Case Study 1: Government Hospital Data Warehouse

Tasks [1]:

```
DROP TABLE service CASCADE CONSTRAINTS;

DROP TABLE doctor CASCADE CONSTRAINTS;

DROP TABLE patient CASCADE CONSTRAINTS;

DROP TABLE assignment CASCADE CONSTRAINTS;

DROP TABLE clinic CASCADE CONSTRAINTS;

CREATE TABLE assignment (
   assignment_id               NUMBER(5, 0) NOT NULL,
   patient_service_start_date   DATE NOT NULL,
   patient_service_end_date     DATE NOT NULL,
   patient_id                  NUMBER(5, 0) NOT NULL,
   service_id                   NUMBER(5, 0) NOT NULL
);

COMMENT ON COLUMN assignment.assignment_id IS
   'ID of Assignment';

COMMENT ON COLUMN assignment.patient_service_start_date IS
   'Start date of service of Assignment';

COMMENT ON COLUMN assignment.patient_service_end_date IS
   'End date of service of Assignment';

COMMENT ON COLUMN assignment.patient_id IS
   'ID of patient in Assignment';

COMMENT ON COLUMN assignment.service_id IS
   'ID of service in Assignment';

ALTER TABLE assignment ADD CONSTRAINT assignment_pk PRIMARY KEY (
assignment_id );

CREATE TABLE service (
   service_id     NUMBER(5, 0) NOT NULL,
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    service_name   VARCHAR2(50) NOT NULL,
    service_cost   NUMBER(10, 2) NOT NULL,
    staff_id       NUMBER(5, 0) NOT NULL,
    hospital_id    NUMBER(5, 0) NOT NULL
);

COMMENT ON COLUMN service.service_id IS
    'ID of Service';

COMMENT ON COLUMN service.service_name IS
    'Name of Service';

COMMENT ON COLUMN service.service_cost IS
    'Cost involved in Service';

COMMENT ON COLUMN service.staff_id IS
    'Staff Id on involved in Service';

COMMENT ON COLUMN service.hospital_id IS
    'Hospital ID involved in Service';

ALTER TABLE service ADD CONSTRAINT service_pk PRIMARY KEY ( service_id );

CREATE TABLE patient (
    patient_id                NUMBER(5, 0) NOT NULL,
    patient_name              VARCHAR2(50) NOT NULL,
    patient_age               NUMBER(5, 2) NOT NULL,
    patient_ph_no             NUMBER(10, 0) NOT NULL,
    patient_address           VARCHAR2(50) NOT NULL,
    patient_nationality       VARCHAR2(50) NOT NULL,
    patient_emergency_contact   NUMBER(10, 0) NOT NULL
);

COMMENT ON COLUMN patient.patient_id IS
    'ID of Patient';

COMMENT ON COLUMN patient.patient_name IS
    'Name of patient';

COMMENT ON COLUMN patient.patient_age IS
    'Age of patient';

COMMENT ON COLUMN patient.patient_ph_no IS
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```
    'Phone number of patient';

COMMENT ON COLUMN patient.patient_address IS
    'Address of patient';

COMMENT ON COLUMN patient.patient_nationality IS
