Graded Quiz: Basic SQL

Your grade: 100%

Your latest: **100%** • Your highest: **100%** • To pass you need at least 70%. We keep your highest score.

Next item →

1. Assume an INSTRUCTOR table exists with columns including FIRSTNAME, LASTNAME, and others. What would be the most likely result set for the query: **1 / 1 point**

SELECT DISTINCT FIRSTNAME FROM INSTRUCTOR

- (●) LEON
PAUL
JOE
- ( ) LEON
PAUL
LEON
JOE
- ( ) LEON KATSNELSON
PAUL ZIKOPOLOUS
JOE SANTARCANGELO
- ( ) LEON
LEON
PAUL
PAUL

✓ **Correct**

2. UPDATE **INSTRUCTOR** SET **LASTNAME** = 'Brewster' WHERE **LASTNAME** = 'Smith' **1 / 1 point**

- ( ) Changes the last name of the instructor named 'Brewster' to 'Smith.'
- ( ) Updates all rows in the table to have the last name 'Smith.'
- (●) Changes the last name of all instructors named 'Smith' to 'Brewster.'
- ( ) Updates all rows in the table to have the last name 'Brewster.'

✓ **Correct**
Correct! This statement updates the last name of all instructors named 'Smith' to 'Brewster.'

3. What would occur if you executed a DELETE FROM statement on a table without the WHERE clause? **1 / 1 point**

- ( ) The command would only delete the first entry in the table.
- (●) The command would remove all entries in the table, leaving it empty but still present in the database.
- ( ) The command would result in an error.
- ( ) The command would delete the table from the database.

✓ **Correct**
Correct! Without the WHERE clause, the DELETE statement removes all entries from a table, leaving it empty in the database.

4. What is the expected result of the following SQL statement? 1 / 1 point

SELECT COUNT(DISTINCT FIRSTNAME) FROM INSTRUCTOR

- ○ The count of unique entries along with the distinct FIRSTNAME entries.
- ○ The statement would throw an error.
- ◉ The number of unique FIRSTNAME entries in the INSTRUCTOR table.
- ○ Only the distinct FIRSTNAME entries.

Correct
Correct! The DISTINCT keyword identifies unique entries, and COUNT returns the number of these distinct entries.

5. Considering the execution of the following SQL statement, what would be the expected output? 1 / 1 point

SELECT * FROM INSTRUCTOR WHERE LASTNAME='Smith' LIMIT 5

- ○ The first 5 rows from the INSTRUCTOR table.
- ○ The last 5 rows from the INSTRUCTOR table.
- ○ The last 5 entries in the INSTRUCTOR table where LASTNAME is 'Smith.'
- ◉ The first 5 entries in the INSTRUCTOR table where LASTNAME is 'Smith.'

Correct
Correct! The WHERE clause filters the results based on the LASTNAME, and the LIMIT clause restricts the output to the first 5 rows.

GRADED QUIZ : **Relational DB Concepts and Tables**

Your grade: 100%

Your latest: **100%** • Your highest: **100%** • To pass you need at least 70%. We keep your highest score.

Next item →

1. Which of the following statements about a database is/are correct? 1 / 1 point

- (●) A database is a logically coherent collection of data with some inherent meaning
- ( ) Data can only be added and queried from a database but not modified.
- ( ) Only SQL can be used to query data in a database.
- ( ) All of the above

Correct
Correct! A database is a repository or logically coherent collection of data with some inherent meaning

2. Attributes of an entity become _____ in a table. 1 / 1 point

- (●) columns
- ( ) rows
- ( ) constraints
- ( ) keys

Correct
Correct! Attributes of an entity become columns in a table.

3. The CREATE TABLE statement is a _____. 1 / 1 point

- ( ) DML statement
- (●) DDL statement
- ( ) DQL statement
- ( ) All of the above

Correct
Correct! The CREATE TABLE statement defines a table, so it is a DDL statement.

