**FIT 5195 ASSIGNMENT 1 CASE STUDY 1**

**TASK 1**

CREATE TABLE PATIENT

( patient\_id number(4)PRIMARY KEY,

patient\_name varchar(30) NOT NULL,

patient\_age number(3) NOT NULL,

patient\_ph\_no number(12),

patient\_address varchar(50),

patient\_nationality varchar(25),

patient\_emergency\_contact number(12));

--DESC PATIENT;

INSERT INTO PATIENT VALUES (1001, 'ALEXANDER ARNOLD', 11, 0475050229, '11/4 BRAMALL LANE', 'AUSTRALIAN', 0422561532);

INSERT INTO PATIENT VALUES (1002, 'ALEX HALES', 91, 0476050228, '14/4 WHITE HART LANE', 'AUSTRALIAN', 0532567542);

INSERT INTO PATIENT VALUES (1703, 'ALICE SMITH', 23, 0475040129, '11/5 BROOKYLN AVENUE', 'AMERICAN', 0632567536);

INSERT INTO PATIENT VALUES (1034, 'AMIT SINGH', 14, 0471054226, '11/1 ANFIELD', 'INDIAN', 0432767537);

INSERT INTO PATIENT VALUES (1003, 'AJAY SHARMA', 61, 0675050229, '11/4 CHAPPEL STREET', 'INDIAN', 0412567511);

INSERT INTO PATIENT VALUES (1066, 'COREY ANDERSON', 68, 0476757209, '7/4 ST KILDA ROAD', 'AUSTRALIAN', 0442567544);

INSERT INTO PATIENT VALUES (1057, 'SAM SMITH', 01, 0956142851, '11/4 GANDHI PATH', 'AUSTRALIAN', 0438588538);

INSERT INTO PATIENT VALUES (1028, 'ALEXANDER WRIGHT', 27, 0135790864, '16/2 VIJAY DWAR', 'AUSTRALIAN', 0632567536);

INSERT INTO PATIENT VALUES (1019, 'SANJAY MISHRA', 76, 0454433321, '10/5 ANDHERI EAST', 'INDIAN', 0431567531);

INSERT INTO PATIENT VALUES (1050, 'ANITA RAO', 42, 0971020449, '13/4 BRAMALL LANE', 'AUSTRALIAN', 0932567530);

SELECT \* FROM PATIENT ORDER BY PATIENT\_ID;

CREATE TABLE DOCTOR

( staff\_id number(4)PRIMARY KEY,

staff\_name varchar(30) NOT NULL,

staff\_ph\_no number(12));

--DESC DOCTOR;

INSERT INTO DOCTOR VALUES (9001, 'JYOTI SINGH', 0391040512);

INSERT INTO DOCTOR VALUES (9002, 'AJAY MEHTA', 0194040551);

INSERT INTO DOCTOR VALUES (9010, 'LI CHANG', 0314041512);

INSERT INTO DOCTOR VALUES (9011, 'JYOTI SHARMA', 0494040542);

INSERT INTO DOCTOR VALUES (9004, 'JOHN WRIGHT', 0494040554);

INSERT INTO DOCTOR VALUES (9006, 'JOHN SMITH', 0394444552);

INSERT INTO DOCTOR VALUES (9009, 'REBECCA WATSON', 0494044542);

INSERT INTO DOCTOR VALUES (9008, 'JORDAN SANCHO', 0494440452);

SELECT \* FROM DOCTOR ORDER BY STAFF\_ID;

--DROP TABLE DOCTOR;

CREATE TABLE CLINIC

( hospital\_id number(3)PRIMARY KEY,

hospital\_name varchar(30) NOT NULL,

hospital\_address varchar(40) NOT NULL,

suburb varchar(25) NOT NULL,

postcode number(4) NOT NULL);

INSERT INTO CLINIC VALUES (101, 'APOLLO MAX', '14 BOURKE STREET', 'MELBOURNE', 3079);

