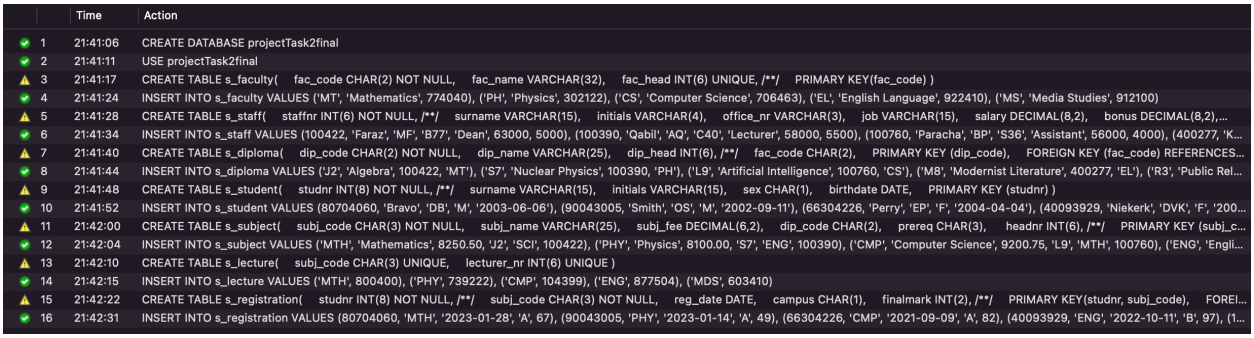
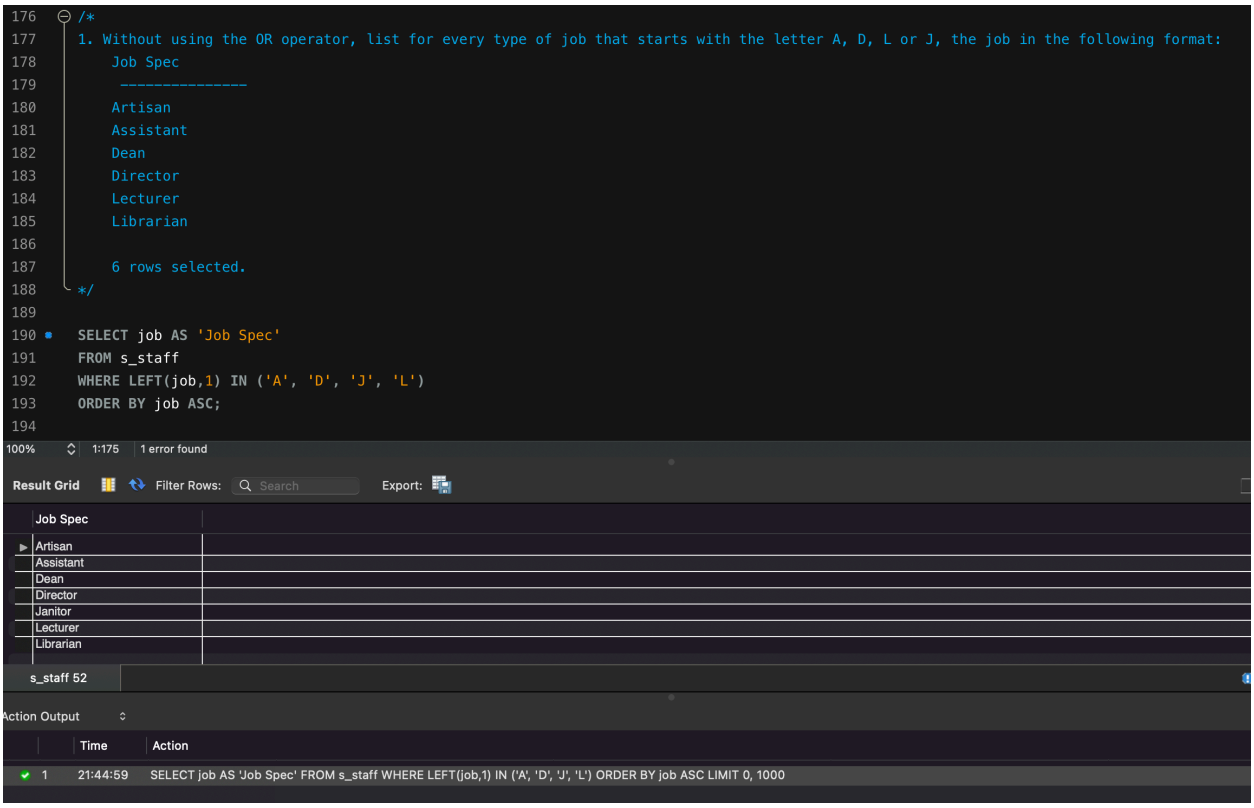
Creating tables and inserting values



