THE SRC CONSULTATION PRESENTATION TEAM 5

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NARRATIVE

- SR Consulting (SRC) is a firm that creates custom software for its clients. When the client goes searching for a job, the manager at SRC will decide the staffing needs, responsibilities, and required skills for the consultant. Eventually, they will find a consultant who is available with the required skills and assign them to a project. When a consultant is assigned to become a project manager. When the project is done, the project manager will evaluate the work of the consultants and the consultants will evaluate the project manager. Projects can be subdivided into many projects.

BUSINESS RULES:

- Consultants may receive more than one evaluation.
- Sometimes a consultant does not receive an evaluation, only because they may have not been assigned to a project.
- A consultant may be assigned to one or more projects, or they can be assigned to no projects.
- A project may be assigned to one or more consultants.
- Only one consultant can be assigned as a manager.
- Only one manager can manage each project.
- A project can be subdivided into sub-projects.
- One or more projects can belong to one client
- A project can require more than one skill.
- A manager may have one or more skills for management.

COMPONENTS OF ERD

Components of the ERD			
Entity	**Relationship**	**Connectivity**	**Entity**
Assignments	Tasked to	M:1	Project
Certification	Gains	M:1	Skills
Consultant	Assists with	1:M	Assignments
Consultant	Recieves	1:M	Certification
Evaluation	Performed by	M:1	Consultant
Manager	Appraises	1:M	Evaluation
Manager	Determines	1:M	Assignments
Manager	Handles	1:M	Project
Project	Contains	1:M	SubProject
Project	Associates	M:1	Client
Project Requirement	Belongs to	M:1	Project

Components of ERD

ENTITY DESCRIPTIONS

ENTITY: CONSULTANT

- This entity consists of all the information about each consultant employed at the SR Consulting Firm. These attributes include the consultant's ID as a primary key with their attributes of full name, address, city, state, and contact information.

ENTITY: CLIENT

- The client entity holds the relevant information relating to each client. This includes the Client ID which is a primary key and the attributes for client will be the contact name and contact phone.

ENTITY: PROJECT

- The project entity consists of each project the SRC firm has worked on or is currently working on. The primary key that is in use right now is the project ID number. This entity few foreign keys. The foreign keys founded in project will be the project manager ID, Parent project ID, and the Client ID. The client ID is also from the client entity. This entity also maintains the project name.

ENTITY: SKILLS

- For skills there is only one primary key and the primary key is the Skill ID. The attribute for skill would be the skill contact name. In this firm every client will show us their skills.

ENTITY: CONSULTANT PROJECT HISTORY

- For the consultant project history, you will find three primary keys, consultant ID, project ID, and evaluator ID. The consultant history in the SRC firm will have projects, and which each project will have a start and end date, with the total hours worked.

ENTITY: EVALUATION

- For the evaluation, the primary key is an evaluator ID. At SRC after completing a project we will have an evaluation for each client, including management. In the evaluation there will be a date and comment for everyone to fill out.

ENTITY: MANAGEMENT

- For the management, the primary key is the Project Manager ID. At SRC we have the parent project ID which contains a subprojects member, user groups, and roles with their corresponding permissions which is also derived. Also, a subproject can receive project members and their roles from the parent project.