INSERT INTO CLINIC VALUES (102, 'GLOBAL HEART', '60 WAVERLEY ROAD', 'MALVERN EAST', 3145);

INSERT INTO CLINIC VALUES (103, 'THE ALFRED', '55 COMMERCIAL ROAD', 'ARMADALE', 3044);

INSERT INTO CLINIC VALUES (119, 'AAMS MELBOURNE', '18 GLEN HUNTLY ROAD', 'GLEN HUNTLY', 3163);

INSERT INTO CLINIC VALUES (183, 'THE DEN', '1O RACECOURSE ROAD', 'CLAYTON', 3168);

INSERT INTO CLINIC VALUES (106, 'MONASH HOSPITAL', '59 WAVERLEY ROAD', 'MALVERN EAST', 3145);

SELECT \* FROM CLINIC ORDER BY HOSPITAL\_ID;

CREATE TABLE SERVICE

( service\_id number(5)PRIMARY KEY,

staff\_id number(4),

hospital\_id number(3) NOT NULL,

service\_name varchar(30),

service\_cost number(6,2),

FOREIGN KEY (staff\_id) REFERENCES DOCTOR(staff\_id),

FOREIGN KEY (hospital\_id) REFERENCES CLINIC(hospital\_id));

--DESC SERVICE;

INSERT INTO SERVICE VALUES (10001, 9001, 101, 'GENERAL MEDICAL CONSULTATIONS', 10.00);

INSERT INTO SERVICE VALUES (10002, 9002, 103, 'MENTAL HEALTH', 40.00);

INSERT INTO SERVICE VALUES (10005, 9006, 119, 'SEXUAL HEALTH', 80.00);

INSERT INTO SERVICE VALUES (10009, 9002, 102, 'GENERAL PATHOLOGY', 120.00);

INSERT INTO SERVICE VALUES (10035, 9001, 183, 'PAEDIATRIC HEALTH', 60.00);

INSERT INTO SERVICE VALUES (10077, 9001, 183, 'WELLNESS SUPPORT', 30.00);

INSERT INTO SERVICE VALUES (10011, 9002, 106, 'SKIN DISEASES', 75.00);

INSERT INTO SERVICE VALUES (10010, 9011, 106, 'SPORTS MEDICINE', 150.00);

SELECT \* FROM SERVICE ORDER BY SERVICE\_ID;

CREATE TABLE ASSIGNMENT

( assignment\_id number(4)PRIMARY KEY,

patient\_id number(4),

patient\_service\_start\_date date NOT NULL,

patient\_service\_end\_date date NOT NULL,

service\_id number(5),

FOREIGN KEY (patient\_id) REFERENCES PATIENT(patient\_id),

FOREIGN KEY (service\_id) REFERENCES SERVICE(service\_id));

--DESC SERVICE;

INSERT INTO ASSIGNMENT VALUES (0010, 1001, '24-APR-2020', '25-APR-2020',10001);

INSERT INTO ASSIGNMENT VALUES (0011, 1002, '21-JAN-2020', '22-JAN-2020',10002);

INSERT INTO ASSIGNMENT VALUES (0012, 1001, '12-FEB-2020', '14-FEB-2020',10001);

INSERT INTO ASSIGNMENT VALUES (0015, 1050, '04-APR-2020', '06-APR-2020',10005);

INSERT INTO ASSIGNMENT VALUES (0017, 1001, '24-JAN-2020', '27-JAN-2020',10009);

INSERT INTO ASSIGNMENT VALUES (0019, 1057, '24-MAR-2020', '26-MAR-2020',10005);

INSERT INTO ASSIGNMENT VALUES (0020, 1019, '12-JUL-2020', '19-JUL-2020',10011);

INSERT INTO ASSIGNMENT VALUES (0022, 1066, '09-MAR-2020', '12-MAR-2020',10077);

