Assignment 2b Grading

```
SQL> --========================== START RUN ====================================---
SQL> @cgh_queries.sql
SQL> /*
SQL>
SQL> Database 2021 S2 Assignment 2B
SQL>
SQL> SQL SELECT Sample Answers
SQL>
SQL>*/
SQL>
SQL> /* Q1 */
SQL> SELECT
  2      doctor_title,
  3      doctor_fname,
  4      doctor_lname,
  5      doctor_phone
  6  FROM
  7      cgh.doctor
  8      NATURAL JOIN cgh.doctor_speciality
  9      NATURAL JOIN cgh.speciality
 10  WHERE
 11      upper(speciality.spec_description) = 'ORTHOPEDIC SURGERY'
 12  ORDER BY
 13      doctor_lname,
 14      doctor_fname;

DO DOCTOR_FNAME    DOCTOR_LNAME    DOCTOR_PHO
-- --------------- --------------- ----------
Mr Graham          Brown           1234567899
Dr Robert          Lu              1515141312
Dr Juixan          Wei             6622544311
Dr Mary            Wei             6655443377

SQL>
SQL> /* Q2 */
SQL>
SQL> SELECT
  2      item_code,
  3      item_description,
  4      item_stock,
  5      cc_title
  6  FROM
  7      cgh.item
  8      NATURAL JOIN cgh.costcentre
  9  WHERE
 10      lower(item_description) LIKE '%disposable%'
 11      AND item_stock > 50
 12  ORDER BY
 13      item_code;

ITEM_ ITEM_DESCRIPTION                                   ITEM_STOCK CC_TITLE
----- ------------------------------------------------- ---------- ------------------------
ST252 Sigmoidoscope Tube Heine Disposable 25s 250x20mm          100 Laboratory Supplies
TN010 Thermometer Nextemp Disposable                            500 Laboratory Supplies

SQL>
```

```
SQL> /* Q3 */
SQL>
SQL> SELECT
  2      patient_id,
  3      ltrim(patient_fname
  4      || ' '
  5      || patient_lname)                              AS "Patient Name",
  6      to_char(adm_date_time, 'dd-Mon-yyyy hh24:mi') AS admdatetime,
  7      doctor_title
  8      || ' '
  9      || ltrim(doctor_fname
 10      || ' '
 11      || doctor_lname)                               AS "Doctor Name"
 12  FROM
 13           cgh.patient
 14      NATURAL JOIN cgh.admission
 15      NATURAL JOIN cgh.doctor
 16  WHERE
 17      adm_date_time BETWEEN TO_DATE('11-Sep-2021 10:00', 'dd-Mon-yyyy hh24:mi')
 18                        AND TO_DATE('14-Sep-2021 18:00', 'dd-Mon-yyyy hh24:mi')
 19  ORDER BY
 20      adm_date_time;

PATIENT_ID Patient Name                   ADMDATETIME           Doctor Name
---------- ------------------------------ --------------------- --------------------------------
    100114 Florri MacGillespie            11-Sep-2021 10:00     Dr Tedi Jeeves
    100116 Matthai                        13-Sep-2021 10:00     Mr Erich Argabrite
    100118 Carita Edscer                  13-Sep-2021 13:00     Mr Erich Argabrite
    100110 Abra Baltzar                   14-Sep-2021 10:00     Mr Digman

SQL>
SQL> /* Q4 */
SQL>
SQL> SELECT
  2      proc_code,
  3      proc_name,
  4      proc_description,
  5      TO_CHAR(proc_std_cost, '$99990.99') AS standardcost
  6  FROM
  7      cgh.procedure
  8  WHERE
  9      proc_std_cost < (
 10          SELECT
 11              AVG(proc_std_cost)
 12          FROM
 13              cgh.procedure
 14      )
 15  ORDER BY
 16      proc_std_cost DESC;

 PROC_CODE PROC_NAME                     PROC_DESCRIPTION                              STANDARDCO
---------- ------------------------------ --------------------------------------------- ----------
     43114 Heart surgery                  Insertion of a pacemaker                         $120.66
     29844 Tonsillectomy                  Removal of tonsils                               $109.28
     23432 Mental health                  Counselling for children                          $98.00
     32266 Hemoglobin concentration       Measuring oxygen carrying protein in blood        $76.00
```

```
     15510 X-ray, Left knee              Left knee Bi-Lateral 2D Scan                    $75.00
     15509 X-ray, Right knee             Right knee Bi-Lateral 2D Scan                   $75.00
     33335 Eye test                      Test for eye problems                           $70.45
     19887 Colonoscopy                   Bowel examination                               $68.00
     71432 Genetic testing               Screening for genetically carried diseases      $65.20
     40099 Scratch test                  Allergy test on skin surface                    $40.00
     40100 Skin surgery                  Removal of mole                                 $33.50
     65554 Blood screen                  Full blood test                                 $30.00

12 rows selected.