4. Which command is used for removing a table and all its data from the database? 1 / 1 point

- ( ) CREATE command
- ( ) ALTER table command
- (●) DROP table command
- ( ) TRUNCATE table command

Correct
Correct! Drop command deletes the entire table along with its contents from the database.

5. What would be the correct syntax to add a column 'ID' that contains 7 character alpha-numeric values to a database table 'Employees' using MySQL? 1 / 1 point

- ALTER TABLE COLUMN Employees ID char(7)
- (•) ALTER TABLE Employees ADD ID char(7)
- ALTER Employees ADD COLUMN ID varchar(7)
- ALTER Employees TABLE ADD ID char

Correct
Correct! This is the appropriate syntax for the said task

Graded Quiz: Refining Your Results

Your grade: 75%

Your latest: **75%** • Your highest: **75%** • To pass you need at least 70%. We keep your highest score.

Next item →

1. You want to select the author's lastname from a table, but you only remember that it starts with the letter J. Which of the following queries uses the correct string pattern? **1 / 1 point**

- (●) SELECT lastname from author where lastname like 'J%'
- ( ) SELECT lastname from author where lastname like 'J$'
- ( ) SELECT lastname from author where lastname like 'J*'
- ( ) SELECT lastname from author where lastname like 'J#'

Correct
Correct. You can use the % sign as a wildcard to indicate missing characters.

2. In SQL, which of the following will be the correct way to sort a result set in descending order? **1 / 1 point**

- ( ) SELECT ID FROM TABLE_NAME ORDER BY ID
- (●) SELECT * FROM TABLE_NAME ORDER BY ID DESC
- ( ) SELECT ID FROM TABLE_NAME ORDER BY ID DESC
- ( ) SELECT * FROM TABLE_NAME ORDER BY ID

Correct
Correct. DESC makes sure that the sorting is done in descending order.

3. What is the role of HAVING clause in SQL queries in MySQL? **0.75 / 1**

- [x] Restricts the result set for a query using GROUP BY clause.

Correct
Correct. Having clause is used in conjunction with GROUP BY statements to filter the result set.

- [ ] Check whether data records meet the specified condition is met or not.
- [ ] It may not necessarily organize the result set in a specific order.
- [ ] Acts as an alternative to WHERE clause in SQL queries.

You didn't select all the correct answers

4. Which of the choices best describe the function of the following SQL query? **1 / 1**

SELECT * FROM employees ORDER BY emp_name LIMIT 5;

- (●) Retrieves all the columns of the top 5 rows of the table, sorted alphabetically based on emp_names
- ( ) Retrieves the entire contents of the table, sorted alphabetically based on emp_names
- ( ) Retrieves the top 5 emp_names ordered alphabetically.
- ( ) Retrieves all the columns of the top 5 rows of the table, sorted reverse alphabetically based on emp_names

Correct
Correct! Using ORDER BY for text data, sort the information alphabetically.

5. Which of the following SQL statements lists the number of customers in each country, showing only the countries with more than five customers? **0 / 1 point**

- ○ SELECT COUNT(CustomerID), Country FROM Customers GROUP BY Country HAVING COUNT(CustomerID) < 5;
- ◉ SELECT COUNT(CustomerID), Country FROM Customers GROUP BY Country HAVING COUNT(Customers) > 5;
- ○ SELECT COUNT(CustomerID), Country FROM Customers GROUP BY Country HAVING COUNT(CustomerID) > 5;
- ○ SELECT COUNT(CustomerID), Country FROM Customers GROUP BY Country HAVING CustomerID > 5;

⊗ **Incorrect**
Incorrect! Please refer to videos on GROUP BY and COUNT.

Graded Quiz: Functions, Multiple Tables, and Sub-queries

Your grade: 100%

Your latest: **100%** • Your highest: **100%** • To pass you need at least 70%. We keep your highest score.

