**PUT YOUR NAME HERE:**

**Introduction to SQL (with the BlandCo Database)**

This exercise introduces SQL's SELECT statements using the following simple scenario.

You work for a small professional services company (“BlandCo Services”) that keeps track of employees, customers, and engagements (the consulting work).

The data for this exercise is provided in a separate text file (blandco.sql)

In class, your instructor will walk you through using that script to create your own copies of the database tables.

**Tables**

* Employees: information about each worker (id, first\_name, last\_name, role, hire\_date).
* Customers: information about client companies (id, companyname, industry).
* Engagements: stores the project name, hours billed, and status. This table also logically connects employee records to customer records.

There is a corresponding ***schema*** diagram at the end of this document.

**Learning objectives**

The tasks below guide you through the core uses of the SELECT statement.

**1. Selecting from a single table**

A) List all employees.

B) List all employees showing only first name, last name, and role.

**2. Filtering with WHERE**

A) Find the names of employees who are Consultants.

B) Find the names of employees who are either Consultants or Analysts.

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| DISCUSS: What SQL ***clauses*** did you just use?  DISCUSS: In SQL, what are commas used for? What are the logical operators (AND OR) used for? |

**3. Sorting with ORDER BY**

A) List all customers, sorted customers by company name.

B) List all employees by last name and then by first name (i.e. “Roster Order”).

**4. Grouping and counting**

A) Produce a unique list, showing all the industries served by BlandCo.

B) Improve your unique list by showing how many companies are in each category.

**5. Grouping and summing**

Using the SUM aggregate function, find the total hours billed for each customer\_id.

(You do not need to show the company name here.)

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| DISCUSS: Now try replacing SUM with COUNT and rerun the query. What is the difference between SUM and COUNT? |

**6. Joining tables**

Join customers to engagements to see company names, project names, hours billed and status.

(HINT: take a hard look at the schema diagram to determine which columns are the primary and foreign keys.)

**7. Joining and sorting**

Join customers to engagements to see company names, project names, hours billed and status. Sort your results by hours billed, largest values first.

**8. Left join (keeping all rows from one side)**

List all customers and the project names for the engagements they have. Sort by company name, and project name. ***Be sure to include all the companies, even the companies that have no engagements.*** (Perhaps these are future customers, with no engagements yet!)

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| DISCUSS: How can you tell if the company has no engagements?  DISCUSS: Replace LEFT with RIGHT and observe the difference. |

**9.** Upload a copy of this file to Canvas, as directed by your instructor.

***SCHEMA*** DIAGRAM