	Time	Action
1	21:41:06	CREATE DATABASE projectTask2final
2	21:41:11	USE projectTask2final
3	21:41:17	CREATE TABLE s_faculty(fac_code CHAR(2) NOT NULL, fac_name VARCHAR(32), fac_head INT(6) UNIQUE, /**/ PRIMARY KEY(fac_code))
4	21:41:24	INSERT INTO s_faculty VALUES ('MT', 'Mathematics', 774040), ('PH', 'Physics', 302122), ('CS', 'Computer Science', 706463), ('EL', 'English Language', 922410), ('MS', 'Media Studies', 912100)
5	21:41:28	CREATE TABLE s_staff(staffnr INT(6) NOT NULL, /**/ surname VARCHAR(15), initials VARCHAR(4), office_nr VARCHAR(3), job VARCHAR(15), salary DECIMAL(8,2), bonus DECIMAL(8,2),...
6	21:41:34	INSERT INTO s_staff VALUES (100422, 'Faraz', 'MF', 'B77', 'Dean', 63000, 5000), (100390, 'Qabil', 'AQ', 'C40', 'Lecturer', 58000, 5500), (100760, 'Paracha', 'BP', 'S36', 'Assistant', 56000, 4000), (400277, 'K...
7	21:41:40	CREATE TABLE s_diploma(dip_code CHAR(2) NOT NULL, dip_name VARCHAR(25), dip_head INT(6), /**/ fac_code CHAR(2), PRIMARY KEY (dip_code), FOREIGN KEY (fac_code) REFERENCES...
8	21:41:44	INSERT INTO s_diploma VALUES ('J2', 'Algebra', 100422, 'MT'), ('S7', 'Nuclear Physics', 100390, 'PH'), ('L9', 'Artificial Intelligence', 100760, 'CS'), ('M8', 'Modernist Literature', 400277, 'EL'), ('R3', 'Public Rel...
9	21:41:48	CREATE TABLE s_student(studnr INT(8) NOT NULL, /**/ surname VARCHAR(15), initials VARCHAR(15), sex CHAR(1), birthdate DATE, PRIMARY KEY (studnr))
10	21:41:52	INSERT INTO s_student VALUES (80704060, 'Bravo', 'DB', 'M', '2003-06-06'), (90043005, 'Smith', 'OS', 'M', '2002-09-11'), (66304226, 'Perry', 'EP', 'F', '2004-04-04'), (40093929, 'Niekerk', 'DVK', 'F', '200...
11	21:42:00	CREATE TABLE s_subject(subj_code CHAR(3) NOT NULL, subj_name VARCHAR(25), subj_fee DECIMAL(6,2), dip_code CHAR(2), prereq CHAR(3), headnr INT(6), /**/ PRIMARY KEY (subj_c...
12	21:42:04	INSERT INTO s_subject VALUES ('MTH', 'Mathematics', 8250.50, 'J2', 'SCI', 100422), ('PHY', 'Physics', 8100.00, 'S7', 'ENG', 100390), ('CMP', 'Computer Science', 9200.75, 'L9', 'MTH', 100760), ('ENG', 'Engli...
13	21:42:10	CREATE TABLE s_lecture(subj_code CHAR(3) UNIQUE, lecturer_nr INT(6) UNIQUE)
14	21:42:15	INSERT INTO s_lecture VALUES ('MTH', 800400), ('PHY', 739222), ('CMP', 104399), ('ENG', 877504), ('MDS', 603410)
15	21:42:22	CREATE TABLE s_registration(studnr INT(8) NOT NULL, /**/ subj_code CHAR(3) NOT NULL, reg_date DATE, campus CHAR(1), finalmark INT(2), /**/ PRIMARY KEY(studnr, subj_code), FOREI...
16	21:42:31	INSERT INTO s_registration VALUES (80704060, 'MTH', '2023-01-28', 'A', 67), (90043005, 'PHY', '2023-01-14', 'A', 49), (66304226, 'CMP', '2021-09-09', 'A', 82), (40093929, 'ENG', '2022-10-11', 'B', 97), (1...