Next item →

1. Which of the following queries will return the data for employees who belong to the department with the highest value of department ID. — 1 / 1 point

- (●) SELECT * FROM EMPLOYEES WHERE DEP_ID = (SELECT MAX(DEPT_ID_DEP) FROM DEPARTMENTS)
- ( ) SELECT * FROM EMPLOYEES WHERE DEPT_ID_DEP = MAX (SELECT DEPT_ID_DEP FROM DEPARTMENTS)
- ( ) SELECT * FROM EMPLOYEES WHERE DEP_ID = (SELECT DEPT_ID_DEP FROM DEPARTMENTS WHERE DEPT_ID_DEP IS MAX)
- ( ) SELECT * FROM EMPLOYEES WHERE DEP_ID = MAX(DEP_ID)

Correct
Correct. This uses subqueries and functions.

2. A DEPARTMENTS table contains DEP_NAME, and DEPT_ID_DEP columns and an EMPLOYEES table contains columns called F_NAME and DEP_ID. We want to retrieve the Department Name for each Employee. Which of the following queries will correctly accomplish this? — 1 / 1 point

- (●) SELECT F_NAME, DEP_NAME FROM EMPLOYEES, DEPARTMENTS WHERE DEPT_ID_DEP = DEP_ID
- ( ) SELECT E.F_NAME, D.DEP_NAME FROM EMPLOYEES, DEPARTMENTS
- ( ) SELECT D.F_NAME, E.DEP_NAME FROM EMPLOYEES E, DEPARTMENTS D WHERE D.DEPT_ID_DEP = E.DEP_ID
- ( ) SELECT F_NAME, DEP_NAME FROM EMPLOYEES E, DEPARTMENTS D WHERE E.DEPT_ID_DEP = D.DEP_ID

Correct
Correct! This is a correct way to use multiple tables using an implicit join.

3. You are writing a query that will give you the total cost to the Pet Rescue organization of rescuing animals. The cost of each rescue is stored in the Cost column. You want the result column to be called "Total_Cost". Which of the following SQL queries is correct? — 1 / 1 point

- ( ) SELECT SUM(Cost) FROM PetRescue
- (●) SELECT SUM(Cost) AS Total_Cost FROM PetRescue
- ( ) SELECT SUM(Total_Cost) From PetRescue
- ( ) SELECT Total_Cost FROM PetRescue

Correct
Correct. The SUM(Cost) function will give the total cost, and the AS Total_Cost clause will give the result column an alias of Total_Cost.

4. Which of the following is the correct syntax for calculating an employee's age, in YYYY-MM-DD format, with respect to the current date, in MySQL? Assume the date of birth is available as a column 'DOB' in the table named 'Employees'. 1 / 1 point

- ○ SELECT (CURRENT_DATE – DOB) FROM Employees
- ○ SELECT DATEDIFF(CURRENT_DATE, DOB) FROM Employees
- ◉ SELECT FROM_DAYS(DATEDIFF(CURRENT_DATE, DOB)) FROM Employees
- ○ SELECT FROM_DAYS(DATE_SUB(CURRENT_DATE, DOB) FROM Employees

Correct
Correct. FROM_DAYS will convert the number of days of difference to age in YYYY-MM-DD.

5. You have a record of a set of medicines called 'MEDS'. Their date of expiry is exactly 1 year after their date of manufacturing. The name of the medicines is available as 'NAME' and their date of manufacturing is available as a column 'DOM'. Which of the commands will generate an output that contains name of the medicines and also displays their date of expiry as a column 'DOE'? Assume use of MySQL. 1 / 1 point

- ◉ SELECT NAME, DATE_ADD(DOM, INTERVAL 1 YEAR) AS DOE FROM MEDS
- ○ SELECT NAME, DATEADD(DOM, INTERVAL 1 YEAR) FROM MEDS
- ○ SELECT NAME, DATE_ADD(DOM, INTERVAL 1 YEARS) AS DOE FROM MEDS
- ○ SELECT NAME, DATEADD(DOM, INTERVAL 1 YEAR) AS DOE FROM MEDS

Correct
Correct. Use DATE_ADD for adding 1 year and represent at DOE.

