EXCEL Homework 2

With the decreasing cost of providing technology and the increasing human activity on the internet comes an enormous increase in the amount of data collected. Researching a company you may like to interview with can often provide insight into the kinds of questions they might ask you in an interview. How does their business use data for its primary value? In other words why did they build their software?

# To empower you on your next interview here is a list of currently popular terms that describe how some of databases are being used today to fulfill their primary goal. Google them and collect a 1-3 sentence definition or description of each and include at least one use case for each. A use case is an example of how somebody will use it. A transactional database use case is: A person drives up to an ATM to withdraw cash from their bank account.

1. Data warehouse
2. Transactional , or Real Time database
3. Analytical database
4. Time series database
5. Flat file database
6. Spatial database
7. Cloud database

# Here is a list of some popular database products being used today. Google them to discover how they distinguish themselves from the others. List at least one example of who is using it for what purpose, and one example of why it was chosen over the others.

1. [Oracle](https://en.wikipedia.org/wiki/Oracle_Corporation)
2. [MySQL](https://en.wikipedia.org/wiki/MySQL)
3. [Microsoft SQL Server](https://en.wikipedia.org/wiki/Microsoft_SQL_Server)
4. [PostgreSQL](https://en.wikipedia.org/wiki/PostgreSQL)
5. DB2
6. Vertica
7. SAP Sybase ASE
8. Teradata

# The class focuses on learning SQL using Oracle. All of the databases above use SQL. The instructor postulates what you learn in this class is 95-97% transferrable to any of the products listed that in a typical job setting is. Is that true? Or, is the instructor full of beans and gravy.

# Founded in 1918, ANSI (American National Standards Institute) is a private, non-profit organization that administers and coordinates the U.S. voluntary standards and conformity assessment system. Periodically ANSI updates and republishes the “Database Languages – SQL” standards. Each manufacturer claims ANIS compliance with these standards.

# Below is a table showing syntax differences between Oracle SQL and Microsoft SQL Server SQL. Although you may intuit meaning from their names, we have not covered any of these and you are not expected to understand them. Three of the columns are blank. Fill in these three columns.

**SQL Functions: Description and Syntax**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Description** | **Oracle** | **MS SQL Server** | **PostgreSQL** | **MySQL** | **Vertica** |
| Find smallest integer >= n | CEIL | CEILING |  |  |  |
| Modulus | MOD | % |  |  |  |
| Truncate number | TRUNC | <none> |  |  |  |
| Translate NULL to n | NVL | ISNULL |  |  |  |
| Return NULL if two values are equal | DECODE | NULLIF |  |  |  |
| String concatenation | CONCAT(str1,str2) | str1 + str2 |  |  |  |
| Capitalize first letters of words | INITCAP | <none> |  |  |  |
| Find string in string | INSTR | CHARINDEX |  |  |  |
| Find pattern in string | INSTR | PATINDEX |  |  |  |
| String length | LENGTH | DATALENGTH |  |  |  |
| Pad string with blanks | RPAD, RPAD | <none> |  |  |  |
| Trim leading or trailing chars other than blanks | LTRIM, RTRIM, TRIM | <none> |  |  |  |
| Replace chars in string | REPLACE | STUFF |  |  |  |
| Convert number to string | TO\_CHAR | STR, CAST |  |  |  |
| Convert string to number | TO\_NUMBER | CAST |  |  |  |
| Get substring from string | SUBSTR | SUBSTRING |  |  |  |
| Date addition | ADD\_MONTH or + | DATEADD |  |  |  |
| Date subtraction | MONTHS\_BETWEEN or - | DATEDIFF |  |  |  |
| Last day of month | LAST\_DAY | <none> |  |  |  |
| Time zone conversion | NEW\_TIME | <none> |  |  |  |
| Next specified weekday after date | NEXT\_DAY | <none> |  |  |  |
| Convert date to string | TO\_CHAR | DATENAME, CONVERT |  |  |  |
| Convert string to date | TO\_DATE | CAST |  |  |  |
| Convert date to number | TO\_NUMBER(TO\_CHAR(d)) | DATEPART |  |  |  |
| Date round | ROUND | CONVERT |  |  |  |
| Date truncate | TRUNC | CONVERT |  |  |  |
| Current date | SYSDATE | GETDATE |  |  |  |
| If statement in an expression | CASE, DECODE, COALESCE | CASE, COALESCE |  |  |  |
| Current user | USER | USER |  |  |  |