1. What makes SQL a nonprocedural language?

* **In SQL you only need to specify whatever needs to be done**

1. How can you tell whether a database is truly relational?

* **Apply Codd’s 12th rule**

1. What can you do with SQL?

* **Select, insert, modify, and delete information in a database**

1. Name the process that separates data into distinct, unique sets.

* **Normalization**

1. Do the following statements return the same or different output: SELECT \* FROM ARRESTS; select \* from arrests;

* **Different. One is in lowercase and the other is in uppercase.**

1. None of the following queries work. Why not? select \*; Select \* from checks Select amount name payee FROM checks;

* Select \* 🡪 **FROM clause is missing**
* Select \* from checks 🡪 **Semicolon is missing**
* Select \* amount name payee FROM checks; 🡪 **Missing comma between each column name (Select \* amount, name, payee FROM checks;)**

1. Which of the following SQL statements will work? select \* from checks; select \* from checks; select \* from checks /

* **All of them work.**

8. Given the following table description for the arrests table:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| nysid | officerId | topCharge |  |  |  |

Do the following:

* Write a query to return just the check officerId and the topCharge.

**Select FROM officerID, Select FROM topCharge;**

* Rewrite the query from exercise 1 so that the topCharge will appear as the first column in your query results.

**Select FROM topCharge, officerID from officerID**

* Using the arrests table, write a query to return all the unique topCharges.

**SELECT DISTINCT topCharge FROM officerID**

Use the doubleAgents table to answer the following questions.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **LASTNAME** | **FIRSTNAME** | **AREACODE** | **PHONE** | **ST** | **ZIP** |
| BUNDY | AL | 100 | 555-1111 | IL | 22333 |
| MEZA | AL | 200 | 555-2222 | UK |  |
| MERRICK | BUD | 300 | 555-6666 | CO | 80212 |
| MAST | JD | 381 | 555-6767 | LA | 23456 |
| BULHER | FERRIS | 345 | 555-3223 | IL | 23332 |
| PERKINS | ALTON | 911 | 555-3116 | CA | 95633 |
| BOSS | SIR | 204 | 555-2345 | CT | 95633 |

* Write a query that returns everyone in the database whose last name begins with M.

**SELECT \* FROM FRIENDS WHERE LASTNAME LIKE ‘M%’;**

* Write a query that returns everyone who lives in Illinois with a first name of AL.

**SELECT \* FROM FRIENDS WHERE STATE = ‘IL’ AND FIRSTNAME = ‘AL’;**

* What shorthand could you use instead of WHERE a >= 10 AND a <=30?

**WHERE a BETWEEN 10 AND 30;**

* What will this query return? SELECT FIRSTNAME FROM DOUBLE\_AGENTS WHERE FIRSTNAME = 'AL' AND LASTNAME = 'BULHER';

**SELECT FIRSTNAME FROM FRIENDS WHERE FIRSTNAME = ‘AL’**

**AND LASTNAME = ‘BULHER”**

1. Using the DOUBLEAGENTS table, write a query that returns the following:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **NAME** | **ST** |  |  |  |  |
| AL FROM | IL |  |  |  |  |

* **SQL > SELECT (FIRSTNAME || ‘FROM’) NAME, STATE, FROM FRIENDS WHERE STATE = ‘IL’ AND LASTNAME = ‘BUNDY’;**

1. Using the DOUBLEAGENTS table, write a query that returns the following:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **NAME** | **PHONE** |  |  |  |  |
| MERRICK, BUD | 300-555-6666 |  |  |  |  |
| MAST, JD | 381-555-6767 |  |  |  |  |
| BULHER, FERRIS | 345-555-3223 |  |  |  |  |

* **SQL > SELECT LASTNAME || ‘,’ || FIRSTNAME NAME, AREACODE || ‘-‘ || PHONE PHONE FROM FRIENDS WHERE AREACODE BETWEEN 300 AND 400;**

1. Which function capitalizes the first letter of a character string and makes the rest lowercase?

* **INITCAP**

1. Which functions are also known by the *same* name?

* **Group functions and aggregate functions**

1. Will this query work? SELECT COUNT(LASTNAME) FROM CHARACTERS;

* **Yes it will return the total of the rows**

1. How about this one? SELECT SUM(LASTNAME) FROM CHARACTERS

* **It won’t work because LASTNAME is a character field**

1. Assuming that they are separate columns, which function(s) would splice together FIRSTNAME and LASTNAME?

* **The CONCAT function and the || symbol**

1. What does the answer 37 mean from the following SELECT? SELECT COUNT(\*) FROM drone\_strikes;

* **Number of records in the table**

1. Will the following statement work? (Hint: look up substr) SELECT SUBSTR LASTNAME,1,5 FROM NAME\_TBL;

* **NO. we are missing a () around LASTNAME.**

Marksmanship table:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| officerId | FirstName | LastName | hits | shotsTaken |  |

1. Using a table called SHOOTSTATS table, write a query to determine who is are on target less than .25.

* **USING SHOOTSTATS;**

**SELECT officerID, Name FROM FirstName WHERE hits < .25;**

1. Using today's OFFICERS table, write a query that will return the following:

officers table

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **First** | **Middle** | **Last** | **BadgeID** |  |  |
| Kevin | Anthony | Petrone | 32 |  |  |

OUTPUT:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **INITIALS** | **CODE** |  |  |  |  |
| K.A.P. | 32 |  |  |  |  |

1. Which clause works just like LIKE(%)? (HINT: Look it up on google.)

* **STARTING WITH**

1. What is the function of the GROUP BY clause, and what other clause does it act like?

* **GROUP BY clause groups function results in sets from the data. Works just like ORDER BY.**

1. Will this SELECT work? NAME, AVG(SALARY), DEPARTMENT FROM PAY\_TBL WHERE DEPARTMENT = 'SWAT' ORDER BY NAME GROUP BY DEPARTMENT, SALARY;

* **No because GROUP BY has to come before ORDER BY**

1. When using the HAVING clause, do you always have to use a GROUP BY also?

* **YES**

1. Can you use ORDER BY on a column that is not one of the columns in the SELECT statement?

* **YES**

1. Using the ORGCHART table from the following examples, find out how many people on each team have 30 or more days of sick leave.

Here is your baseline that shows how many folks are on each team.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| empId | First | Last | Team | Sickleave |  |
| 1 | Alan | Turing | Algebra | 31 |  |
| 2 | John | Von Neuman | PDE | 32 |  |
| 3 | Robert | Oppenhiemer | Physics | 27 |  |
| 4 | Enrico | Fermi | Physics | 24 |  |
| 5 | Leo | Szilard | Physics | 37 |  |
| 6 | George | Danzig | Operations | 22 |  |
| 7 | Eric | Djkstra | CS | 21 |  |
| 8 | Linus | Torvals | CS | 36 |  |
| 9 | Richard | Stallman | CS | 40 |  |

Compare it to the query that solves the question: INPUT:

SELECT TEAM, COUNT(TEAM)

FROM ORGCHART

WHERE SICKLEAVE >=30

GROUP BY TEAM;

* **Output shows number of people on each team with a balance of 30 days or more labeled as SICKLEAVE**