Graded Quiz: Accessing databases using Python

Your grade: 100%

Your latest: **100%** • Your highest: **100%** • To pass you need at least 70%. We keep your highest score.

Next item →

1. Which of the following statements establishes the connection between a Jupyter Notebook SQL extension and an SQLite database 'EMP.db'? **1 / 1 point**

- (●) %sql sqlite:///EMP.db
- ( ) %sql
- ( ) sqlite:///EMP.db
- ( ) %sql sqlite:/EMP.db
- ( ) %sql sqlite3://EMP.db

Correct
Correct! This is the proper approach to establish the required connection.

2. Which two of the following can be stated as uses of cell magic in Jupyter Notebooks? **1 / 1 point**

- [x] Coding in Jupyter notebook using a programming language other than Python

Correct
Partially correct. There are more options that are correct.

- [ ] Converting Jupyter notebook's default programming language to a desired one.
- [x] Timing a complete cell block as per requirement.

Correct
Partially correct. There are more options that are correct.

- [ ] Load an SQL database to a jupyter notebook

3. What would be the outcome of the following python code **1 / 1 point**

```
import sqlite3

import pandas as pd

conn = sqlite3.connect('HR.db')

data = pd.read_csv('./employees.csv')

data.to_sql('Employees', conn)
```

- (●) The csv file is read and converted into an SQL table 'Employees' under the HR database
- ( ) The CSV file is converted to an SQL file
- ( ) The code throws a syntax error message.
- ( ) CSV file is saved to the HR.db file created by the code.

Correct
Correct. Data from the csv file is saved to an SQL table.

4. What would be the correct way to query a database table using python? Assume that output in any form is acceptable. Choose the 2 correct options. 1 / 1 point

- [x] out = pandas.read_sql(query_statement, connection_object)

Correct
Partially correct. There are more options that are correct.

- [ ] out = dataframe.read_sql(query_statement, connection_object)
- [x] cursor = connection.execute(query_statement)

  out = cursor.fetchall()

Correct
Partially correct. There are more options that are correct.

- [ ] out = connection.execute(query_statement)

5. Which of the following statements would you use to perform a statistical analysis of data in a pandas dataframe 'df'? 1 / 1 point

- (•) df.describe()
- ( ) df.head()
- ( ) df.tail()
- ( ) df.info()

Correct

Graded Quiz on Assignment

Your grade: 90%

Your latest: **90%** • Your highest: **90%** • To pass you need at least 70%. We keep your highest score.

Next item →

1. What is the total number of crimes recorded in the CRIME table? **1 / 1 point**

- (•) 533
- ( ) 433
- ( ) 555
- ( ) 53

Correct
Correct!

2. Which of the following is the correct query to list community areas (name and number) with per capita income less than 11000? **1 / 1 point**

- (•) SELECT COMMUNITY_AREA_NUMBER, COMMUNITY_AREA_NAME FROM CENSUS_DATA WHERE PER_CAPITA_INCOME<11000
- ( ) SELECT COMMUNITY AREA NUMBER, COMMUNITY_AREA_NAME FROM CENSUS_DATA WHERE PER_CAPITA_INCOME<11000
- ( ) SELECT COMMUNITY_AREA_NUMBER, COMMUNITY_AREA_NAME FROM CENSUS_DATA WHERE PER_CAPITA_INCOME>11000
- ( ) SELECT COMMUNITY_AREA_NUMBER, COMMUNITY_AREA_NAME WHERE CENSUS_DATA FROM PER_CAPITA_INCOME<11000

Correct

3. When you list all case numbers for crimes involving a minor, how many rows of data are retrieved? **1 / 1 point**

- (•) 2
- ( ) 3
- ( ) 4
- ( ) 1

Correct
Correct!