Q1)



```
/*
1. Without using the OR operator, list for every type of job that starts with the letter A, D, L or J, the job in the following format:
    Job Spec
     ---------------
    Artisan
    Assistant
    Dean
    Director
    Lecturer
    Librarian

    6 rows selected.
*/

SELECT job AS 'Job Spec'
FROM s_staff
WHERE LEFT(job,1) IN ('A', 'D', 'J', 'L')
ORDER BY job ASC;
```

100% 1:175 1 error found

Result Grid Filter Rows: Search Export:

Job Spec
Artisan
Assistant
Dean
Director
Janitor
Lecturer
Librarian

s_staff 52

Action Output

	Time	Action
1	21:44:59	SELECT job AS 'Job Spec' FROM s_staff WHERE LEFT(job,1) IN ('A', 'D', 'J', 'L') ORDER BY job ASC LIMIT 0, 1000

Q2)

```
/* 2. Select for every type of job, the average annual salary in the format as seen below.
Only display jobs where the average annual salary is more than $50,000.
Ensure that the results are sorted according to the average annual salary.
   Job Spec        AVG_ANN_SAL
   --------------- ------------
ARTISAN             $0057000.00
LECTURER            $0089600.00
RECTOR              $0132000.00
DEAN                $0162000.00
DIRECTOR            $0174000.00
SPECIALIST          $0240000.00
6 rows selected.
*/

SELECT job AS 'Job Spec', CONCAT('$', (AVG(salary + bonus))) AS 'AVG_ANN_SAL'
FROM s_staff
GROUP BY job
HAVING AVG(salary + bonus) > 50000
ORDER BY AVG(salary + bonus) ASC;
```

100% 18:193 1 error found

Result Grid Filter Rows: Search Export:

Job Spec	AVG_ANN_SAL
Assistant	$60000.000000
Lecturer	$63500.000000
Dean	$68000.000000

Result 54

Action Output

	Time	Action
1	21:45:59	SELECT job AS 'Job Spec', CONCAT('$', (AVG(salary + bonus))) AS 'AVG_ANN_SAL' FROM s_staff GROUP BY job HAVING AV

Q3)

```
/* 3. List for every diploma, the name of the diploma, the surname and initials of the head of the diploma,
and the number of subjects presented in the diploma. List the results as seen below :

   DIPLOMA                  HEAD                 Nr of Subjects
   ------------------------ -------------------- --------------
   COST AND MANAGEMENT      Richmond, M                       7
   INFORMATION TECHNOLOGY   Pretorius, BB                    12
*/

SELECT d.dip_name AS 'DIPLOMA', CONCAT(s.surname, ', ', s.initials) AS 'HEAD', COUNT(*) AS 'Nr of Subjects'
FROM s_diploma d
JOIN s_staff s ON d.dip_head = s.staffnr
JOIN s_subject su ON d.dip_code = su.dip_code
GROUP BY d.dip_code
ORDER BY d.dip_name;
```

100% 22:213 1 error found

Result Grid Filter Rows: Search Export:

DIPLOMA	HEAD	Nr of Subjec...
Algebra	Faraz, MF	1
Artificial Intelligence	Paracha, BP	2
Modernist Literature	Kashif, SK	1
Nuclear Physics	Qabil, AQ	1
Public Relations	Qadir, AQ	1