    'Nationality of patient';

COMMENT ON COLUMN patient.patient_emergency_contact IS
    'Emergency contact of patient';

ALTER TABLE patient ADD CONSTRAINT patient_pk PRIMARY KEY ( patient_id );

CREATE TABLE doctor (
    staff_id      NUMBER(5, 0) NOT NULL,
    staff_name    VARCHAR2(50) NOT NULL,
    staff_ph_no   NUMBER(10, 0) NOT NULL
);

COMMENT ON COLUMN doctor.staff_id IS
    'ID of Doctor';

COMMENT ON COLUMN doctor.staff_name IS
    'Name of Doctor';

COMMENT ON COLUMN doctor.staff_ph_no IS
    'Phone No of Doctor';

ALTER TABLE doctor ADD CONSTRAINT doctor_pk PRIMARY KEY ( staff_id );

CREATE TABLE clinic (
    hospital_id        NUMBER(5, 0) NOT NULL,
    hospital_name      VARCHAR2(50) NOT NULL,
    hospital_address   VARCHAR2(50) NOT NULL,
    suburb             VARCHAR2(20) NOT NULL,
    postcode           NUMBER(10, 0) NOT NULL
);

COMMENT ON COLUMN clinic.hospital_id IS
    'ID of Hospital';

COMMENT ON COLUMN clinic.hospital_name IS
    'Name of Hospital';
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```
COMMENT ON COLUMN clinic.hospital_address IS
   'Address of Hospital';

COMMENT ON COLUMN clinic.suburb IS
   'Suburb of Hospital';

COMMENT ON COLUMN clinic.postcode IS
   'Postcode of Hospital';

ALTER TABLE clinic ADD CONSTRAINT clinic_pk PRIMARY KEY ( hospital_id );

ALTER TABLE assignment
   ADD CONSTRAINT assignment_service FOREIGN KEY ( service_id )
      REFERENCES service ( service_id );

ALTER TABLE assignment
   ADD CONSTRAINT assignment_patent FOREIGN KEY ( patient_id )
      REFERENCES patient ( patient_id );

ALTER TABLE service
   ADD CONSTRAINT service_clinic FOREIGN KEY ( hospital_id )
      REFERENCES clinic ( hospital_id );

ALTER TABLE service
   ADD CONSTRAINT service_doctor FOREIGN KEY ( staff_id )
      REFERENCES doctor ( staff_id );

DROP SEQUENCE patient_seq;

CREATE SEQUENCE patient_seq START WITH 100 INCREMENT BY 1;

INSERT INTO patient VALUES (
   patient_seq.NEXTVAL,
   'John Smith',
   23,
   0403573363,
   '37 Snafu Drive',
   'Australian',
   0403573382
);

INSERT INTO patient VALUES (
```

```
    patient_seq.NEXTVAL,
    'Grace Ritchie',
    56,
    784452663,
    '42 Foobar Lane',
    'British',
    0403825682
);

INSERT INTO patient VALUES (
    patient_seq.NEXTVAL,
    'Ran J.',
    89,
    0487542363,
    '101 Omgbbq Street',
    'Australian',
    0403767656
);

INSERT INTO patient VALUES (
    patient_seq.NEXTVAL,
    'Dennis Doe',
    45,
    0403785463,
    '1100 Foobaz Avenue',
    'Australian',
    0409890862
);

INSERT INTO patient VALUES (
    patient_seq.NEXTVAL,
    'Dan Murphy',