4. Which of the following can be used as a query for identifying all kidnapping crimes involving a child? **1 / 1 point**

- ( ) SELECT * FROM CHICAGO_CRIME_DATA WHERE PRIMARY_TYPE = "KIDNAPPING"
- (•) SELECT * FROM CHICAGO_CRIME_DATA WHERE PRIMARY_TYPE = "KIDNAPPING" AND DESCRIPTION LIKE “%CHILD%”
- ( ) SELECT * FROM CHICAGO_CRIME_DATA WHERE DESCRIPTION LIKE “%CHILD%”
- ( ) SELECT * FROM CHICAGO_CRIME_DATA WHERE PRIMARY_TYPE = "KIDNAPPING" AND DESCRIPTION = “%CHILD%”

Correct
Correct!

5. Which two of the following clauses did you use to get the unique list of the types of crimes recorded in schools? 1 / 1 point

- [ ] COUNT
- [ ] AVERAGE
- [x] DISTINCT

Correct
Partially Correct!

- [x] LIKE

Correct
Partially Correct!

6. What was the average safety score for middle schools? 1 / 1 point

- ○ 49.52
- ○ 49.62
- ◉ 48.0
- ○ 46.42

Correct
Correct!

7. What would you add to the following query to list five community areas with the highest % of households below the poverty line? 1 / 1 point

SELECT COMMUNITY_AREA_NAME FROM CENSUS_DATA _____;

- ○ ORDER BY PERCENT_HOUSEHOLDS_BELOW_POVERTY DESC
- ◉ ORDER BY PERCENT_HOUSEHOLDS_BELOW_POVERTY DESC LIMIT 5
- ○ ORDER BY PERCENT_HOUSEHOLDS_BELOW_POVERTY LIMIT 5
- ○ ORDER BY PERCENT_HOUSEHOLDS_BELOW_POVERTY DESC LIMIT

Correct
Correct!

8. Which community area number has the most criminal incidents (most crime-prone)? 1 / 1 point

- ○ 20.0
- ○ 36.0
- ○ 23.0
- ◉ 25.0

Correct
Correct!

9. Which of the following would be the correct way to Use a sub-query to find the name of the community area with the highest hardship index? **1 / 1 point**

- ○ SELECT COMMUNITY_AREA_NAME FROM CENSUS_DATA WHERE HARDSHIP_INDEX IN (SELECT HARDSHIP_INDEX FROM CENSUS_DATA;
- ○ SELECT COMMUNITY_AREA_NAME FROM CENSUS_DATA WHERE HARDSHIP_INDEX IN (SELECT MOST(HARDSHIP_INDEX) FROM CENSUS_DATA);
- ○ SELECT COMMUNITY_AREA_NAME FROM CENSUS_DATA WHERE HARDSHIP_INDEX AS (SELECT MAX(HARDSHIP_INDEX) FROM CENSUS_DATA);
- ◉ SELECT COMMUNITY_AREA_NAME FROM CENSUS_DATA WHERE HARDSHIP_INDEX IN (SELECT MAX(HARDSHIP_INDEX) FROM CENSUS_DATA);

✓ **Correct**
Correct!

10. What is the name of the community with the most number of crimes? **0 / 1 point**

- ○ Austin
- ◉ Riverdale
- ○ Englewood
- ○ Fuller Park

✗ **Incorrect**
Incorrect! Refer to module 3 content along with the graded assignment lab.

Final Exam

Your grade: 100%

Your latest: **100%** • Your highest: **100%** • To pass you need at least 70%. We keep your highest score.

Next item →

1. The SELECT statement is called a _____, and the output we get from executing the query is called a result set. **1 / 1 point**

- (●) Query
- ( ) Function
- ( ) Operator
- ( ) Table name

Correct
Correct! SELECT statement is used to query datasets and the response is called a result set.