SELECT \* FROM ASSIGNMENT ORDER BY ASSIGNMENT\_ID;

**TASK 2**

**The Star Schema representation of the *Government Hospital* Case Study**

**A screenshot of a cell phone

Description automatically generated**

**TASK 3**

**TWO COLUMN METHODOLOGY FOR CASE STUDY I**

|  |  |  |
| --- | --- | --- |
| **ServiceDIM** | **Total No of Patients** | **Total Service Charged** |
| 1001 | 250 | $5800 |
| 1002 | 110 | $3200 |
| 1003 | 750 | $9700 |
| **…** | **…** | **…** |

|  |  |  |
| --- | --- | --- |
| **ServiceCostTypeDIM** | **Total No of Patients** | **Total Service Charged** |
| Low Price | 890 | $12680 |
| Medium Price | 476 | $17705 |
| High Price | 96 | $9876 |

|  |  |  |
| --- | --- | --- |
| **HospitalLocDIM** | **Total No of Patients** | **Total Service Charged** |
| Malvern East | 251 | $5909 |
| Clayton | 114 | $2997 |
| Armadale | 750 | $12400 |
| **…** | **…** | **…** |

|  |  |  |
| --- | --- | --- |
| **AgeGroupDIM** | **Total No of Patients** | **Total Service Charged** |
| Infant | 110 | $3800 |
| Children | 256 | $5200 |
| Adult | 950 | $24700 |
| Senior | 396 | $9489 |

|  |  |  |
| --- | --- | --- |
| **TimePeriodDIM** | **Total No of Patients** | **Total Service Charged** |
| Winter | 450 | $9800 |
| Summer | 510 | $10200 |
| **…** | **…** | **…** |

From these tables above containing rough but acceptable data, we can conclude that all the dimensions and the ultimate fact table are acceptable. Hence, the *Government Hospital* Star Schema is **valid** as it has been **validated** by the *Two Column Methodology*(The actual data may substantially differ).

**TASK 4**

CREATE TABLE SERVICEDIM AS SELECT SERVICE\_ID, SERVICE\_NAME FROM SERVICE;

--SELECT \* FROM SERVICEDIM;

CREATE TABLE SERVICECOSTTYPEDIM AS SELECT DISTINCT SERVICE\_COST FROM SERVICE;

ALTER TABLE SERVICECOSTTYPEDIM ADD

SERVICE\_COST\_TYPE VARCHAR (20);

UPDATE SERVICECOSTTYPEDIM

SET SERVICE\_COST\_TYPE = 'Low Price'

WHERE SERVICE\_COST <= 20;

UPDATE SERVICECOSTTYPEDIM

SET SERVICE\_COST\_TYPE = 'Medium Price'

WHERE SERVICE\_COST > 20 AND SERVICE\_COST <= 50;

UPDATE SERVICECOSTTYPEDIM

SET SERVICE\_COST\_TYPE = 'High Price'

WHERE SERVICE\_COST >= 50;

SELECT \* FROM SERVICECOSTTYPEDIM;

CREATE TABLE HOSPLOCDIM AS SELECT DISTINCT SUBURB, POSTCODE FROM CLINIC;

SELECT \* FROM HOSPLOCDIM;

CREATE TABLE AGEGROUPDIM AS SELECT DISTINCT PATIENT\_AGE FROM PATIENT;

ALTER TABLE AGEGROUPDIM ADD

AGE\_GROUP\_ID VARCHAR (20);

UPDATE AGEGROUPDIM

SET AGE\_GROUP\_ID = 'Infant'

WHERE PATIENT\_AGE <= 1;

UPDATE AGEGROUPDIM

SET AGE\_GROUP\_ID = 'Children'

WHERE PATIENT\_AGE > 1 AND PATIENT\_AGE < 18;

UPDATE AGEGROUPDIM

SET AGE\_GROUP\_ID = 'Adult'