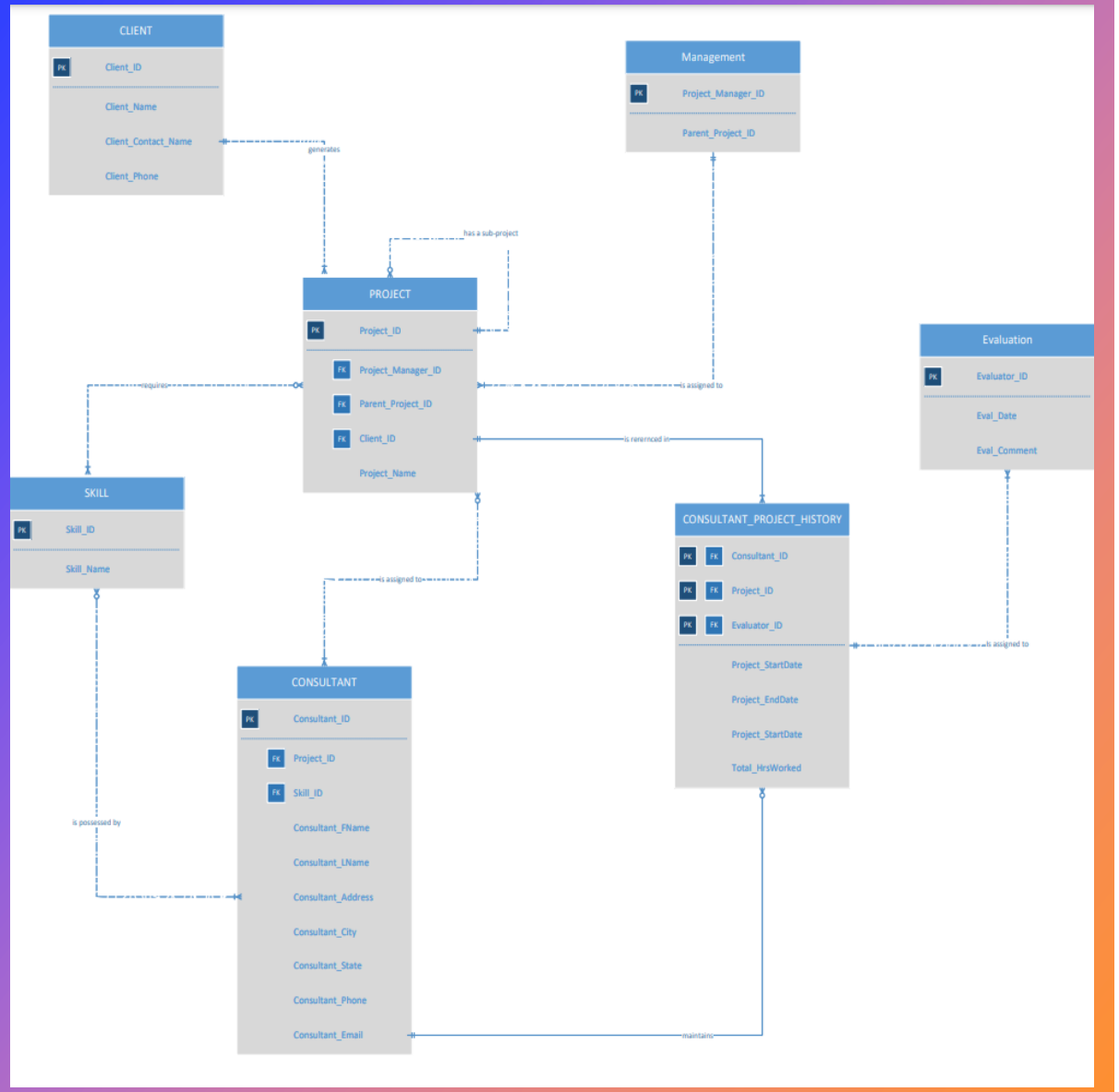
DATA DICTIONARY

Data Dictionary of ERD

Table Name	Attributes	Contents	Type	Format	PK or FK
Evaluation	Evaluator_ID	Evaluation ID	CHAR(3)	123	PK
	Eval_Date	Date of Evaluation	DATE	DD-MM-YY	
	Eval_Comment	Comments about Evaluation	VARCHAR(50)	Lorem Ipsum	
Management	Project_Manager_ID	Project Manager ID	VARCHAR(3)	123	PK
	Parent_Project_ID	Parent Project ID	VARCHAR(3)	123	PK
Consultant	Consultant_ID	Consultant ID	VARCHAR(10)	ABCDE12345	PK
	Project_ID	Project ID	CHAR(3)	123	FK
	Skill_ID	Skill ID	CHAR(1)	1	FK
	Consultant_FName	First Name of Consultant	VARCHAR(15)	John Doe	
	Consultant_LName	Last Name of Consultant	VARCHAR(15)	John Doe	
	Consultant_Address	Address of Consultant	VARCHAR(35)	Lorem Ipsum	
	Consultant_City	City of Consultant	VARCHAR(15)	Lorem	
	Consultant_State	State of Consultant	VARCHAR(2)	AB	
	Consultant_PhoneNumber	Consultant's Phone Number	CHAR(12)	999-999-9999	
	Consultant_Email	Consultant's Email	VARCHAR(25)	JohnDoe@email.com	
Project	Project ID	Project ID	CHAR(3)	123	PK
	Project_Manager_ID	Project Manager ID	CHAR(3)	123	FK
	Parent_Project_ID	Parent Project ID	CHAR(3)	123	FK
	Client_ID	Client ID	VARCHAR(3)	123	FK
	Project_Name	Project Name	VARCHAR(15)	Lorem Ipsum	
Client	Client_ID	Client ID	VARCHAR(3)	123	PK
	Client_Name	Name of Client	VARCHAR(25)	John Doe	
	Client_ContactName	Client's Contact Name	VARCHAR(15)	John Doe	
	Client_Phone	Client's phone number	VARCHAR(12)	999-999-9999	
Skills	Skill_ID	Skill ID	CHAR(1)	1	PK
	Skill_Name	Skill Name	VARCHAR(25)	Lorem Ipsum	
CONSULTANT_PROJECT_HISTORY	Consultant_ID	Consultant ID	VARCHAR(10)	ABCDE12345	BOTH
	Project_ID	Project ID	CHAR(3)	123	BOTH
	Evaluator_ID	Evaluation ID	CHAR(3)	123	BOTH
	Project_StartDate	Start Date of Project	DATE	DD-MM-YY	
	Project_EndDate	End Date of jProject	DATE	DD-MM-YY	
	Total_HoursWorked	Total Hours Worked on Project	INT	23	

Data Dictionary

ERD



Revised ERD with two added tables for organization

TABLE CONSTRUCTION

The Skill Table

```
5  create table SKILL (
6      Skill_ID char(1)primary key,
7      Skill_Name varchar(25));
8  INSERT INTO SKILL VALUES
9      ('1', 'IT Skills'),
10     ('2', 'Analytical Skills'),
11     ('3', 'Problem Solving Logic'),
12     ('4', 'Detail Orientated'),
13     ('5', 'Experience');
14 select * from Skill;
```

Result Grid | Filter Rows: | Edit: | Export/Import:

Skill_ID	Skill_Name
1	IT Skills
2	Analytical Skills
3	Problem Solving Logic
4	Detail Orrientated
5	Experience
NULL	NULL

The Client Table

```
16  create table CLIENT (
17      Client_ID   char(3) primary key,
18      Client_Name varchar(25)not null,
19      Client_Contact_Name varchar(15) not null,
20      Client_Phone    varchar(10));
21  INSERT INTO CLIENT VALUES
22      ('100', 'Doug Dimmadome','Doug','7065551583'),
23      ('101', 'Timmy Turner','Timmy','7065557248'),
24      ('102', 'Dinkle Burg','Dinkleberrrg','7065551432'),
25      ('103', 'Trixie Tang','Trixie','7065551215'),
26      ('104', 'Denzel Crocker','Crocker','7065551849');
27  select * from Client
```

Result Grid | Filter Rows: | Edit: | Export/Imp

Client_ID	Client_Name	Client_Contact_Name	Client_Phone
100	Doug Dimmadome	Doug	7065551583
101	Timmy Turner	Timmy	7065557248
102	Dinkle Burg	Dinkleberrrg	7065551432
103	Trixie Tang	Trixie	7065551215
104	Denzel Crocker	Crocker	7065551849
NULL	NULL	NULL	NULL

The Project Table

```
30  /*Creating Project table and inserting values*/
31  create table PROJECT (
32      Project_ID  char(3) primary key,
33      Project_Manager_ID  char(3)not null,
34      Parent_Project_ID   char(3) not null,
35      Client_ID   char(3),
36      Project_Name char(25),
37      foreign key (Client_ID) references CLIENT(Client_ID),
38      foreign key (Parent_Project_ID,Project_Manager_ID) references MANAGEMENT (Parent_Project_ID,Project_Manager_ID));
39  INSERT INTO PROJECT VALUES
40      ('100', '500','999','100','Glowing Symphony'),
41      ('101', '501','998','101','Carrot Stick'),
42      ('102', '502','997','102','Jungle Maniac'),
43      ('103', '503','996','103','Pink Giant'),
44      ('104', '504','995','104','Cookie Crumbles');
45  select * from PROJECT;
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

Project_ID	Project_Manager_ID	Parent_Project_ID	Client_ID	Project_Name
100	500	999	100	Glowing Symphony
101	501	998	101	Carrot Stick
102	502	997	102	Jungle Maniac
103	503	996	103	Pink Giant
104	504	995	104	Cookie Crumbles
NULL	NULL	NULL	NULL	NULL

The Evaluation Table

```
47  /*Creating Evaluation table and inserting values*/
48  create table EVALUATION (
49      Evaluator_ID char(3) primary key,
50      Eval_Date date,
51      Eval_Comment varchar(50));
52  INSERT INTO EVALUATION VALUES
53      ('100', '22-02-15','It worked out alright'),
54      ('101', '22-04-10','Minor issues'),
55      ('102', '22-05-17','Failed'),
56      ('103', '22-06-28','Performance is lacking'),
57      ('104', '22-11-21','Perfection');
58      select * from Evaluation;
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Co

Evaluator_ID	Eval_Date	Eval_Comment
100	2022-02-15	It worked out alright
101	2022-04-10	Minor issues
102	2022-05-17	Failed
103	2022-06-28	Performance is lacking
104	2022-11-21	Perfection
NULL	NULL	NULL