    10,
    986715363,
    '4 Hollywood street',
    'American',
    0403578542
);

INSERT INTO patient VALUES (
    patient_seq.NEXTVAL,
    'R.K Jain',
    15,
```

```
    965403363,
    '115 vivek vihar',
    'Indian',
    8767654534
);

INSERT INTO patient VALUES (
    patient_seq.NEXTVAL,
    'Michael Smith',
    0.4,
    0403573363,
    '54 Raful Street',
    'Australian',
    0405763382
);

INSERT INTO patient VALUES (
    patient_seq.NEXTVAL,
    'Jordon Son',
    90,
    0404073363,
    '8 Macky Drive',
    'Australian',
    0498451382
);

INSERT INTO patient VALUES (
    patient_seq.NEXTVAL,
    'Kate Wincet Smith',
    98,
    0407863363,
    '3 Burwood Drive',
    'Australian',
    0403876382
);

INSERT INTO patient VALUES (
    patient_seq.NEXTVAL,
    'Won Hu',
    0.7,
    8603573363,
    '7 Xi Street',
    'Chinese',
```

```
    8803573382
);

DROP SEQUENCE doctor_seq;

CREATE SEQUENCE doctor_seq START WITH 1 INCREMENT BY 1;

INSERT INTO doctor VALUES (
    doctor_seq.NEXTVAL,
    'Daniel Johnsmith',
    8608903363
);

INSERT INTO doctor VALUES (
    doctor_seq.NEXTVAL,
    'John Daniel',
    8604253361
);

INSERT INTO doctor VALUES (
    doctor_seq.NEXTVAL,
    'Mark Smith',
    98903387
);

INSERT INTO doctor VALUES (
    doctor_seq.NEXTVAL,
    'Lindsay Son',
    04890353
);

INSERT INTO doctor VALUES (
    doctor_seq.NEXTVAL,
    'Lui Chan',
    0456723145
);

INSERT INTO doctor VALUES (
    doctor_seq.NEXTVAL,
    'Pratik Kumar',
    0385972637
);
```

```
INSERT INTO doctor VALUES (
   doctor_seq.NEXTVAL,
   'Karan Kohli',
   0563728947
);

INSERT INTO doctor VALUES (
   doctor_seq.NEXTVAL,
   'Mike Jackson',
   0487265487
);

INSERT INTO doctor VALUES (
   doctor_seq.NEXTVAL,
   'Don Jon',
   0485760937
);

INSERT INTO doctor VALUES (
   doctor_seq.NEXTVAL,
   'Shacky Son',
   0456273451
);

DROP SEQUENCE clinic_seq;

CREATE SEQUENCE clinic_seq START WITH 50 INCREMENT BY 1;

INSERT INTO clinic VALUES (
   clinic_seq.NEXTVAL,
   'MAX Hospital',
   '5 Macky Street',
   'Richmond',
   3163
);

INSERT INTO clinic VALUES (
   clinic_seq.NEXTVAL,
   'Alfred Health',
   '1 Yarra Boulevard',
   'Kew',
   3101
);
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```
INSERT INTO clinic VALUES (
   clinic_seq.NEXTVAL,
   'Caulfield Hospital',
   'Albert Street',
   'Upper Ferntree Gully',
   3156
);

INSERT INTO clinic VALUES (
   clinic_seq.NEXTVAL,
   'Sandringham Hospital',
   '51 Nelson Road',
   'Box Hill',
   3135
);

INSERT INTO clinic VALUES (
   clinic_seq.NEXTVAL,
   'Eastern Health',
   '55 Commercial Road',
   'Melbourne',
   3161
);