WHERE PATIENT\_AGE >= 18 AND PATIENT\_AGE < 65;

UPDATE AGEGROUPDIM

SET AGE\_GROUP\_ID = 'Senior'

WHERE PATIENT\_AGE >= 65;

SELECT \* FROM AGEGROUPDIM ORDER BY PATIENT\_AGE;

CREATE TABLE TIMEPERIODDIM AS SELECT DISTINCT to\_char(patient\_service\_start\_date, 'MM-YYYY') AS "APPOINTMENT PERIOD" from ASSIGNMENT;

ALTER TABLE TIMEPERIODDIM ADD

TIME\_PERIOD\_ID VARCHAR(20);

UPDATE TIMEPERIODDIM

SET TIME\_PERIOD\_ID = 'Summer'

WHERE "APPOINTMENT PERIOD" IN ('12-2020','01-2020', '02-2020');

UPDATE TIMEPERIODDIM

SET TIME\_PERIOD\_ID = 'Autumn'

WHERE "APPOINTMENT PERIOD" IN ('03-2020','04-2020', '05-2020');

UPDATE TIMEPERIODDIM

SET TIME\_PERIOD\_ID = 'Winter'

WHERE "APPOINTMENT PERIOD" IN ('06-2020','07-2020', '08-2020');

UPDATE TIMEPERIODDIM

SET TIME\_PERIOD\_ID = 'Spring'

WHERE "APPOINTMENT PERIOD" IN ('09-2020','10-2020', '11-2020');

SELECT \* FROM TIMEPERIODDIM;

--- THE TEMPORARY FACT TABLE CREATION

CREATE TABLE TEMP\_FACT\_TF AS SELECT S.SERVICE\_ID, S.SERVICE\_COST, A.PATIENT\_SERVICE\_START\_DATE, P.PATIENT\_AGE, C.SUBURB

FROM SERVICE S, ASSIGNMENT A, PATIENT P, CLINIC C

WHERE S.SERVICE\_ID = A.SERVICE\_ID AND A.PATIENT\_ID = P.PATIENT\_ID

AND S.HOSPITAL\_ID = C.HOSPITAL\_ID

GROUP BY S.SERVICE\_ID, S.SERVICE\_COST, A.PATIENT\_SERVICE\_START\_DATE, P.PATIENT\_AGE, C.SUBURB;

ALTER TABLE TEMP\_FACT\_TF ADD

TIME\_PERIOD\_ID VARCHAR(20);

ALTER TABLE TEMP\_FACT\_TF ADD

AGE\_GROUP\_ID VARCHAR(20);

ALTER TABLE TEMP\_FACT\_TF ADD

SERVICE\_COST\_TYPE VARCHAR(20);

DESC TEMP\_FACT\_TF;

SELECT \* FROM TEMP\_FACT\_TF;

UPDATE TEMP\_FACT\_TF

SET SERVICE\_COST\_TYPE = 'Low Price'

WHERE SERVICE\_COST <= 20;

UPDATE TEMP\_FACT\_TF

SET SERVICE\_COST\_TYPE = 'Medium Price'

WHERE SERVICE\_COST > 20 AND SERVICE\_COST <= 50;

UPDATE TEMP\_FACT\_TF

SET SERVICE\_COST\_TYPE = 'High Price'

WHERE SERVICE\_COST >= 50;

UPDATE TEMP\_FACT\_TF

SET AGE\_GROUP\_ID = 'Infant'

WHERE PATIENT\_AGE <= 1;

UPDATE TEMP\_FACT\_TF

SET AGE\_GROUP\_ID = 'Children'

WHERE PATIENT\_AGE > 1 AND PATIENT\_AGE < 18;

UPDATE TEMP\_FACT\_TF

SET AGE\_GROUP\_ID = 'Adult'

WHERE PATIENT\_AGE >= 18 AND PATIENT\_AGE < 65;