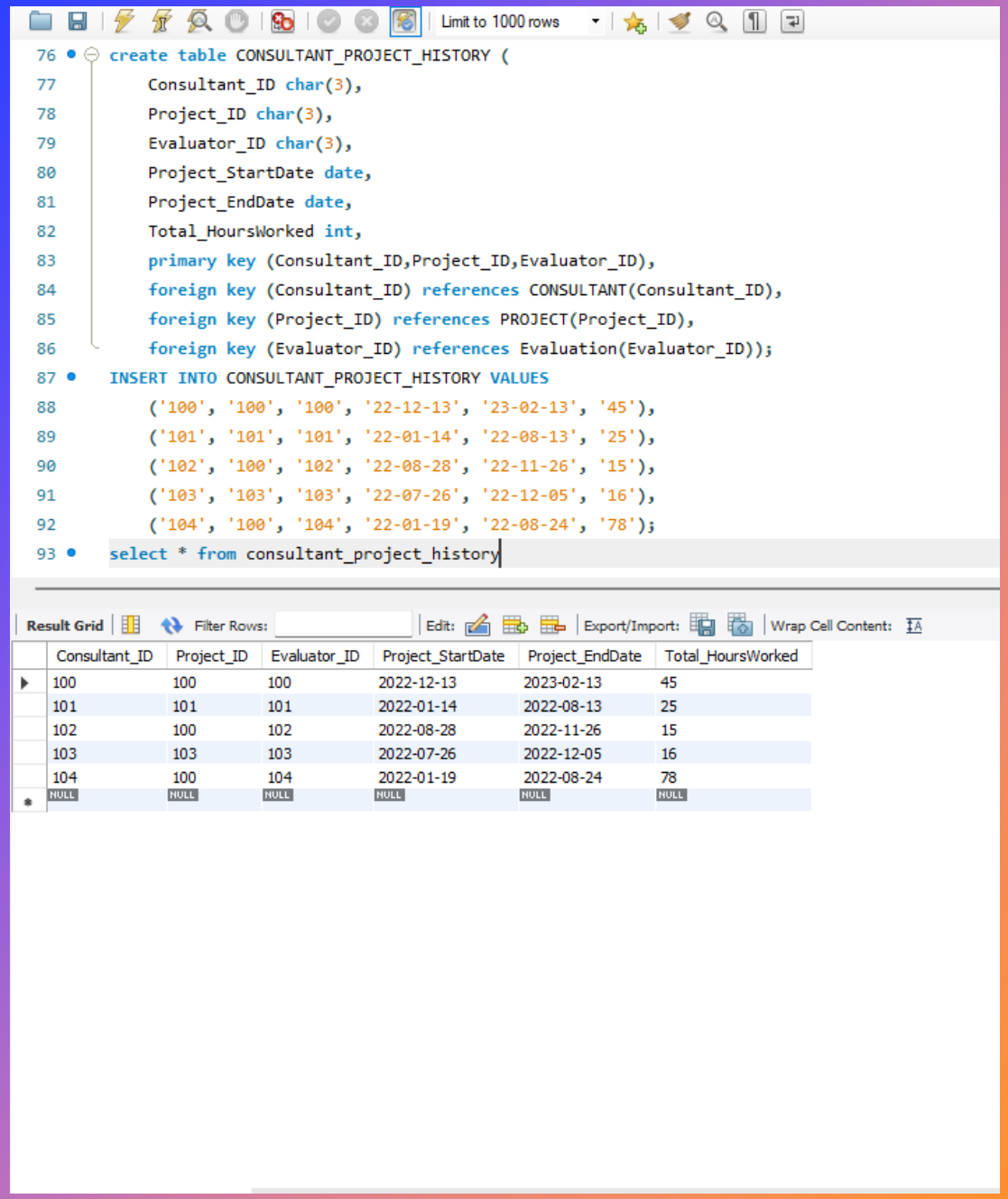
*Created for Foreign Key Use

The Consultant Table

```
54
55  create table CONSULTANT (
56      Consultant_ID char(3) primary key,
57      Project_ID char(3),
58      Skill_ID char(1),
59      Consultant_FName varchar(15),
60      Consultant_LName varchar(15),
61      Consultant_Address varchar(35),
62      Consultant_City varchar(15),
63      Consultant_State varchar(2),
64      Consultant_Phone varchar(12),
65      Consultant_Email varchar(25),
66      foreign key (Project_ID) references PROJECT(Project_ID),
67      foreign key (Skill_ID) references SKILL(Skill_ID));
68  INSERT INTO Consultant VALUES
69      ('100', '100','1','Mark', 'Meyers','422 Pooh Bear Lane','Dalton','MA','517-676-7511','boftx@hotmail.com'),
70      ('101', '101','2','Mariam', 'Landry','3371 Camden Street','Peru','MA','210-528-2290','knorr@yahoo.com'),
71      ('102', '100','3','Eloise', 'Pope','3745 Perry Street','Pittsfield','MA','267-494-2040','ovprit@att.net'),
72      ('103', '100','4','Alicia', 'James','2173 Sigley Road','Kingsland','VA','617-588-6209','noodles@yahoo.ca'),
73      ('104', '104','5','Nia', 'Logan','1590 Bottom Lane','Draper','UT','870-455-5694','hmbrand@comcast.net');
74  select * from Consultant;
```