SQL>
SQL> /* Q5 */
SQL>
SQL> SELECT
  2      patient_id,
  3      patient_lname,
  4      patient_fname,
  5      TO_CHAR(patient_dob, 'dd-Mon-yyyy') AS dob,
  6      COUNT(*) AS numberadmissions
  7  FROM
  8      cgh.patient
  9      NATURAL JOIN cgh.admission
 10  GROUP BY
 11      patient_id,
 12      patient_lname,
 13      patient_fname,
 14      patient_dob
 15  HAVING
 16      COUNT(*) > 2
 17  ORDER BY
 18      COUNT(*) DESC,
 19      patient_dob;

PATIENT_ID PATIENT_LNAME   PATIENT_FNAME   DOB                  NUMBERADMISSIONS
---------- --------------- --------------- -------------------- ----------------
    102345 Lee             Wendy           25-May-1981                         4
    100118 Edscer          Carita          06-Dec-1994                         4
    100128 Coskerry        June            16-Aug-1992                         3
    100114 MacGillespie    Florri          22-Oct-1992                         3

SQL>
SQL> /* Q6 */
SQL>
SQL> SELECT
  2      adm_no,
  3      patient_id,
  4      patient_fname,
  5      patient_lname,
  6      trunc(adm_discharge - adm_date_time)
  7      || ' days '
  8      || ltrim(TO_CHAR((((adm_discharge - adm_date_time) - trunc(adm_discharge - adm_date_time
  9      ))) * 24, '90.9'))
 10      || ' hrs' AS staylength
 11  FROM
 12      cgh.patient
```

```
 13      NATURAL JOIN cgh.admission
 14  WHERE
 15      ( adm_discharge - adm_date_time ) > (
 16          SELECT
 17              AVG((adm_discharge - adm_date_time))
 18          FROM
 19              cgh.admission
 20      )
 21  ORDER BY
 22      adm_no;

    ADM_NO PATIENT_ID PATIENT_FNAME   PATIENT_LNAME   STAYLENGTH
---------- ---------- --------------- --------------- ----------------------------------------------------
    100010     100110 Abra            Baltzar         7 days 3.0 hrs
    100050     100118 Carita          Edscer          8 days 3.0 hrs
    100070     100140 Gwenora         Culter          7 days 0.0 hrs
    100080     100152 Neils           Gravatt         15 days 0.0 hrs
    100100     100187 Sebastien       Bodsworth       10 days 3.0 hrs
    100120     100175 Doralin         O'Brogane       10 days 2.0 hrs
    100190     100116                 Matthai         13 days 1.0 hrs
    100200     100118 Carita          Edscer          12 days 22.0 hrs
    100230     100140 Gwenora         Culter          14 days 3.0 hrs

9 rows selected.