Result 55

Action Output

	Time	Action
1	21:47:48	SELECT d.dip_name AS 'DIPLOMA', CONCAT(s.surname, ', ', s.initials) AS 'HEAD', COUNT(*) AS 'Nr of Subjects' FROM s_diploma d JOIN s_staff s ON d

Q4)

```
/* 4. List the prerequisite of the DEVELOPMENT SOFTWARE subjects as follows:
   DS Requirements
   ----------------------------------------------------------------
   The prerequisite of Development Software 2 is Development
   Software 1
   The prerequisite of Development Software 3 is Development
   Software 2
*/

SELECT CONCAT('The prerequisite of ', s.subj_name, ' is ', p.subj_name) AS 'DS Requirements'
FROM s_subject s
JOIN s_subject p ON s.prereq = p.subj_code
WHERE s.subj_code LIKE 'DS%';
```

100% 22:231

Result Grid Filter Rows: Search Export:

DS Requirements
The prerequisite of Development Software is Mathematics

Result 56

Action Output

	Time	Action
1	21:48:41	SELECT CONCAT('The prerequisite of ', s.subj_name, ' is ', p.subj_name) AS 'DS Requirements' FROM s_subject s JOIN s_subje

Q5)

```
/* 5. List all students that are registered at the same campus as GM MKASI,
in the exact format as displayed below.
Pay attention to the alignment of the surnames directly below each other (not using spaces!).

   Registered Students
   ------------------------------------------------------------------------
   C   BARNARD, a male has registered on the twenty-first of May 1976
   GM  MKASI, a female has registered on the twenty-first of May 1976
   JH  SMUTS, a male has registered on the twelfth of January 1970
   VM  SMITH, a male has registered on the third of December 1976
*/
```

```
260  SELECT CONCAT(UPPER(SUBSTR(s.surname, 1, 2)), ' ', s.surname, ', a ',
261  CASE s.sex
262    WHEN 'M' THEN 'male'
263    WHEN 'F' THEN 'female'
264  end, ' has registered on the ',
265  CASE DATE_FORMAT(r.reg_date, '%e')
266    WHEN '1' THEN 'first' WHEN '2' THEN 'second' WHEN '3' THEN 'third' WHEN '4' THEN 'fourth'
267    WHEN '5' THEN 'fifth' WHEN '6' THEN 'sixth' WHEN '7' THEN 'seventh' WHEN '8' THEN 'eighth'
268    WHEN '9' THEN 'ninth' WHEN '10' THEN 'tenth' WHEN '11' THEN 'eleventh' WHEN '12' THEN 'twelfth'
269    WHEN '13' THEN 'thirteenth' WHEN '14' THEN 'fourteenth' WHEN '15' THEN 'fifteenth' WHEN '16' THEN 'sixteenth'
270    WHEN '17' THEN 'seventeenth' WHEN '18' THEN 'eighteenth' WHEN '19' THEN 'nineteenth' WHEN '20' THEN 'twentieth'
271    WHEN '21' THEN 'twenty-first' WHEN '22' THEN 'twenty-second' WHEN '23' THEN 'twenty-third' WHEN '24' THEN 'twenty-fourth'
272    WHEN '25' THEN 'twenty-fifth' WHEN '26' THEN 'twenty-sixth' WHEN '27' THEN 'twenty-seventh' WHEN '28' THEN 'twenty-eighth'
273    WHEN '29' THEN 'twenty-ninth' WHEN '30' THEN 'thirtieth' WHEN '31' THEN 'thirty-first'
274  end,
275  ' of ', date_format(reg_date, '%M %Y'))
276    AS 'Registered Students'
277    FROM s_student s
278    JOIN s_registration r ON s.studnr = r.studnr
279  WHERE r.campus = (
280      SELECT campus
281      FROM s_student
282      JOIN s_registration ON s_student.studnr = s_registration.studnr
283      WHERE s_student.surname = 'MKASI'
284  )
285    ORDER BY s.surname;
286
```