Result Grid

Consultant_ID	Project_ID	Skill_ID	Consultant_FName	Consultant_LName	Consultant_Address	Consultant_City	Consultant_State	Consultant_Phone	Consultant_Email
100	100	1	Mark	Meyers	422 Pooh Bear Lane	Dalton	MA	517-676-7511	boftx@hotmail.com
101	101	2	Mariam	Landry	3371 Camden Street	Peru	MA	210-528-2290	knorr@yahoo.com
102	100	3	Eloise	Pope	3745 Perry Street	Pittsfield	MA	267-494-2040	ovprit@att.net
103	100	4	Alicia	James	2173 Sigley Road	Kingsland	VA	617-588-6209	noodles@yahoo.ca
104	104	5	Nia	Logan	1590 Bottom Lane	Draper	UT	870-455-5694	hmbrand@comcast.net
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL



```
Limit to 1000 rows
76  create table CONSULTANT_PROJECT_HISTORY (
77      Consultant_ID char(3),
78      Project_ID char(3),
79      Evaluator_ID char(3),
80      Project_StartDate date,
81      Project_EndDate date,
82      Total_HoursWorked int,
83      primary key (Consultant_ID,Project_ID,Evaluator_ID),
84      foreign key (Consultant_ID) references CONSULTANT(Consultant_ID),
