LAB 1 (Basic Select Statements)

1. Write a query returning all records in the project table.
2. Write a query returning the name and budget of each project.
3. Add sorting by budget (low-high) to the previous query.
4. Improve the budget column of the previous query by rounding to two digits.
5. Name the rounded budget column of the previous query “budget”.
6. Write a query returning a list of project names.
7. Continuing from the previous query, delimit the returned project names to 5 characters.
8. Continuing from the previous query, rename the project name column to “prcode”.

LAB 2 (Filtering Results)

1. Write a query returning name and budget of the project with id 3 in the project table.
2. Write a query returning all projects in the project table with name “Website”.
3. Write a query returning the names of all projects in the project table with a budget of more than 500.
4. Write a query returning all projects in the project table with a budget between 250 and 1500.
5. Write a query returning all projects in the project table with a budget below 500 or above 1500.
6. Write a query returning all projects in the project table with an id above 1 and a budget above 500.
7. Write a query returning all projects in the project table without a defined budget.
8. Write a query returning roles in the role table whose title includes “manager”.
9. Write a query returning the roles in the role table whose title is “Developer” or “Tester”.

LAB 3 (Consolidating Data)

1. Write a query returning the number of records in the project table.
2. Write a query returning the number of project names in the project table.
3. Write a query returning the number of project names in the project table whose budget is below 1000.
4. Write a query returning the grand total of all project budgets listed in the project table.
5. Write a query returning the average project budget listed in the project table.
6. Write a query returning the lowest project budget listed in the project table.
7. Write a query returning the highest role id used in the role table.
8. Write a query returning the average length of role names in the role table.
9. Write a query returning a merged list of project names and role titles.

LAB 4 (Grouping Data)

1. Write a query returning the number of records in the project table.
2. Write a query returning the number of roles per initial of the role title in the role table.
3. Write a query returning all records in the projectperson table. The output of this query will allow you to verify the correctness of the results of the following exercise steps.

4. Write a query returning the number of individual staff roles assigned to each project in the projectperson table.
5. Write a query returning the number of staff assigned to each role in each project in the projectperson table.
6. Write a query returning the number of roles assigned to each person in each project in the projectperson table.
7. Modify the query written in step 5 to only return those projects and roles that have more than one person assigned to them.
8. Modify the query written in step 6 to only return those persons in each project that are assigned to more than one role.
9. Modify the previous query to return a list of projects in which persons are assigned to more than one role.

LAB 5 (Joining Tables)

1. Write a query returning staff details with all records in the projectperson table.
2. Write a query returning the names of staff per project in the projectperson table.
3. Improve the output of the previous query by sorting and removing duplicates.
4. Extend the previous query to include the project name.
5. Extend the previous query to also output the role of each person within the respective project.
6. Extend the previous query to also output the name of the manager of each person in the respective project.
7. Write a query returning a list of persons including, if assigned, their respective manager.
8. Combine the previous two queries to ensure persons without manager assignment are included in the result.
9. Write a query returning a list of projects in the project table that have no staff assigned.

LAB 6 (Subqueries)

1. Write a query returning the projects with a budget larger than the average budget over all projects in the project table.
2. Write a query returning all projects in the project table, for each project stating their share of the overall budget.
3. Optimize the previous query by adding headings and rounding.
4. Write a query returning persons acting as “Project Manager” in any project.
5. Write a query returning all projects in the project table that have no staff assigned.
6. Write a query returning all persons in the person table that have a postal address listed in the contact table.
7. Write a query returning a table with all contact types and their assignments in the contact table.
8. Use the previous query as a derived table in a query returning all persons in the person table with their contact details.
9. Write a query returning how often the most used contact type in the contact table is assigned.

LAB 7 (Manipulating Data)

1. Write a query adding a new project “twitter” to the project table.
2. Write a query assigning a budget of 150 to the just added project.
3. Write a query duplicating all roles in the role table so that the duplicates have role titles prefixed with “External”.
4. Write a query assigning Paul Miller as “External Developer” to the project “twitter” by manually determining the required foreign key values.
5. Write a query promoting Paul Miller to “External Project Manager”, the assignment added by the previous query.
6. Write a query removing the assignment managed by the previous two queries.
7. Write a query removing the roles added above.
8. Write a query removing the project “twitter”.