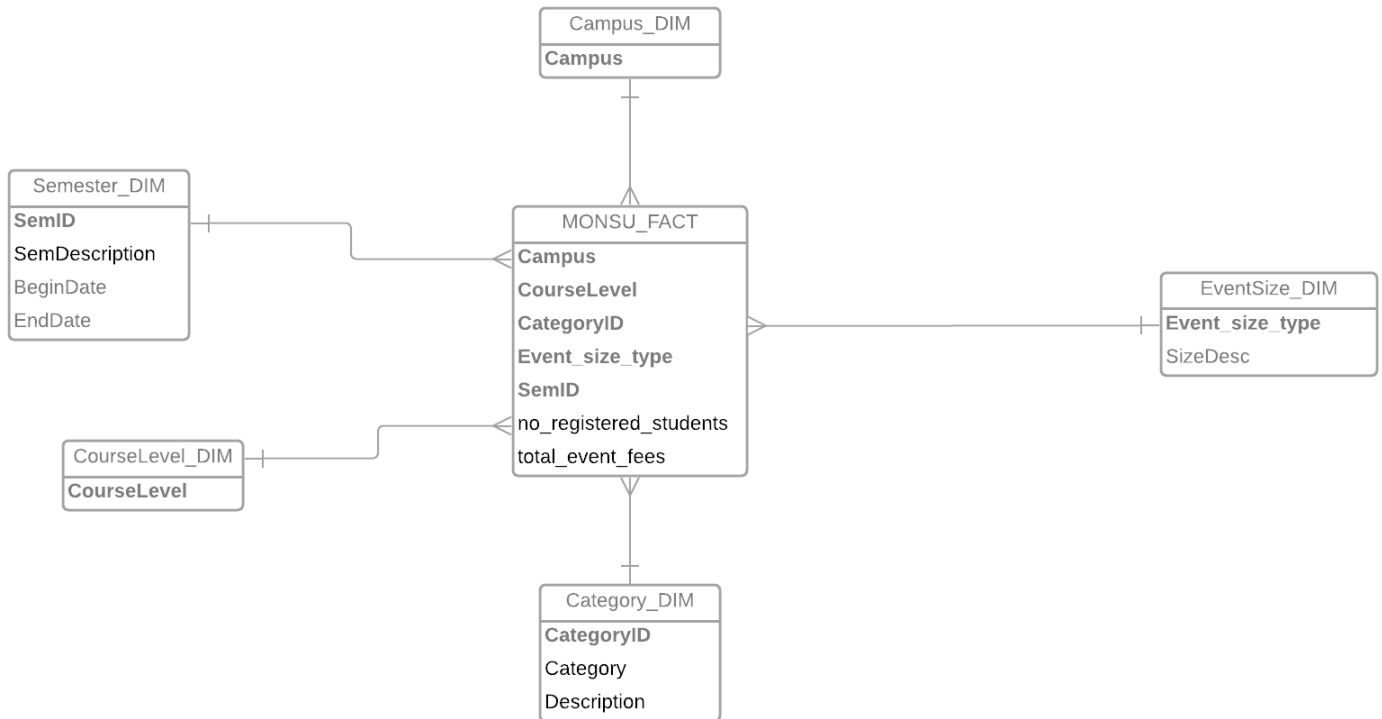


## Part 1 - Star Schema



## **Part 2 - 2 Column Methodology**

Campus	Number of Registered Students	Total Event Fees
<b>Clayton</b>	214	1616
<b>Caulfield</b>	69	427
<b>City</b>	21	308
<b>Peninsula</b>	46	430

Course Level	Number of Registered Students	Total Event Fees
<b>Diploma</b>	76	530
<b>Bachelor</b>	157	1222
<b>Master</b>	117	1029

Semester	Number of Registered Students	Total Event Fees
<b>S1</b>	153	996
<b>S2</b>	197	1785

Event Size	Number of Registered Students	Total Event Fees
<b>Small</b>	22	28
<b>Medium</b>	238	1669
<b>Large</b>	90	1084

Category	Number of Registered Students	Total Event Fees
<b>Academy Club</b>	72	210
<b>Cultural Club</b>	6	8
<b>Special Interest Club</b>	216	2083
<b>Spiritual Club</b>	56	480