75% 3:258

Result Grid | Filter Rows: Search | Export:

Registered Students
BR Bravo, a male has registered on the twenty-eighth of January 2023
MK MKASI, a female has registered on the tenth of October 2021
PE Perry, a female has registered on the ninth of September 2021
SM Smith, a male has registered on the fourteenth of January 2023

Result 57

Action Output

	Time	Action
1	21:51:37	SELECT CONCAT(UPPER(SUBSTR(s.surname, 1, 2)), ' ', s.surname, ', a ', CASE s.sex WHEN 'M' THEN 'male' WHEN 'F' THEN 'female'

Q6)

```
/* 6. Insert into a new table called DIP_VIEW, data using a query. After inserting,
you should be able to view the contents of the table with column names as displayed below:

SQL> SELECT *
4
2 FROM dip_view;
   HEAD_OF_DIPLOMA      DIPLOMA_NAME                AVG_FEE
   -------------------- ------------------------ ----------
   M RICHMOND           COST AND MANAGEMENT              800
   BB PRETORIUS         INFORMATION TECHNOLOGY    1483.33333
*/

CREATE TABLE DIP_VIEW AS
SELECT UPPER(s_staff.surname) AS HEAD_OF_DIPLOMA, UPPER(s_diploma.dip_name) AS DIPLOMA_NAME,
AVG(s_subject.subj_fee) AS AVG_FEE
FROM s_staff
JOIN s_diploma ON s_staff.staffnr = s_diploma.dip_head
JOIN s_subject ON s_subject.dip_code = s_diploma.dip_code
GROUP BY s_diploma.dip_code;
```

8:308

Result Grid | Filter Rows: Search | Export:

HEAD_OF_DIPLOMA	DIPLOMA_NAME	AVG_FEE
FARAZ	ALGEBRA	8250.500000
PARACHA	ARTIFICIAL INTELLIGENCE	8600.375000
KASHIF	MODERNIST LITERATURE	6300.990000
QADIR	PUBLIC RELATIONS	5880.400000
QABIL	NUCLEAR PHYSICS	8100.000000

DIP_VIEW 58

Action Output

	Time	Action
1	21:52:35	CREATE TABLE DIP_VIEW AS SELECT UPPER(s_staff.surname) AS HEAD_OF_DIPLOMA, UPPER(s_diploma.dip_name)
2	21:52:39	SELECT * FROM DIP_VIEW LIMIT 0, 1000

Q7)

```
/* 7. List the details of the five staff members, who earn the highest salaries,
in the format, as seen below. Do not take undefined/non-existing values into account.

   Highest earning Employees
   ------------------------------------------------------------
   J BOND, a Specialist, earns R360000
   FJ ENGELBRECHT, a Director, earns R240000
   JB MASEKO, a Dean, earns R180000
   TR BUYS, a Dean, earns R144000
   FR DU PLESSIS, a Director, earns R144000
*/

SELECT CONCAT(initials, ' ', UPPER(surname), ', a ', job, ', earns R', ROUND(salary)) AS 'Highest Earning Employees'
FROM s_staff
WHERE salary IS NOT NULL
ORDER BY salary DESC
LIMIT 5;
```

21:307

Result Grid | Filter Rows: Search | Export: | Fetch rows:

Highest Earning Employees
MF FARAZ, a Dean, earns R63000
AQ QABIL, a Lecturer, earns R58000
BP PARACHA, a Assistant, earns R56000
SK KASHIF, a Artisan, earns R24300
AS SALEH, a Receptionist, earns R5500

Result 59

Action Output

	Time	Action
1	21:53:43	SELECT CONCAT(initials, ' ', UPPER(surname), ', a ', job, ', earns R', ROUND(salary)) AS 'Highest Earning Employees' FROM s_staff WHERE salary IS N

- Mikaeel Faraz Safdar 8074689
  Amine Qabil 8050910
  Muhammad Shaheer Kashif 7877146
  Muhammad Bisham Adil Paracha 7935407