SQL>
SQL> /* Q7 */
SQL>
SQL> SELECT
  2      proc_code,
  3      proc_name,
  4      proc_description,
  5      proc_time,
  6      proc_std_cost,
  7      TO_CHAR((
  8          SELECT
  9              AVG(adprc_pat_cost)
 10          FROM
 11              cgh.adm_prc
 12          WHERE
 13              proc_code = p.proc_code
 14          GROUP BY
 15              proc_code
 16      ) - proc_std_cost, 'S$99999.00') AS "Procedure Price Differential"
 17  FROM
 18      cgh.procedure p
 19  WHERE
 20      p.proc_code IN (
 21          SELECT
 22              proc_code
 23          FROM
 24              cgh.adm_prc
 25      )
 26  ORDER BY
 27      proc_code;
```

```
 PROC_CODE PROC_NAME                     PROC_DESCRIPTION                                PROC_TIME PROC_STD_COST Procedure
---------- ----------------------------- ---------------------------------------------- ---------- ------------ ----------
     15509 X-ray, Right knee             Right knee Bi-Lateral 2D Scan                          20           75     -$1.63
     32266 Hemoglobin concentration      Measuring oxygen carrying protein in blood             15           76     +$4.00
     43114 Heart surgery                 Insertion of a pacemaker                               45       120.66    +$14.67
     43556 Vascular surgery              Removel of varicose veins                             120        243.1     +$6.90
     49518 Total replacement, Right knee Right knee replacement by artificial joint            180          350    +$13.12
     54132 Plastic surgery               Burn surgery to repair skin                           170          244    +$56.00
     65554 Blood screen                  Full blood test                                        10           30     +$2.00

7 rows selected.

SQL>
SQL> -- OR
SQL>
SQL> SELECT
  2      proc_code,
  3      proc_name,
  4      proc_description,
  5      proc_time,
  6      proc_std_cost,
  7      to_char(AVG(adprc_pat_cost) - proc_std_cost, 'S$99999.00') AS "Procedure Price Differential"
  8  FROM
  9          cgh.procedure
 10      NATURAL JOIN cgh.adm_prc
 11  GROUP BY
 12      proc_code,
 13      proc_name,
 14      proc_description,
 15      proc_time,
 16      proc_std_cost
 17  ORDER BY
 18      proc_code;

 PROC_CODE PROC_NAME                     PROC_DESCRIPTION                                PROC_TIME PROC_STD_COST Procedure
---------- ----------------------------- ---------------------------------------------- ---------- ------------ ----------
     15509 X-ray, Right knee             Right knee Bi-Lateral 2D Scan                          20           75     -$1.63
     32266 Hemoglobin concentration      Measuring oxygen carrying protein in blood             15           76     +$4.00
     43114 Heart surgery                 Insertion of a pacemaker                               45       120.66    +$14.67
     43556 Vascular surgery              Removel of varicose veins                             120        243.1     +$6.90
     49518 Total replacement, Right knee Right knee replacement by artificial joint            180          350    +$13.12
     54132 Plastic surgery               Burn surgery to repair skin                           170          244    +$56.00
     65554 Blood screen                  Full blood test                                        10           30     +$2.00

7 rows selected.

SQL>
SQL> /* Q8 */
SQL>
SQL> SELECT
  2      proc_code,
  3      proc_name,
  4      item_code,
  5      item_description,
  6      TO_CHAR(MAX(it_qty_used), '99') AS max_qty_used
  7  FROM
```

```
 8      cgh.item
 9      NATURAL JOIN cgh.item_treatment
10      NATURAL JOIN cgh.adm_prc
11      NATURAL JOIN cgh.procedure
12  GROUP BY
13      proc_code,
14      proc_name,
15      item_code,
16      item_description
17  UNION
18  SELECT
19      proc_code,
20      proc_name,
21      '---',
22      '---',
23      '---'
24  FROM
25      cgh.procedure
26  WHERE
27      proc_code NOT IN (
28          SELECT DISTINCT
29              proc_code
30          FROM
31              cgh.item
32              NATURAL JOIN cgh.item_treatment
33              NATURAL JOIN cgh.adm_prc
34      )
35  ORDER BY
36      proc_name,
37      item_code;
```

PROC_CODE	PROC_NAME	ITEM_	ITEM_DESCRIPTION	MAX
43111	Angiogram	---	---	---
12055	Appendectomy	---	---	---
65554	Blood screen	OV001	Interlink Vial Access Cannula	1
17122	Childbirth	---	---	---
19887	Colonoscopy	---	---	---
27459	Corneal replacement	---	---	---
33335	Eye test	---	---	---
71432	Genetic testing	---	---	---
43114	Heart surgery	AN002	Std Anaesthetic Pack	1
43114	Heart surgery	AP050	Amethocaine 0.5% 20s Prev Tetracaine 0.5%	1
43114	Heart surgery	OV001	Interlink Vial Access Cannula	2
32266	Hemoglobin concentration	---	---	---
15511	MRI	---	---	---
23432	Mental health	---	---	---
54132	Plastic surgery	AN002	Std Anaesthetic Pack	1
54132	Plastic surgery	BI500	Bupivacaine Inj .5% 10ml Steriamp	1
54132	Plastic surgery	CA002	Catheter i.V. Optiva 22g X 25mm	1
40099	Scratch test	---	---	---
40100	Skin surgery	---	---	---
43112	Thoracic surgery	---	---	---
29844	Tonsillectomy	---	---	---
49518	Total replacement, Right knee	AN002	Std Anaesthetic Pack	1
49518	Total replacement, Right knee	KN056	Right Knee Brace	1

```
     49518 Total replacement, Right knee  SS006 Stainless Steel Pins                              4
     43556 Vascular surgery               AN002 Std Anaesthetic Pack                              1
     43556 Vascular surgery               BI500 Bupivacaine Inj .5% 10ml Steriamp                 2
     15510 X-ray, Left knee               ---   ---                                             ---
     15509 X-ray, Right knee              ---   ---                                             ---

28 rows selected.