INSERT INTO clinic VALUES (
   clinic_seq.NEXTVAL,
   'Austin Health',
   '193 Bluff Road',
   'Sandringham',
   3191
);

INSERT INTO clinic VALUES (
   clinic_seq.NEXTVAL,
   'Angliss Hospital',
   '260 Kooyong Road',
   'Caulfield',
   3178
);

INSERT INTO clinic VALUES (
   clinic_seq.NEXTVAL,
```

```
    'Box Hill Hospital',
    '52 Kangan Drive',
    'Berwick',
    3806
);

INSERT INTO clinic VALUES (
    clinic_seq.NEXTVAL,
    'Maroondah Hospital',
    '400 Warrigal Rd',
    'Cheltenham',
    3092
);

INSERT INTO clinic VALUES (
    clinic_seq.NEXTVAL,
    'Wantirna Health',
    '865 Centre Road',
    'East Bentleigh       ',
    3165
);

DROP SEQUENCE service_seq;

CREATE SEQUENCE service_seq START WITH 30 INCREMENT BY 1;

INSERT INTO service VALUES (
    service_seq.NEXTVAL,
    'general medical consultations',
    10.00,
    1,
    51
);

INSERT INTO service VALUES (
    service_seq.NEXTVAL,
    'wellness support',
    25.50,
    4,
    52
);

INSERT INTO service VALUES (
```

```
    service_seq.NEXTVAL,
    'sports medicine',
    50.00,
    5,
    57
);

INSERT INTO service VALUES (
    service_seq.NEXTVAL,
    'mental health',
    20.00,
    7,
    53
);

INSERT INTO service VALUES (
    service_seq.NEXTVAL,
    'sexual health',
    60.00,
    9,
    59
);

INSERT INTO service VALUES (
    service_seq.NEXTVAL,
    'skin diseases',
    19.00,
    2,
    54
);

INSERT INTO service VALUES (
    service_seq.NEXTVAL,
    'paediatric health',
    47.00,
    3,
    55
);

INSERT INTO service VALUES (
    service_seq.NEXTVAL,
    'womens health',
    40.00,
```

```
    3,
    56
);

INSERT INTO service VALUES (
    service_seq.NEXTVAL,
    'mens health',
    100.00,
    1,
    58
);

INSERT INTO service VALUES (
    service_seq.NEXTVAL,
    'weight loss help',
    35.50,
    4,
    52
);

INSERT INTO service VALUES (
    service_seq.NEXTVAL,
    'general medical consultations',
    75.50,
    6,
    53
);

DROP SEQUENCE assignment_seq;

CREATE SEQUENCE assignment_seq START WITH 70 INCREMENT BY 1;

INSERT INTO assignment VALUES (
    assignment_seq.NEXTVAL,
    TO_DATE('05-Jan-2020', 'dd-mon-yyyy'),
    TO_DATE('15-Jan-2020', 'dd-mon-yyyy'),
    100,
    31
);

INSERT INTO assignment VALUES (
    assignment_seq.NEXTVAL,
    TO_DATE('06-Feb-2020', 'dd-mon-yyyy'),
```

```
    TO_DATE('10-Feb-2020', 'dd-mon-yyyy'),
    106,
    33
);

INSERT INTO assignment VALUES (
    assignment_seq.NEXTVAL,
    TO_DATE('25-Mar-2020', 'dd-mon-yyyy'),
    TO_DATE('02-Apr-2020', 'dd-mon-yyyy'),
    107,
    37
);

INSERT INTO assignment VALUES (
    assignment_seq.NEXTVAL,
    TO_DATE('28-Apr-2020', 'dd-mon-yyyy'),