85      foreign key (Project_ID) references PROJECT(Project_ID),
86      foreign key (Evaluator_ID) references Evaluation(Evaluator_ID));
87  INSERT INTO CONSULTANT_PROJECT_HISTORY VALUES
88      ('100', '100', '100', '22-12-13', '23-02-13', '45'),
89      ('101', '101', '101', '22-01-14', '22-08-13', '25'),
90      ('102', '100', '102', '22-08-28', '22-11-26', '15'),
91      ('103', '103', '103', '22-07-26', '22-12-05', '16'),
92      ('104', '100', '104', '22-01-19', '22-08-24', '78');
93  select * from consultant_project_history
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

Consultant_ID	Project_ID	Evaluator_ID	Project_StartDate	Project_EndDate	Total_HoursWorked
100	100	100	2022-12-13	2023-02-13	45
101	101	101	2022-01-14	2022-08-13	25
102	100	102	2022-08-28	2022-11-26	15
103	103	103	2022-07-26	2022-12-05	16
104	100	104	2022-01-19	2022-08-24	78
NULL	NULL	NULL	NULL	NULL	NULL

The Consultant Project History Table

The Management Table

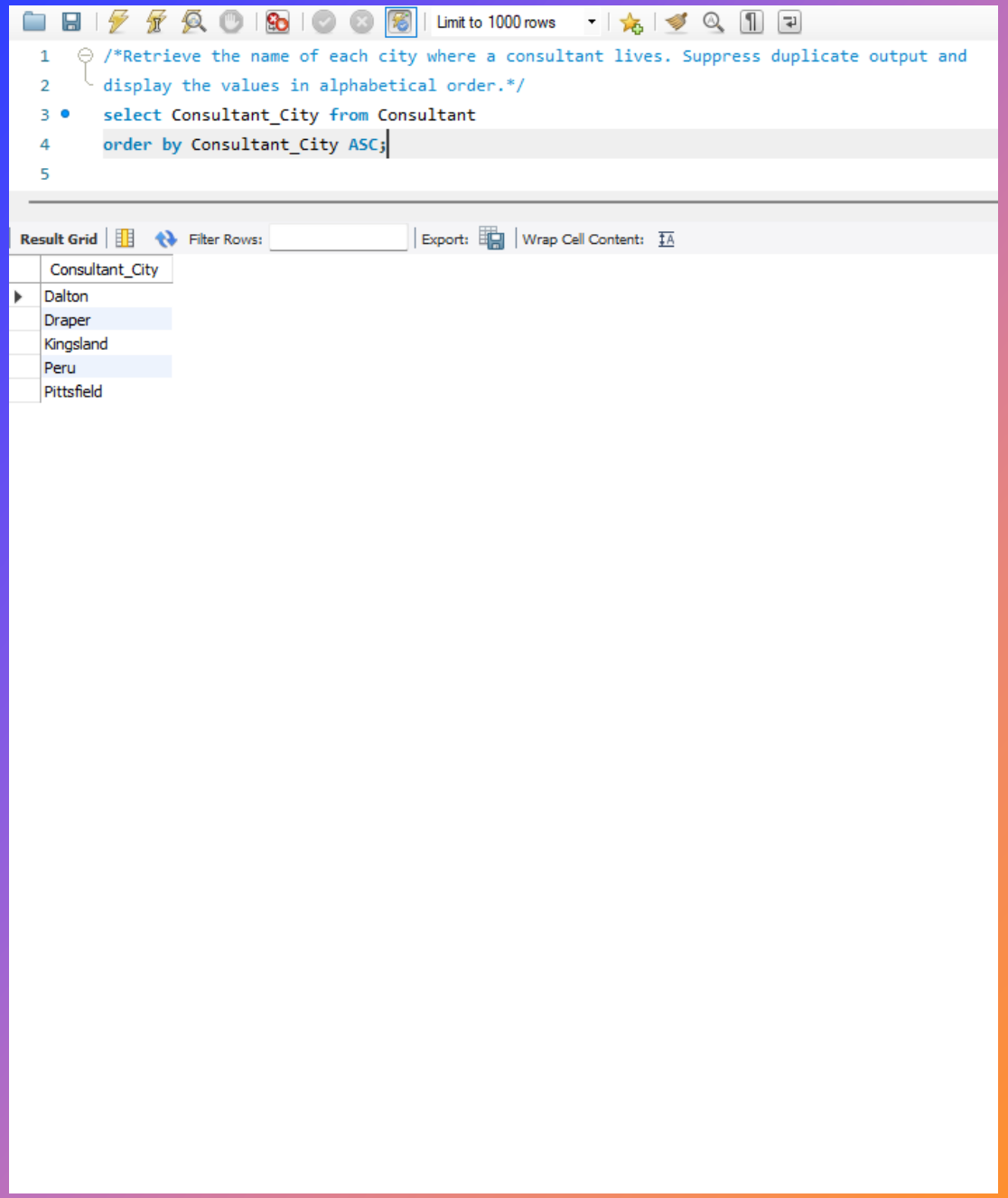
```