2. Which of the following SQL statements will delete the customers with IDs of B8 and B9? **1 / 1 point**

- ( ) DELETE ('B8', 'B9') FROM CUSTOMERS
- ( ) DELETE FROM CUSTOMERS WHERE CUSTOMER_ID IS ('B8', 'B9')
- (●) DELETE FROM CUSTOMERS WHERE CUSTOMER_ID IN ('B8', 'B9')
- ( ) DELETE CUSTOMER_ID IS ('B8', 'B9') FROM CUSTOMERS

Correct
Correct! This will delete all entries with Customer IDs 'B8' and 'B9'

3. What uniquely identifies each row in a table? **1 / 1 point**

- ( ) The textual data
- ( ) The columns
- ( ) The secondary key of a relational table
- (●) The primary key of a relational table

Correct
Correct! The primary key uniquely identifies each relation in a table.

4. The basic categories of the SQL commands based on functionality are _____ and Data Manipulation Language (DML). **1 / 1 point**

- ( ) Data Input Language (DIL)
- (●) Data Definition Language (DDL)
- ( ) Data Entry Language (DEL)
- ( ) Data Update Language (DUL)

Correct
Correct! DDL and DML are the two main categories of SQL commands.

5. When querying a table called Teachers that contains a list of teachers and the city they teach in, which of the following queries will return the number of teachers from each city? 1 / 1 point

- ○ SELECT City, COUNT(City) FROM Teachers
- ○ SELECT City, DISTINCT(City) FROM Teachers GROUP BY City
- ○ SELECT DISTINCT(City) FROM Teachers
- ◉ SELECT City, COUNT(City) FROM Teachers GROUP BY City

Correct
Correct! This query will generate the desired output.

6. You want to retrieve a list of cities in a state that have between 10,000 and 20,000 residents. Which clause would you add to the following SQL statement: **SELECT City, Residents FROM State** 1 / 1 point

- ○ WHERE Residents 10000 – 20000
- ◉ WHERE Residents BETWEEN 10000 AND 20000
- ○ WHERE Residents IN (10000, 20000)
- ○ WHERE Residents ARE BETWEEN 10000 AND 20000

Correct
Correct! This addition will filter the required results.

7. Which of the following queries will retrieve the LOWEST value of PRICE in a table called PRODUCTS? 1 / 1 point

- ○ SELECT LOWEST(PRICE) FROM PRODUCTS
- ○ SELECT LEAST(PRICE) FROM PRODUCTS
- ○ SELECT MAX(PRICE) FROM PRODUCTS
- ◉ SELECT MIN(PRICE) FROM PRODUCTS

Correct
Correct! This addition will filter the required results.

10. Which of the following statements in python would save the contents of a dataframe 'df' as a table 'Sample' in an SQL database? **1 / 1 point**

- ○ df.read_sql('Sample', connection_object)
- ◉ df.to_sql('Sample', connection_object)
- ○ df.read_sql('Sample')
- ○ df.to_sql('Sample')

Correct
Correct! This is the correct syntax for the required operation.

8. Which of the following queries will return the first name of the employee who earns the highest salary? **1 / 1 point**

- ◉ SELECT FIRST_NAME FROM EMPLOYEES WHERE SALARY =

  (SELECT MAX(SALARY) FROM EMPLOYEES) LIMIT 1
- ○ SELECT FIRST_NAME, MAX(SALARY) FROM EMPLOYEES GROUP BY F_NAME
- ○ SELECT FIRST_NAME FROM EMPLOYEES WHERE SALARY IS HIGHEST
- ○ SELECT MAX(SALARY) FROM EMPLOYEES

Correct
Correct! This addition will filter the required results.

9. A database cursor is a control structure that; **1 / 1 point**

- ○ Does not allow you to create tables
- ◉ Enables traversal over the records in a database
- ○ Does not allow communication with a database
- ○ Does not allow you to update records within a database

Correct
Correct! A database cursor is a control structure that enables traversal over the records in a database.