    TO_DATE('29-Mar-2020', 'dd-mon-yyyy'),
    103,
    35
);

INSERT INTO assignment VALUES (
    assignment_seq.NEXTVAL,
    TO_DATE('01-May-2020', 'dd-mon-yyyy'),
    TO_DATE('06-May-2020', 'dd-mon-yyyy'),
    102,
    38
);

INSERT INTO assignment VALUES (
    assignment_seq.NEXTVAL,
    TO_DATE('15-Dec-2019', 'dd-mon-yyyy'),
    TO_DATE('02-Jan-2020', 'dd-mon-yyyy'),
    107,
    34
);

INSERT INTO assignment VALUES (
    assignment_seq.NEXTVAL,
    TO_DATE('11-Sep-2019', 'dd-mon-yyyy'),
    TO_DATE('19-Sep-2019', 'dd-mon-yyyy'),
    105,
    32
```

```
);

INSERT INTO assignment VALUES (
   assignment_seq.NEXTVAL,
   TO_DATE('19-Feb-2020', 'dd-mon-yyyy'),
   TO_DATE('20-Feb-2020', 'dd-mon-yyyy'),
   100,
   33
);

INSERT INTO assignment VALUES (
   assignment_seq.NEXTVAL,
   TO_DATE('20-Jan-2020', 'dd-mon-yyyy'),
   TO_DATE('20-Jan-2020', 'dd-mon-yyyy'),
   109,
   36
);

INSERT INTO assignment VALUES (
   assignment_seq.NEXTVAL,
   TO_DATE('02-Mar-2020', 'dd-mon-yyyy'),
   TO_DATE('09-Mar-2020', 'dd-mon-yyyy'),
   101,
   39
);

INSERT INTO assignment VALUES (
   assignment_seq.NEXTVAL,
   TO_DATE('02-Nov-2019', 'dd-mon-yyyy'),
   TO_DATE('10-Nov-2019', 'dd-mon-yyyy'),
   104,
   33
);

INSERT INTO assignment VALUES (
   assignment_seq.NEXTVAL,
   TO_DATE('07-Mar-2020', 'dd-mon-yyyy'),
   TO_DATE('09-Mar-2020', 'dd-mon-yyyy'),
   108,
   35
);

INSERT INTO assignment VALUES (
```

```
    assignment_seq.NEXTVAL,
    TO_DATE('27-Jun-2019', 'dd-mon-yyyy'),
    TO_DATE('01-Jul-2019', 'dd-mon-yyyy'),
    104,
    32
);

INSERT INTO assignment VALUES (
    assignment_seq.NEXTVAL,
    TO_DATE('22-Jul-2019', 'dd-mon-yyyy'),
    TO_DATE('29-Jul-2019', 'dd-mon-yyyy'),
    109,
    37
);

INSERT INTO assignment VALUES (
    assignment_seq.NEXTVAL,
    TO_DATE('17-Aug-2019', 'dd-mon-yyyy'),
    TO_DATE('19-Aug-2019', 'dd-mon-yyyy'),
    102,
    31
);

INSERT INTO assignment VALUES (
    assignment_seq.NEXTVAL,
    TO_DATE('29-Oct-2019', 'dd-mon-yyyy'),
    TO_DATE('29-Oct-2019', 'dd-mon-yyyy'),
    103,
    38
);

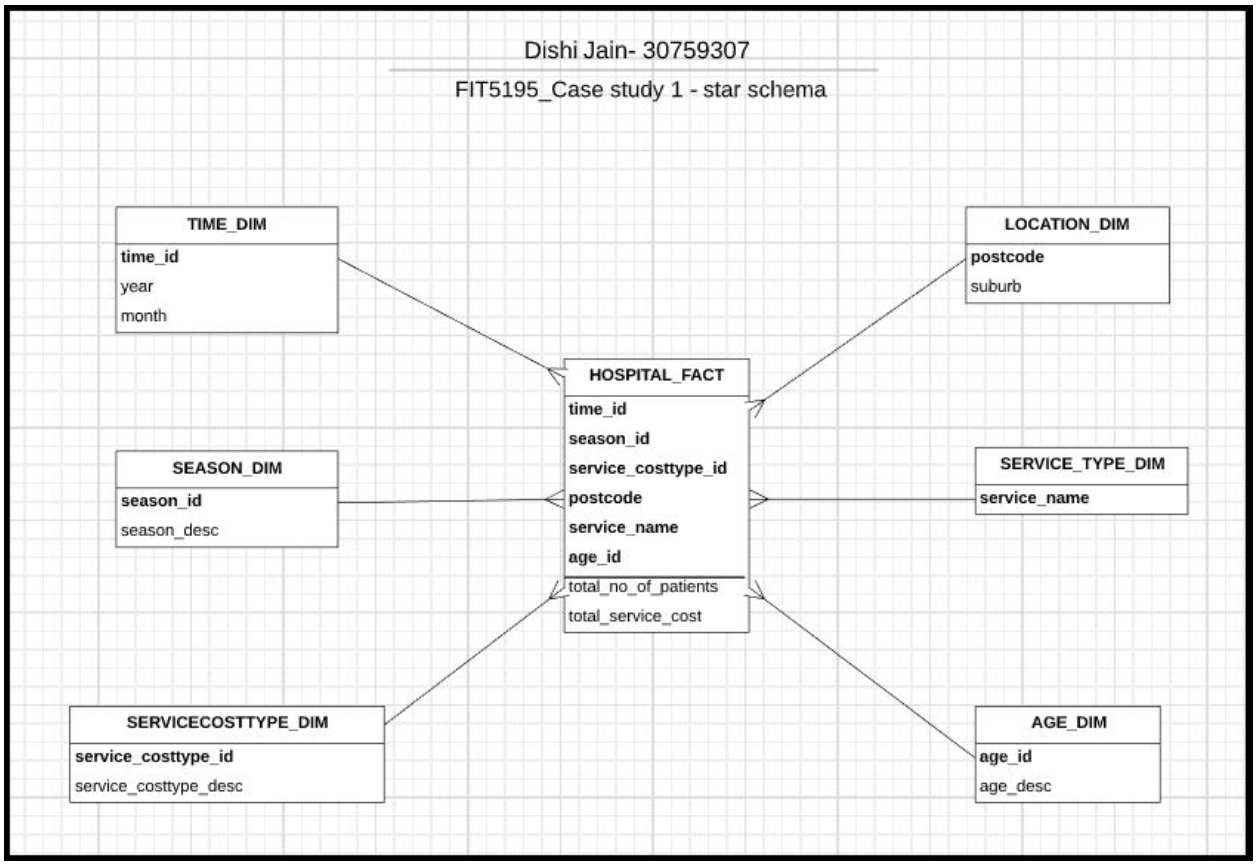
INSERT INTO assignment VALUES (
    assignment_seq.NEXTVAL,
    TO_DATE('31-Aug-2019', 'dd-mon-yyyy'),
    TO_DATE('31-Aug-2019', 'dd-mon-yyyy'),
    106,
    31
);

INSERT INTO assignment VALUES (
    assignment_seq.NEXTVAL,
    TO_DATE('07-Jul-2019', 'dd-mon-yyyy'),
    TO_DATE('09-Jul-2019', 'dd-mon-yyyy'),
```

```
    109,
    33
);

INSERT INTO assignment VALUES (
    assignment_seq.NEXTVAL,
    TO_DATE('06-Mar-2020', 'dd-mon-yyyy'),
    TO_DATE('09-Mar-2020', 'dd-mon-yyyy'),
    106,
    35
);
```