100        /*Creating Management table and inserting values*/
101    create table MANAGEMENT (
102        Project_Manager_ID  char(3)not null,
103        Parent_Project_ID   char(3)not null,
104        primary key (Parent_Project_ID,Project_Manager_ID));
105    INSERT INTO MANAGEMENT VALUES
106        ('500','999'),
107        ('501','998'),
108        ('502','997'),
109        ('503','996'),
110        ('504','995');
111    select * from management;
112
```

Result Grid | Filter Rows: | Edit: | Export/Ir

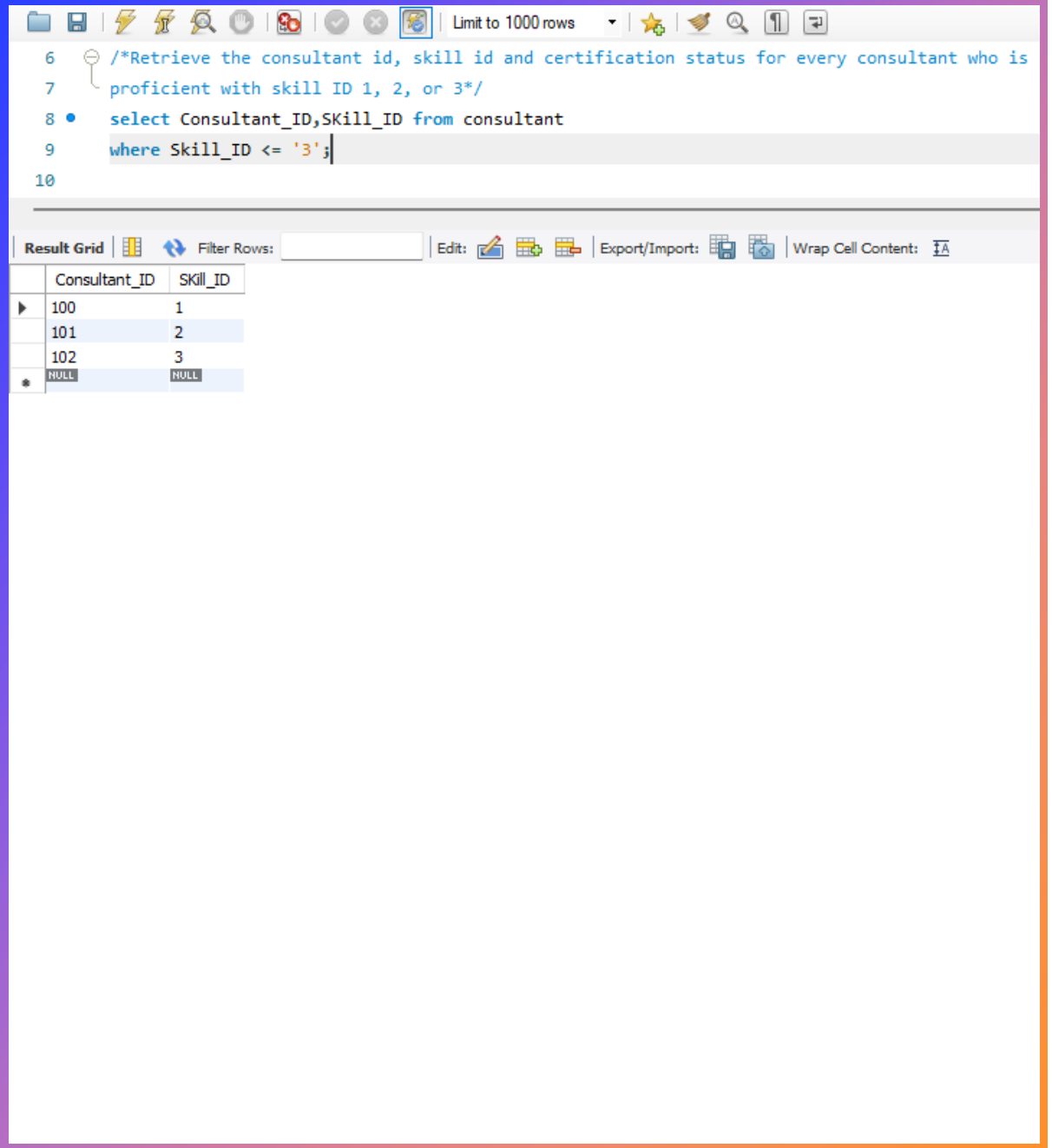
Project_Manager_ID	Parent_Project_ID
504	995
503	996
502	997
501	998
500	999

*Created for Foreign Key Use

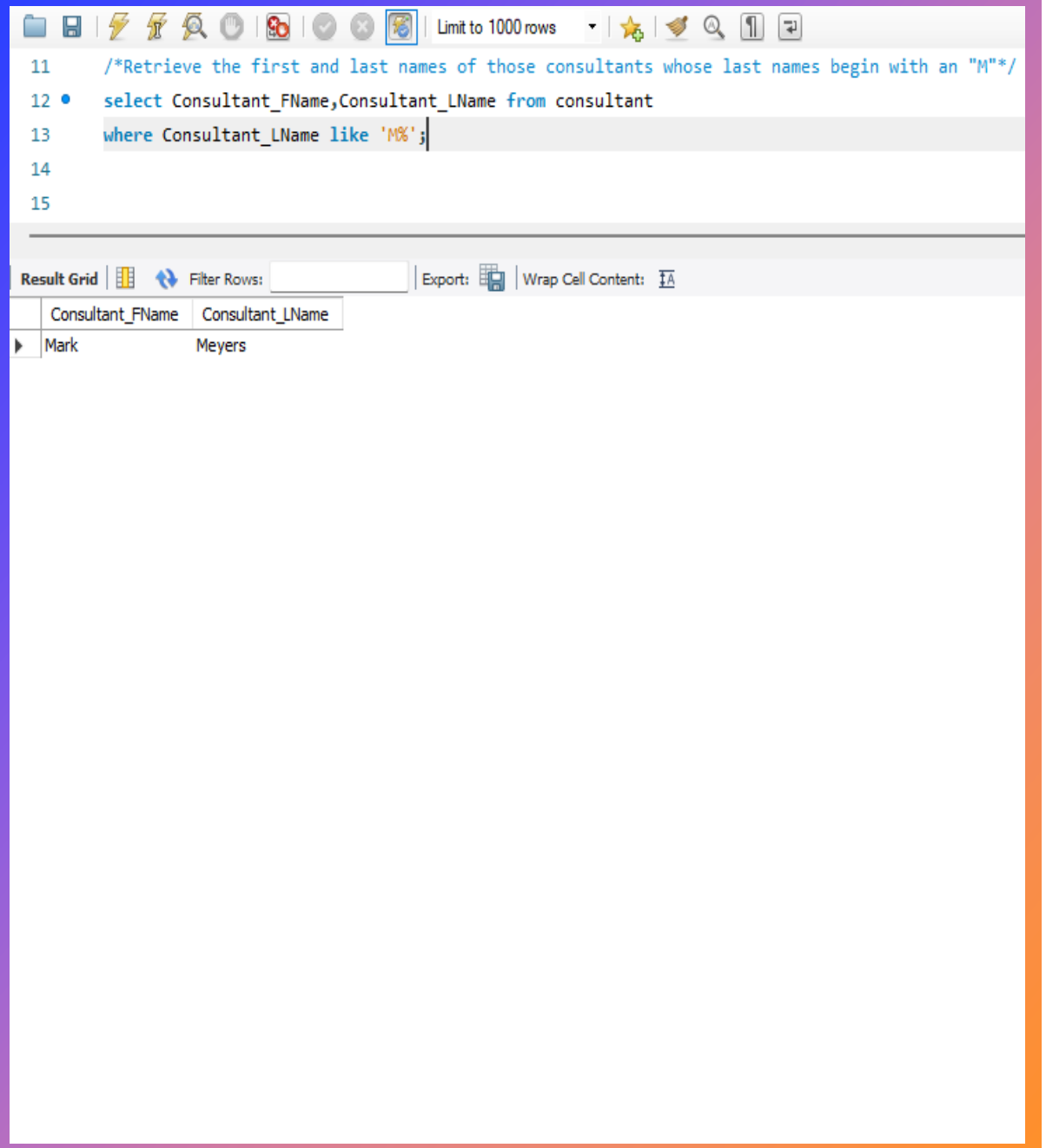
QUERY BUILDING



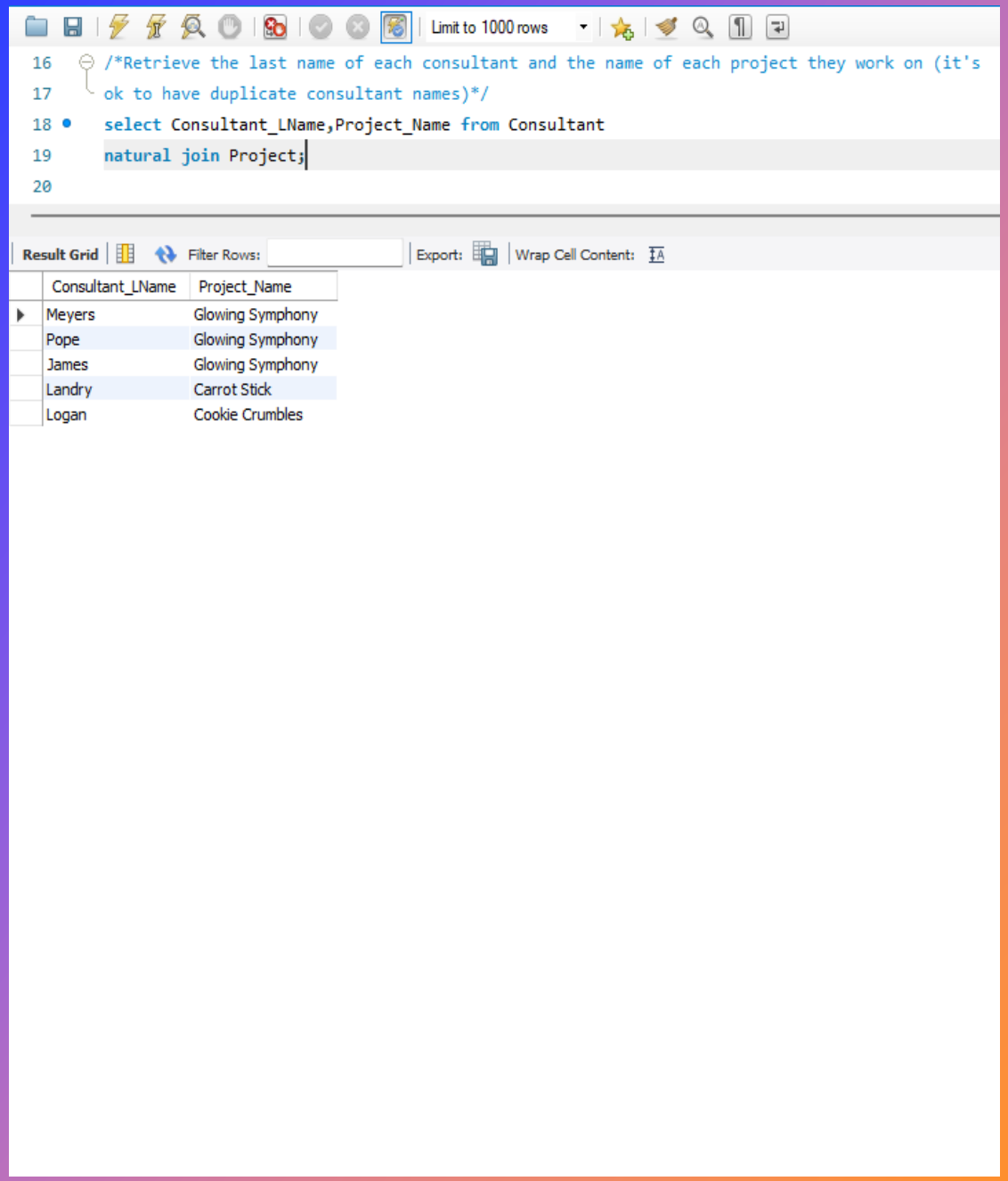
Retrieve the name of each city where a consultant lives. Suppress duplicate output and display the values in alphabetical order



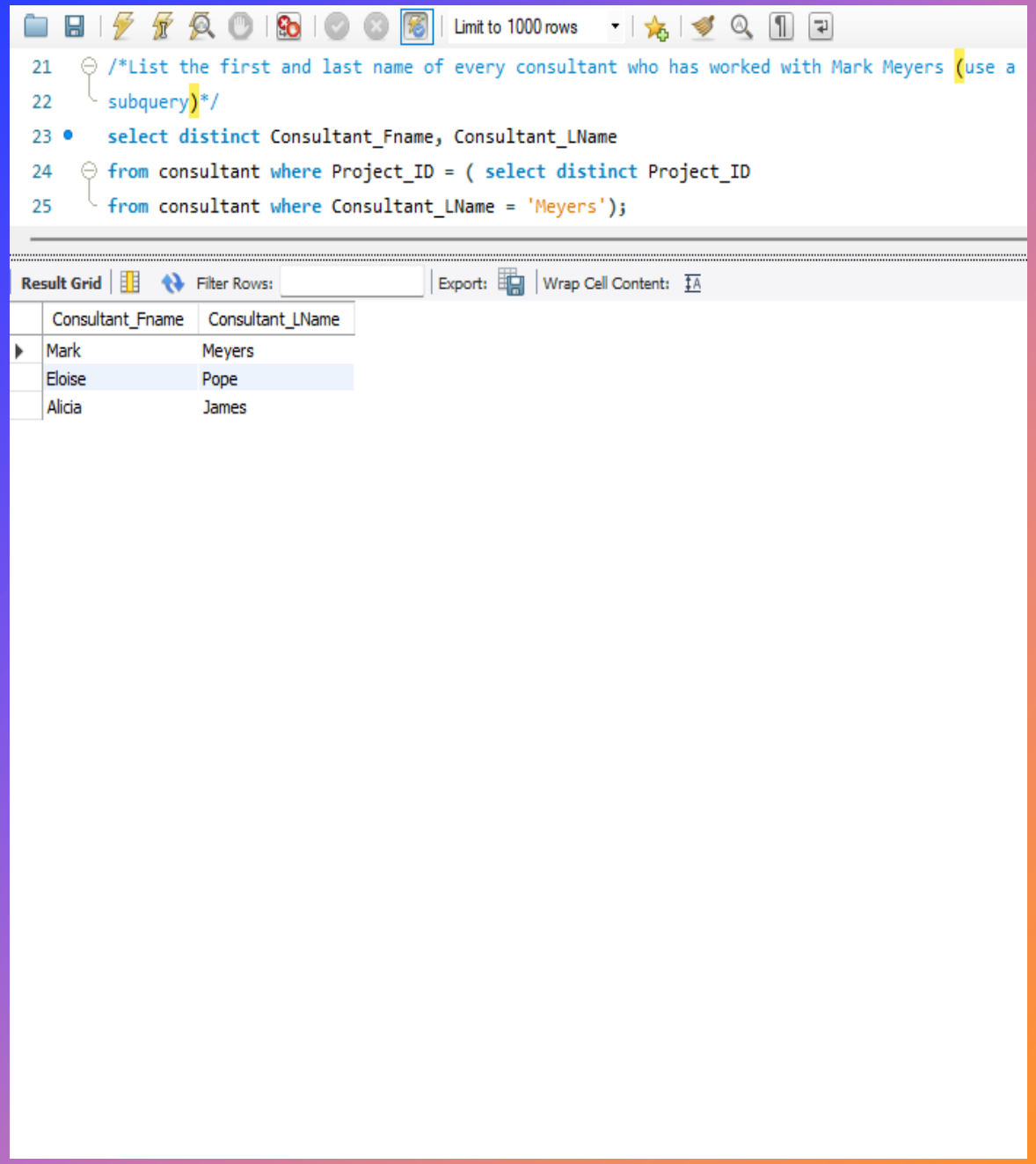
Retrieve the consultant id, skill id and certification status for every consultant who is proficient with skill ID 1, 2, or 3