SQL>
SQL> -- or using an Outer Join
SQL>
SQL> SELECT
  2      p.proc_code,
  3      p.proc_name,
  4      nvl(i.item_code, '---')                       AS item_code,
  5      nvl(i.item_description, '---')                AS item_description,
  6      nvl(to_char(MAX(it.it_qty_used), '99'), '---') AS max_qty_used
  7  FROM
  8      cgh.procedure      p
  9      LEFT OUTER JOIN (
 10              cgh.adm_prc ap
 11          JOIN cgh.item_treatment it
 12          ON ap.adprc_no = it.adprc_no
 13          JOIN cgh.item           i
 14          ON i.item_code = it.item_code
 15      )
 16      ON p.proc_code = ap.proc_code
 17  GROUP BY
 18      p.proc_code,
 19      p.proc_name,
 20      nvl(i.item_code, '---'),
 21      nvl(i.item_description, '---')
 22  ORDER BY
 23      proc_name,
 24      item_code;

 PROC_CODE PROC_NAME                     ITEM_ ITEM_DESCRIPTION                                    MAX
---------- ------------------------------ ----- ---------------------------------------------------- ---
     43111 Angiogram                      ---   ---                                                  ---
     12055 Appendectomy                   ---   ---                                                  ---
     65554 Blood screen                   OV001 Interlink Vial Access Cannula                         1
     17122 Childbirth                     ---   ---                                                  ---
     19887 Colonoscopy                    ---   ---                                                  ---
     27459 Corneal replacement            ---   ---                                                  ---
     33335 Eye test                       ---   ---                                                  ---
     71432 Genetic testing                ---   ---                                                  ---
     43114 Heart surgery                  AN002 Std Anaesthetic Pack                                  1
     43114 Heart surgery                  AP050 Amethocaine 0.5% 20s Prev Tetracaine 0.5%             1
     43114 Heart surgery                  OV001 Interlink Vial Access Cannula                         2
     32266 Hemoglobin concentration       ---   ---                                                  ---
     15511 MRI                            ---   ---                                                  ---
     23432 Mental health                  ---   ---                                                  ---
     54132 Plastic surgery                AN002 Std Anaesthetic Pack                                  1
     54132 Plastic surgery                BI500 Bupivacaine Inj .5% 10ml Steriamp                     1
     54132 Plastic surgery                CA002 Catheter i.V. Optiva 22g X 25mm                       1
     40099 Scratch test                   ---   ---                                                  ---
```

```
     40100 Skin surgery                  ---   ---                                    ---
     43112 Thoracic surgery              ---   ---                                    ---
     29844 Tonsillectomy                 ---   ---                                    ---
     49518 Total replacement, Right knee  AN002 Std Anaesthetic Pack                    1
     49518 Total replacement, Right knee  KN056 Right Knee Brace                       1
     49518 Total replacement, Right knee  SS006 Stainless Steel Pins                   4
     43556 Vascular surgery              AN002 Std Anaesthetic Pack                    1
     43556 Vascular surgery              BI500 Bupivacaine Inj .5% 10ml Steriamp       2
     15510 X-ray, Left knee              ---   ---                                    ---
     15509 X-ray, Right knee             ---   ---                                    ---

28 rows selected.