Tasks [2]:



Tasks [3]:

TIME_DIM	total_no_of_patients	total_service_cost
2020march	10	$100
2019apr	20	$300
2020may	30	$24.50

SEASON_DIM	total_no_of_patients	total_service_cost
winter	30	$500
autumn	40	$600
summer	45	$300

SERVICECOSTTYPE_DIM	total_no_of_patients	total_service_cost
low	100	$2000
medium	50	$1700
high	40	$2200

LOCATION_DIM	total_no_of_patients	total_service_cost
3163	67	$320
3063	10	$200
3267	20	$300

SERVICE_TYPE_DIM	total_no_of_patients	total_service_cost
Sports disease	20	$300
Wellness support	20	$200
Men’s health	45	$500

AGE_DIM	total_no_of_patients	total_service_cost
infant	20	$300
children	45	$500
senior	30	$200

Tasks [4]:

```
DROP TABLE time_dim CASCADE CONSTRAINTS;

DROP TABLE season_dim CASCADE CONSTRAINTS;

DROP TABLE servicecosttype_dim CASCADE CONSTRAINTS;

DROP TABLE location_dim CASCADE CONSTRAINTS;

DROP TABLE service_type_dim CASCADE CONSTRAINTS;

DROP TABLE age_dim CASCADE CONSTRAINTS;

DROP TABLE temp_hospital_fact CASCADE CONSTRAINTS;

DROP TABLE hospital_fact CASCADE CONSTRAINTS;

CREATE TABLE time_dim
   AS
      SELECT DISTINCT
         TO_CHAR(patient_service_start_date, 'yyyy')
         || TO_CHAR(patient_service_start_date, 'mon') AS time_id,
```

```
        TO_CHAR(patient_service_start_date, 'yyyy') AS year,
        TO_CHAR(patient_service_start_date, 'mon') AS month
    FROM
        assignment;

CREATE TABLE season_dim (
   season_id     VARCHAR2(20) NOT NULL,
   season_desc   VARCHAR2(20) NOT NULL
);

INSERT INTO season_dim VALUES (
   'Winter',
   'jun-aug'
);

INSERT INTO season_dim VALUES (
   'Spring',
   'sep-nov'
);

INSERT INTO season_dim VALUES (
   'Autumn',
   'mar-may'
);

INSERT INTO season_dim VALUES (
   'Summer',
   'dec-feb'
);


CREATE TABLE location_dim
   AS
      ( SELECT DISTINCT
        postcode,
        suburb
      FROM
        clinic
      );


CREATE TABLE service_type_dim
   AS
```

```
      ( SELECT DISTINCT
         service_name
      FROM
         service
      );


CREATE TABLE age_dim (
   age_id     VARCHAR2(20) NOT NULL,
   age_desc   VARCHAR2(20) NOT NULL
);

INSERT INTO age_dim VALUES (
   'Infant',
   '<1'
);

INSERT INTO age_dim VALUES (
   'Children',
   '1<18'
);

INSERT INTO age_dim VALUES (
   'Adult',
   '18<65'
);

INSERT INTO age_dim VALUES (
   'Senior',
   '65+'
);


CREATE TABLE servicecosttype_dim (
   service_costtype_id     VARCHAR2(20) NOT NULL,
   service_costtype_desc   VARCHAR2(20) NOT NULL
);

INSERT INTO servicecosttype_dim VALUES (
   'Low price',
   '<20'
);
```

```
INSERT INTO servicecosttype_dim VALUES (
   'Medium price',
   '20<50'
);

INSERT INTO servicecosttype_dim VALUES (
   'High price',
   '50+'
);


CREATE TABLE temp_hospital_fact
   AS
      SELECT
         TO_CHAR(a.patient_service_start_date, 'yyyy') AS year,
         TO_CHAR(a.patient_service_start_date, 'mon') AS month,
         s.service_cost,
         c.postcode,
         s.service_name,
         p.patient_age,
         p.patient_id
      FROM
         assignment   a,
         service      s,
         clinic       c,
         patient      p
      WHERE
         s.service_id = a.service_id
         AND a.patient_id = p.patient_id
         AND s.hospital_id = c.hospital_id;


ALTER TABLE temp_hospital_fact ADD (
   time_id              VARCHAR2(20),
   season_id            VARCHAR2(20),
   service_costtype_id  VARCHAR2(20),
   age_id               VARCHAR2(20)
);

UPDATE temp_hospital_fact
SET
   time_id = year || month;
```

```
UPDATE temp_hospital_fact
SET
   season_id = 'Winter'
WHERE
   month IN (
      'jun',
      'jul',
      'aug'
   );

UPDATE temp_hospital_fact
SET
   season_id = 'Summer'
WHERE
   month IN (
      'dec',
      'jan',
      'feb'
   );

UPDATE temp_hospital_fact
SET
   season_id = 'Spring'
WHERE
   month IN (
      'sep',
      'oct',
      'nov'
   );

UPDATE temp_hospital_fact
SET
   season_id = 'Autumn'
WHERE
   month IN (
      'mar',
      'apr',
      'may'
   );

UPDATE temp_hospital_fact
SET
   service_costtype_id = 'Low Price'
```

```
WHERE
   service_cost < 20;

UPDATE temp_hospital_fact
SET
   service_costtype_id = 'Medium Price'
WHERE
   service_cost BETWEEN 20 AND 50;

UPDATE temp_hospital_fact
SET
   service_costtype_id = 'High Price'
WHERE
   service_cost > 50;

UPDATE temp_hospital_fact
SET
   age_id = 'Infant'
WHERE
   patient_age < 1;

UPDATE temp_hospital_fact
SET
   age_id = 'Children'
WHERE
   patient_age BETWEEN 1 AND 18;

UPDATE temp_hospital_fact
SET
   age_id = 'Adult'
WHERE
   patient_age BETWEEN 19 AND 65;

UPDATE temp_hospital_fact
SET
   age_id = 'Senior'
WHERE
   patient_age > 65;


CREATE TABLE hospital_fact
   AS
      SELECT
```

```
    time_id,
    season_id,
    service_costtype_id,
    postcode,
    service_name,
    age_id,
    COUNT(patient_id) AS total_no_of_patients,
    SUM(service_cost) AS total_service_cost
FROM
    temp_hospital_fact
GROUP BY
    time_id,
    season_id,
    service_costtype_id,
    postcode,
    service_name,
    age_id;
```

