **alphabetized** by **last name**, then **first name** * Names of the **candy** products listed by **units\_sold\_last\_30days**, in **descending** order   Note: Since you don’t have access to Henry’s DB files, there is no need to run the commands. Henry only wants to know those commands so he can do it himself.  Therefore, you want to supply those correct SQL commands to him.  CREATE INDEX EMPLOYEE ON LAST\_NAME (LAST NAME ASC), FIRST\_NAME (FIRST NAME ASC);  CREATE INDEX CANDY ON units\_sold\_last 30days( units sold last 30days DESC);   |  |  | | --- | --- | |  |  |   **#4 Task**  Based on the ***departments*** table below, rename the *departments* table to ***depts***.  Note: the team says the departments table name is to long let’s shorten it to **depts**. This table has already been created, thus don’t edit what is seen below – just *rename* it.  CREATE TABLE **Departments**  ( department\_id int NOT NULL,  department\_name char(50) NOT NULL,  CONSTRAINT departments\_pk PRIMARY KEY (department\_id) );  RENAME TABLE Depratments TO depts; #5 Task The team says let’s make an ***E*mployees** Table with ***employee\_number, employee\_name, department\_id***,  Note: The Table should have employee-number int as NOT NULL and PK, employee\_name defined as char(50) and NOT NULL, department\_ID (int).  CREATE TABLE Employees(  employee\_number NOT NULL PRIMARY KEY,  employee\_name char(50) NOT NULL,  department\_ID (int)); #6 Task:There is a strong need to add a column (in the E*mployees* table).Let’s call this new column salary an ‘int’ datatype. Write your code below……. ALTER TABLE employeesAdd salary (int)AFTER department\_ID (int);#7 Task: You are examining the previously created ***Customers*** table (see below)  Based on what you see in the customers table, below.  You and your team has decided to **add** two more important columns - one column called **contact\_name** a char(50) datatype and another column called **last\_contacted** which is a **date datatype**.  CREATE TABLE Customers  ( customer\_id int NOT NULL,  customer\_name char(50) NOT NULL,  address char(50),  city char(50),  state char(25),  zip\_code char(10),  CONSTRAINT customers\_pk PRIMARY KEY (customer\_id) );    Assume this table already exit created. You want to just **add the two new columns/fields, with their datatype…**  Write your code under **Task #7**……. ALTER TABLE CustomersADD contact\_name char(50)AFTER customer\_name char(50) NOT NULL,ADD last\_contacted dateAFTER zip\_code char(10);#8 Task: You have learned through experience that 15 characters spacing in the *employee\_name* field is not long enough, and many (hyphenated) names are being truncated.  Based on what is seen in the **employees** table below, change the employee\_name column to a varchar(**55**) datatype. (This edit will be helpful for the team)  TABLE employees (is seen like this)  ( employee\_number int NOT NULL,  employee\_name char(15) NOT NULL, (Note: to short)  department\_id int,  CONSTRAINT employees\_pk PRIMARY KEY (employee\_number));  Note: Assume this table has been previous made. W**rite the new commands to alter/modify the Table**  Write your code under **Task #8**…….  **ALTER TABLE employees**  **MODIFY emplolyee\_name varchar(55) NOT NULL;** #9 Task Based on the customers table below, change the **customer\_name** column to NOT allow null values and change the **state** column to a char(2) datatype.  CREATE TABLE Customers  ( customer\_id int NOT NULL,  customer\_name char(50), (update to Not Null)  address char(50),  city char(50),  state char(25), (update to 2)  zip\_code char(10),  CONSTRAINT customers\_pk PRIMARY KEY (customer\_id));  Write your code under **Task #9**……. Alter Table [Customers] Alter Column [customer\_name char(50)] Type NOT NULLAlter Table Customers.Alter Column state char(2);#10 Task: Based on the **employees** table below, it needs to be updated with current information. The team has said - drop the **salary column**, then add the ***Commission\_Pay*** **Decimal (7,2).**  CREATE TABLE employees  ( employee\_number int NOT NULL,  employee\_name char(50) NOT NULL,  department\_id int,  salary int, (update by drop)  CONSTRAINT employees\_pk PRIMARY KEY (employee\_number));  Add the ***Commission\_Pay,*** **Decimal (7,2) (datatype)**  Write your code under **Task #10**…….  ALTER TABLE employees  DROP COLUMN salary int;  ALTER TABLE employees  ADD COLUMN Comission\_Pay, Decimal (7,2);  You will notice you have time remaining – it is time to do a final desk check before you upload your work.  Worth 100 points.  **End time: \_10:07 pm\_\_\_\_\_\_** Max 2 hour limit  **Save you work and upload this file to the Assignments link – see Final Project link** |  |