SQL>
SQL>
SQL> /* 9a - FIT2094 only*/
SQL> SELECT DISTINCT
  2      ap.proc_code,
  3      proc_name,
  4      ltrim(nvl(to_char(doctor_id, '9999'), '----'))            AS doctor_id,
  5      CASE
  6          WHEN ( doctor_fname
  7                 || doctor_lname ) IS NULL THEN
  8              'Technician'
  9          ELSE
 10              doctor_title
 11              || ' '
 12              || ltrim(doctor_fname
 13                       || ' '
 14                       || doctor_lname)
 15      END                                                       AS "Doctor Name",
 16      to_char(adprc_pat_cost,'$9990.99')                        AS max_cost
 17  FROM
 18           cgh.adm_prc ap
 19      JOIN cgh.procedure    p
 20      ON ap.proc_code = p.proc_code
 21      LEFT OUTER JOIN cgh.doctor       d
 22      ON d.doctor_id = ap.perform_dr_id
 23  WHERE
 24      ( ap.proc_code, adprc_pat_cost ) IN (
 25          SELECT
 26              proc_code,
 27              MAX(adprc_pat_cost)
 28          FROM
 29              cgh.adm_prc
 30          GROUP BY
 31              proc_code
 32      )
 33  ORDER BY
 34      ap.proc_code,
 35      doctor_id;

 PROC_CODE PROC_NAME                     DOCTO Doctor Name                        MAX_COST
---------- ------------------------------ ----- ---------------------------------- ---------
     15509 X-ray, Right knee              ----  Technician                          $75.00
     32266 Hemoglobin concentration       ----  Technician                          $80.00
```

```
     43114 Heart surgery                  1005  Mr Erich Argabrite                  $150.00
     43556 Vascular surgery               1005  Mr Erich Argabrite                  $250.00
     49518 Total replacement, Right knee  7890  Dr Mary Wei                         $400.00
     54132 Plastic surgery                1084  Ms Rollie Whayman                   $300.00
     65554 Blood screen                   ----  Technician                           $35.00

7 rows selected.

SQL>
SQL>
SQL> /* Q9b - FIT3171 only*/
SQL>
SQL> SELECT
  2      adprc_no,
  3      proc_code,
  4      adm_no,
  5      patient_id,
  6      prcdatetime,
  7      to_char(total, '$999990.99') AS totalcost
  8  FROM
  9      (
 10          SELECT
 11              adprc_no,
 12              proc_code,
 13              adm_no,
 14              patient_id,
 15              to_char(adprc_date_time, 'dd-Mon-yyyy hh24:mi') AS prcdatetime,
 16              SUM(adprc_pat_cost + adprc_items_cost)          AS total
 17          FROM
 18                   cgh.adm_prc
 19              NATURAL JOIN cgh.admission
 20          GROUP BY
 21              adprc_no,
 22              proc_code,
 23              adm_no,
 24              patient_id,
 25              adprc_date_time
 26          ORDER BY
 27              total DESC
 28      ) a
 29  WHERE
 30      9 = (
 31          SELECT
 32              COUNT(DISTINCT total)
 33          FROM
 34              (
 35                  SELECT
 36                      proc_code,
 37                      adm_no,
 38                      SUM(adprc_pat_cost + adprc_items_cost) AS total
 39                  FROM
 40                           cgh.adm_prc
 41                      NATURAL JOIN cgh.admission
 42                  GROUP BY
 43                      adprc_no,
 44                      proc_code,
```

```
 45                     adm_no,
 46                     patient_id
 47                 ORDER BY
 48                     total DESC
 49             ) a2
 50         WHERE
 51             a2.total >= a.total
 52     )
 53  ORDER BY
 54      adprc_no;

  ADPRC_NO  PROC_CODE     ADM_NO PATIENT_ID PRCDATETIME                TOTALCOST
---------- ---------- ---------- ---------- ------------------------- -----------
      1040      15509     100050     100118 02-Jul-2021 14:00              $75.00
      1140      15509     100270     100118 14-Oct-2021 13:00              $75.00

SQL> --============================ END RUN ======================================---
SQL> set echo off
```