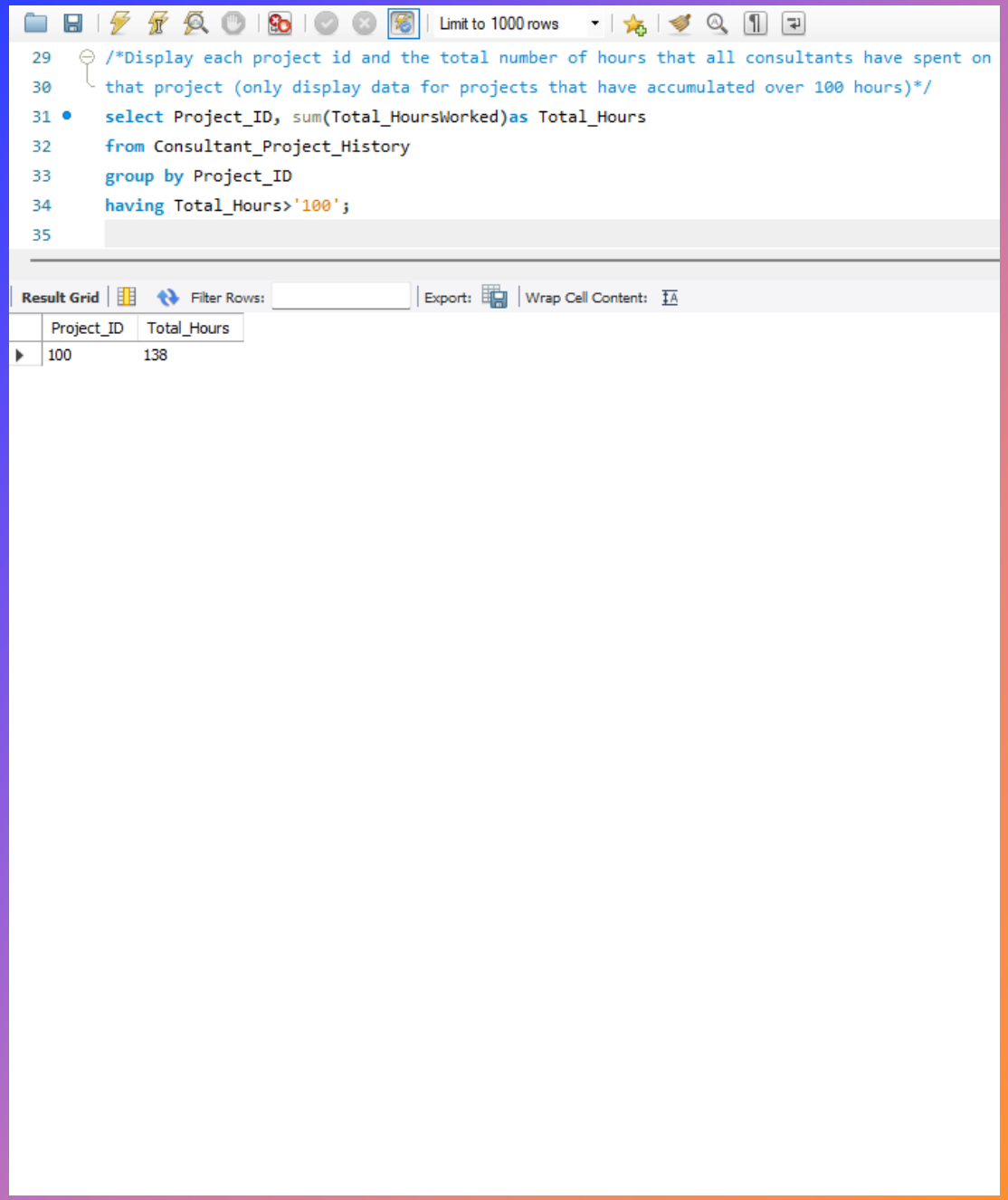
Retrieve the first and last names of those consultants whose last names begin with an "M"



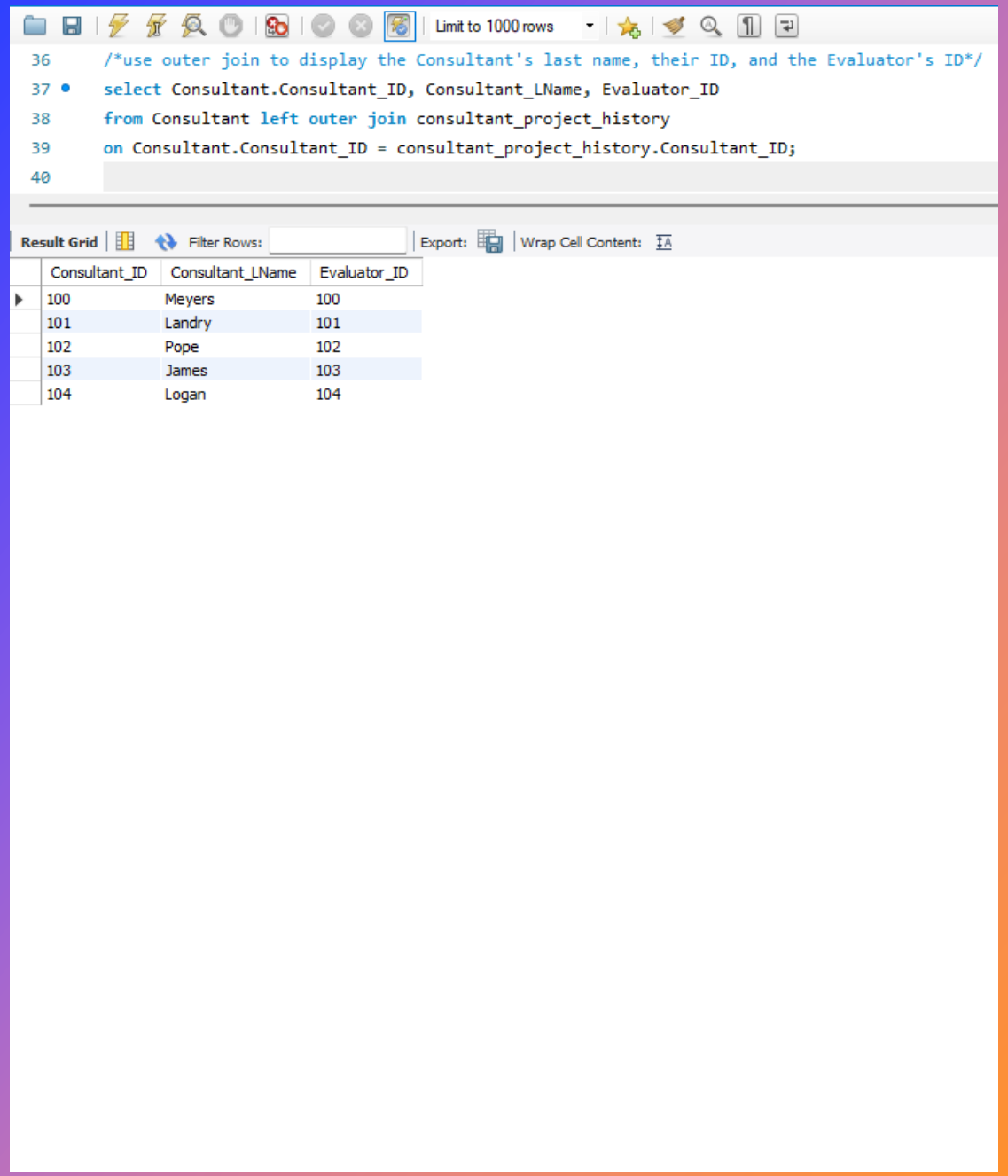
Retrieve the last name of each consultant and the name of each project they work on (it’s ok to have duplicate consultant names)



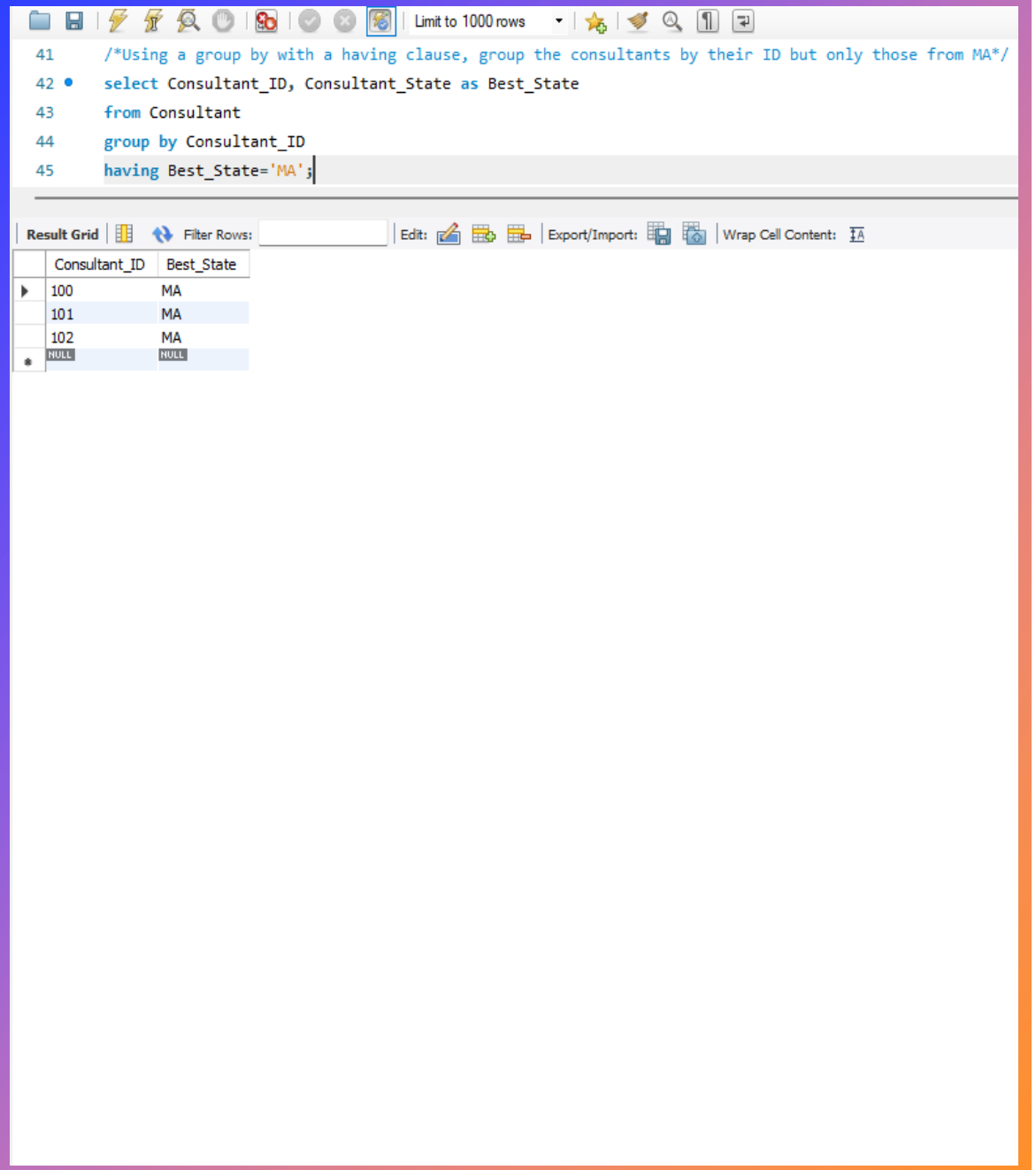
List the first and last name of every consultant who has worked with Mark Meyers (use a subquery)



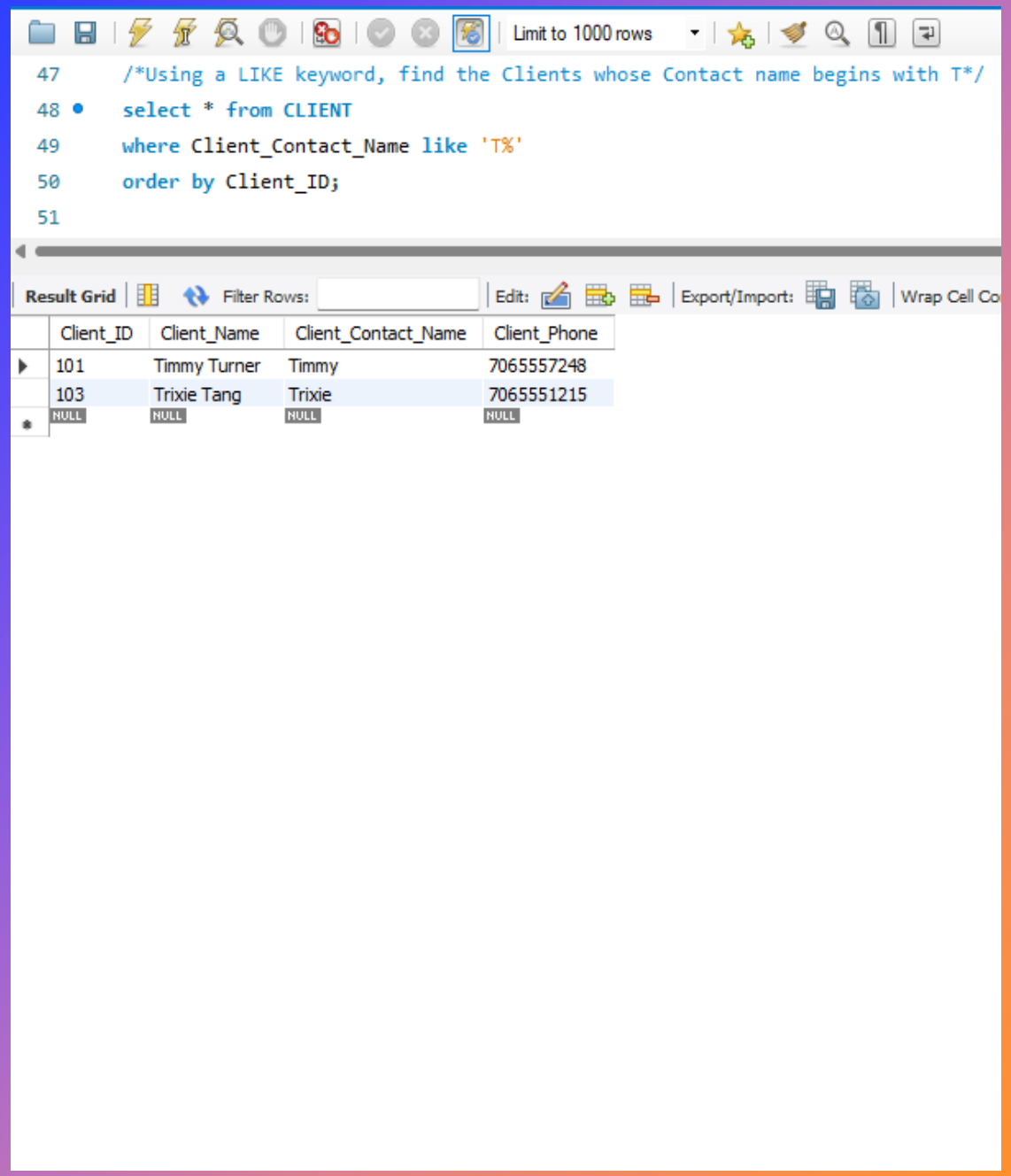
Display each project id and the total number of hours that all consultants have spent on that project (only display data for projects that have accumulated over 100 hours)



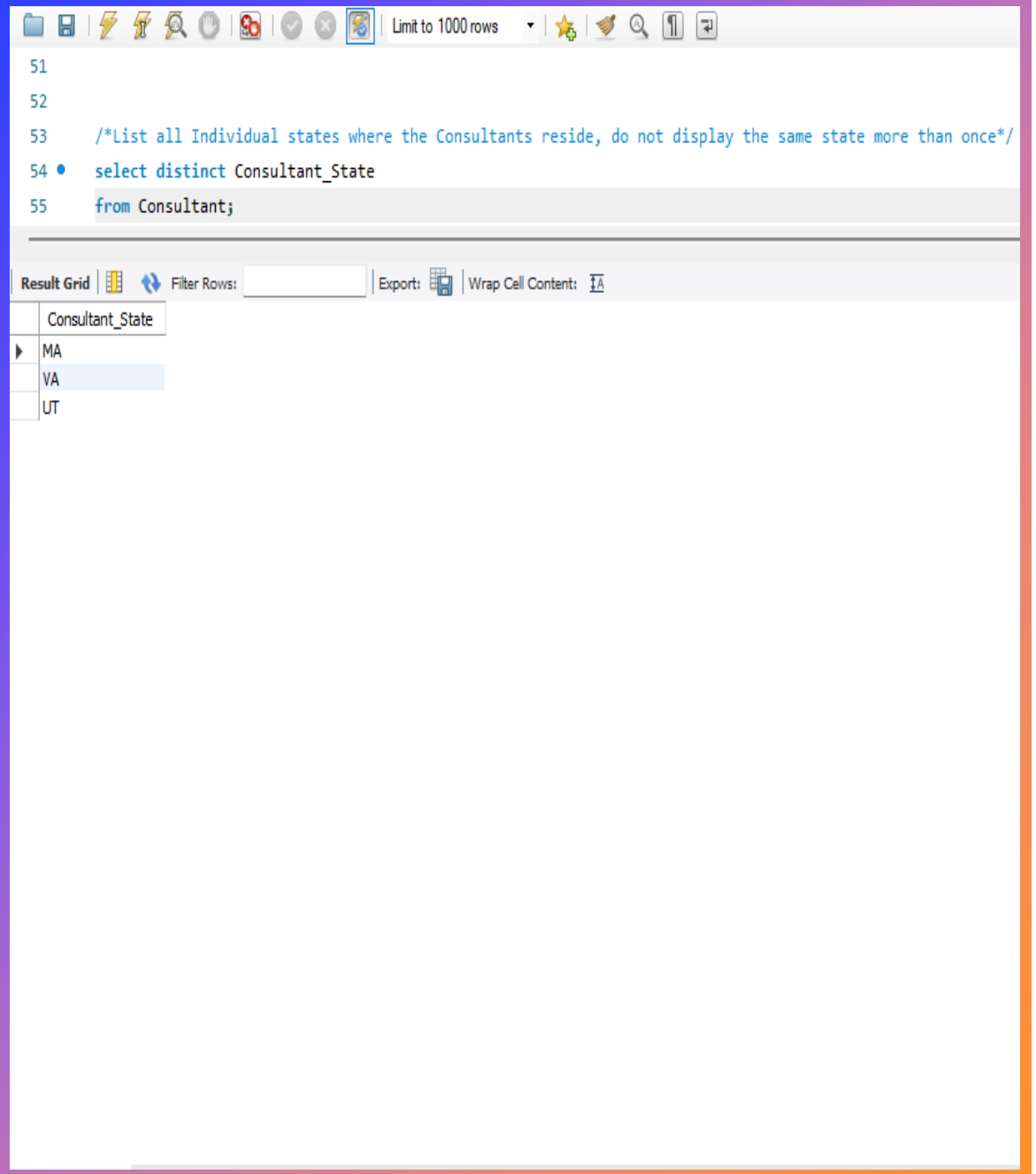
Use outer join to display the Consultant's last name, their ID, and the Evaluator's ID



Using a “group by having” clause, group the consultants by their ID but only those from MA



Using a LIKE keyword, find the Clients whose Contact name begins with T



List all Individual states where the Consultants reside, do not display the same state more than once

USEFUL ADDITIONS

FEEDBACK AND COMMENTS ABOUT CLIENT

- Being able to leave comments and feedback about certain clients and how the projects went while working with them would be useful in order to decide on how to go about business with them later down the road. Not only would it be a good indicator of what clients work well, it could also be useful in order to show who are returning customers.
- Although it would add an additional table, it would also serve as a resource for more information on the clients that are good to work with.

TOO MANY PROJECTS ASSIGNED TO TOO LITTLE OF A CREW

- By using 1:M on so many people alone, we are stretching employees too thin
- It would make sense assigning managers based on certain certifications, for them to be better suited on certain projects, rather than have them work on many projects regardless of certifications.

THE SRC CONSULTATION PRESENTATION

THANK YOU

Any Questions?