UPDATE TEMP\_FACT\_TF

SET AGE\_GROUP\_ID = 'Senior'

WHERE PATIENT\_AGE >= 65;

SELECT \* FROM TEMP\_FACT\_TF;

UPDATE TEMP\_FACT\_TF

SET TIME\_PERIOD\_ID = 'Summer'

WHERE TO\_CHAR(PATIENT\_SERVICE\_START\_DATE,'MM-YYYY') IN ('12-2020','01-2020', '02-2020');

UPDATE TEMP\_FACT\_TF

SET TIME\_PERIOD\_ID = 'Autumn'

WHERE TO\_CHAR(PATIENT\_SERVICE\_START\_DATE,'MM-YYYY') IN ('03-2020','04-2020', '05-2020');

UPDATE TEMP\_FACT\_TF

SET TIME\_PERIOD\_ID = 'Winter'

WHERE TO\_CHAR(PATIENT\_SERVICE\_START\_DATE,'MM-YYYY') IN ('06-2020','07-2020', '08-2020');

UPDATE TEMP\_FACT\_TF

SET TIME\_PERIOD\_ID = 'Spring'

WHERE TO\_CHAR(PATIENT\_SERVICE\_START\_DATE,'MM-YYYY') IN ('09-2020','10-2020', '11-2020');

SELECT \* FROM TEMP\_FACT\_TF;

---THE FACT TABLE

CREATE TABLE GOVTHOSPFACT AS SELECT S.SERVICE\_ID AS "SERVICE ID", TF.SERVICE\_COST\_TYPE AS "SERVICE COST TYPE",

TF.TIME\_PERIOD\_ID AS "SEASONAL TIME PERIOD",

TF.AGE\_GROUP\_ID AS "AGE GROUP", C.SUBURB AS "HOSPITAL LOCATION",

COUNT(A.PATIENT\_ID) AS "TOTAL PATIENTS",

SUM(A.ASSIGNMENT\_ID \* S.SERVICE\_COST) AS "TOTAL SERVICE CHARGED"

FROM SERVICE S, CLINIC C, TEMP\_FACT\_TF TF, ASSIGNMENT A

WHERE S.HOSPITAL\_ID = C.HOSPITAL\_ID AND C.SUBURB = TF.SUBURB AND

TF.SERVICE\_ID = A.SERVICE\_ID

GROUP BY S.SERVICE\_ID, TF.SERVICE\_COST\_TYPE, TF.TIME\_PERIOD\_ID, TF.AGE\_GROUP\_ID, C.SUBURB;

SELECT \* FROM GOVTHOSPFACT ORDER BY "SERVICE ID";

**TASK 5**

--Q1)

SELECT SUM("TOTAL PATIENTS") AS "TOTAL PATIENTS" FROM GOVTHOSPFACT WHERE "SEASONAL TIME PERIOD" = 'Winter';

--Q2)

SELECT SUM("TOTAL SERVICE CHARGED") AS "TOTAL SERVICE CHARGED", "SERVICE COST TYPE" FROM GOVTHOSPFACT GROUP BY "SERVICE COST TYPE";

--Q3)

SELECT "AGE GROUP", SUM("TOTAL PATIENTS") AS "TOTAL PATIENTS"

FROM GOVTHOSPFACT G, TIMEPERIODDIM T WHERE G."SEASONAL TIME PERIOD" = T. TIME\_PERIOD\_ID

AND "APPOINTMENT PERIOD" = '01-2020' GROUP BY "AGE GROUP";

--Q4)

SELECT "HOSPITAL LOCATION", SUM("TOTAL SERVICE CHARGED") AS "TOTAL SERVICE CHARGED" FROM GOVTHOSPFACT G, SERVICEDIM S

WHERE G."SERVICE ID" = S.SERVICE\_ID AND

SERVICE\_NAME = 'GENERAL MEDICAL CONSULTATIONS' GROUP BY "HOSPITAL LOCATION";