CONTENTS OF THE DIMENSIONS AND FACT TABLES LOOK LIKE THIS-

AGE_DIM

	AGE_ID	AGE_DESC
1	Infant	<1
2	Children	1<18
3	Adult	18<65
4	Senior	65+

HOSPITAL_FACT

	TIME_ID	SEASON_ID	SERVICE_COSTTYPE_ID	POSTCODE	SERVICE_NAME	AGE_ID	TOTAL_NO_OF_PATIENTS	TOTAL_SERVICE_COST
1	2020feb	Summer	Medium Price	3135	mental health	Infant	1	20
2	2019dec	Summer	High Price	3165	sexual health	Senior	1	60
3	2020feb	Summer	Medium Price	3135	mental health	Adult	1	20
4	2019jul	Winter	Medium Price	3178	womens health	Infant	1	40
5	2020may	Autumn	High Price	3092	mens health	Senior	1	100
6	2019nov	Spring	Medium Price	3135	mental health	Children	1	20
7	2019jun	Winter	Medium Price	3806	sports medicine	Children	1	50
8	2020jan	Summer	Medium Price	3156	wellness support	Adult	1	25.5
9	2020apr	Autumn	Low Price	3161	skin diseases	Adult	1	19
10	2020mar	Autumn	Medium Price	3178	womens health	Senior	1	40
11	2019sep	Spring	Medium Price	3806	sports medicine	Children	1	50
12	2020mar	Autumn	Low Price	3161	skin diseases	Senior	1	19
13	2019oct	Spring	High Price	3092	mens health	Adult	1	100
14	2020jan	Summer	Medium Price	3191	paediatric health	Infant	1	47
15	2020mar	Autumn	Medium Price	3156	weight loss help	Adult	1	35.5
16	2019aug	Winter	Medium Price	3156	wellness support	Senior	1	25.5
17	2020mar	Autumn	Low Price	3161	skin diseases	Infant	1	19
18	2019aug	Winter	Medium Price	3156	wellness support	Infant	1	25.5
19	2019jul	Winter	Medium Price	3135	mental health	Infant	1	20

LOCATION_DIM

	POSTCODE	SUBURB
1	3178	Caulfield
2	3165	East Bentleigh
3	3092	Cheltenham
4	3191	Sandringham
5	3101	Kew
6	3156	Upper Ferntree Gully
7	3161	Melbourne
8	3806	Berwick
9	3163	Richmond
10	3135	Box Hill

SEASON_DIM

	SEASON_ID	SEASON_DESC
1	Winter	jun-aug
2	Spring	sep-nov
3	Autumn	mar-may
4	Summer	dec-feb

SERVICECOSTTYPE_DIM

	SERVICE_COSTTYPE_ID	SERVICE_COSTTYPE_DESC
1	Low price	<20
2	Medium price	20<50
3	High price	50+

SERVICE_TYPE_DIM

	SERVICE_NAME
1	womens health
2	paediatric health
3	sports medicine
4	skin diseases
5	general medical consultations
6	wellness support
7	sexual health
8	mens health
9	weight loss help
10	mental health

TIME_DIM

	TIME_ID	YEAR	MONTH
1	2020mar	2020	mar
2	2019sep	2019	sep
3	2019aug	2019	aug
4	2019dec	2019	dec
5	2020jan	2020	jan
6	2020feb	2020	feb
7	2019jun	2019	jun
8	2019jul	2019	jul
9	2019oct	2019	oct
10	2020may	2020	may
11	2020apr	2020	apr
12	2019nov	2019	nov

TEMP_HOSPITAL_FACT

	YEAR	MONTH	SERVICE_COST	POSTCODE	SERVICE_NAME	PATIENT_AGE	PATIENT_ID	TIME_ID	SEASON_ID	SERVICE_COSTTYPE_ID	AGE_ID
1	2020	jan	25.5	3156	wellness support	23	100	2020jan	Summer	Medium Price	Adult
2	2020	feb	20	3135	mental health	0.4	106	2020feb	Summer	Medium Price	Infant
3	2020	mar	40	3178	womens health	90	107	2020mar	Autumn	Medium Price	Senior
4	2020	apr	19	3161	skin diseases	45	103	2020apr	Autumn	Low Price	Adult
5	2020	may	100	3092	mens health	89	102	2020may	Autumn	High Price	Senior
6	2019	dec	60	3165	sexual health	90	107	2019dec	Summer	High Price	Senior
7	2019	sep	50	3806	sports medicine	15	105	2019sep	Spring	Medium Price	Children
8	2020	feb	20	3135	mental health	23	100	2020feb	Summer	Medium Price	Adult
9	2020	jan	47	3191	paediatric health	0.7	109	2020jan	Summer	Medium Price	Infant
10	2020	mar	35.5	3156	weight loss help	56	101	2020mar	Autumn	Medium Price	Adult
11	2019	nov	20	3135	mental health	10	104	2019nov	Spring	Medium Price	Children
12	2020	mar	19	3161	skin diseases	98	108	2020mar	Autumn	Low Price	Senior
13	2019	jun	50	3806	sports medicine	10	104	2019jun	Winter	Medium Price	Children
14	2019	jul	40	3178	womens health	0.7	109	2019jul	Winter	Medium Price	Infant
15	2019	aug	25.5	3156	wellness support	89	102	2019aug	Winter	Medium Price	Senior
16	2019	oct	100	3092	mens health	45	103	2019oct	Spring	High Price	Adult
17	2019	aug	25.5	3156	wellness support	0.4	106	2019aug	Winter	Medium Price	Infant
18	2019	jul	20	3135	mental health	0.7	109	2019jul	Winter	Medium Price	Infant
19	2020	mar	19	3161	skin diseases	0.4	106	2020mar	Autumn	Low Price	Infant
20	2020	apr	19	3161	skin diseases	0.4	106	2020apr	Autumn	Low Price	Infant
21	2020	apr	19	3161	skin diseases	90	107	2020apr	Autumn	Low Price	Senior
22	2020	apr	19	3161	skin diseases	10	104	2020apr	Autumn	Low Price	Children

Tasks [5]:

a) Show the total number of patients making appointments during Winter.

ANSWER -

SELECT

```
    SUM(total_no_of_patients) AS total_patients
FROM
    hospital_fact
WHERE
    season_id = 'Winter'
ORDER BY
    total_patients;
```

	TOTAL_PATIENTS
1	5

b) Show the total service charged for each service cost type.

ANSWER -

```
SELECT
    service_costtype_id,
    '$' || SUM(total_service_cost) as total_service_charged
FROM
    hospital_fact
GROUP BY
    service_costtype_id
ORDER BY
    service_costtype_id;
```

	SERVICE_COSTTYPE_ID	TOTAL_SERVICE_CHARGED
1	High Price	$260
2	Low Price	$114
3	Medium Price	$419

c) Show the total number of patients by each age group (infant <1, children <18, adult 18+, senior 65+) in April 2020.

ANSWER -

```
SELECT
    age_id,
    SUM(total_no_of_patients) AS total_patients
FROM
    hospital_fact
WHERE
    time_id = '2020apr'
GROUP BY
    age_id
ORDER BY
    age_id;
```

	AGE_ID	TOTAL_PATIENTS
1	Adult	1
2	Children	1
3	Infant	1
4	Senior	1

d) Show the total service charged for general medical consultations in each suburb.

ANSWER -

```
SELECT
    l.suburb,
    '$' || SUM(h.total_service_cost) AS total_service_cost
FROM
    location_dim    l,
    hospital_fact   h
WHERE
    h.service_name = 'mental health'
    AND h.postcode = l.postcode
GROUP BY
    l.suburb
ORDER BY
```

l.suburb;

	SUBURB	TOTAL_SERVICE_COST
1	Box Hill	$80