### **Part 3 – SQL Create the Dimension and Fact Table (see Table Pictures in Appendix)**

```
DROP TABLE category_dim CASCADE CONSTRAINTS PURGE;
```

```
CREATE TABLE category_dim AS  
SELECT * FROM MClub.category;
```

```
DROP TABLE campus_dim CASCADE CONSTRAINTS PURGE;
```

```
CREATE TABLE campus_dim AS  
SELECT DISTINCT Campus  
FROM MClub.Event;
```

```
DROP TABLE courselevel_dim CASCADE CONSTRAINTS PURGE;
```

```
CREATE TABLE courselevel_dim AS  
SELECT DISTINCT CourseLevel  
FROM MClub.Student;
```

```
DROP TABLE semester_dim CASCADE CONSTRAINTS PURGE;
```

```
CREATE TABLE semester_dim (  
  semid VARCHAR2(10),  
  sem_desc VARCHAR2(20),  
  begin_date DATE,  
  end_date DATE  
);
```

```
DROP TABLE eventsize_dim CASCADE CONSTRAINTS PURGE;
```

```
CREATE TABLE eventsize_dim (  
  event_size_type VARCHAR2(10),  
  sizedesc VARCHAR2(20)  
);
```

-- populate semester dimension for Semester 1 and Semester 2 and Summer and Winter Semester  
-- (the begin and end date can be changed according to the case)

```
INSERT INTO semester_dim  
VALUES ('S1', 'Semester1', TO_DATE('01-MAR', 'DD-MON'),  
TO_DATE('30-JUN', 'DD-MON'));  
INSERT INTO semester_dim  
VALUES ('S2', 'Semester2', TO_DATE('01-AUG', 'DD-MON'),  
TO_DATE('30-NOV', 'DD-MON'));  
INSERT INTO semester_dim  
VALUES ('WS', 'Winter Semester', TO_DATE('01-JUL', 'DD-MON'),  
TO_DATE('31-JUL', 'DD-MON'));  
INSERT INTO semester_dim  
VALUES ('SS', 'Summer Semester', TO_DATE('01-DEC', 'DD-MON'),  
TO_DATE('28-FEB', 'DD-MON'));
```

```
DROP TABLE temp_fact_monsu CASCADE CONSTRAINTS PURGE;
```

```
CREATE TABLE temp_fact_monsu AS
SELECT reg.RegistrationID,e.StartDate,e.MaxNumberInvolved, e.Campus,cat.Category,s.CourseLevel ,
e.EventFee
FROM MClub.Event e, MClub.Registration reg , MClub.Category cat,MClub.Student s,MClub.Club c
WHERE reg.EventID = e.EventID
AND reg.StudentID = s.StudentID
AND e.ClubID = c.ClubID
AND c.CategoryID = cat.CategoryID
GROUP BY reg.RegistrationID, e.StartDate, e.MaxNumberInvolved,e.Campus,cat.Category,s.CourseLevel ,
e.EventFee;
```

```
ALTER TABLE temp_fact_monsu
ADD (semid VARCHAR2(10));
```

```
ALTER TABLE temp_fact_monsu
ADD (event_size_type VARCHAR(10));
```

```
UPDATE temp_fact_monsu
SET semid = 'S1'
WHERE to_char(StartDate, 'MMDD') >= '0301'
AND to_char(StartDate, 'MMDD') <= '0630';
```

```
UPDATE temp_fact_monsu
SET semid = 'S2'
WHERE to_char(StartDate, 'MMDD') >= '0801'
AND to_char(StartDate, 'MMDD') <= '1130';
```

```
UPDATE temp_fact_monsu
SET semid = 'SW'
WHERE to_char(StartDate, 'MMDD') >= '0701'
AND to_char(StartDate, 'MMDD') <= '0730';
```

```
UPDATE temp_fact_monsu
SET semid = 'SS'
WHERE to_char(StartDate, 'MMDD') >= '1201'
AND to_char(StartDate, 'MMDD') <= '0228';
```

```
UPDATE temp_fact_monsu
SET event_size_type = 'Small'
WHERE MaxNumberInvolved <= 20;
```

```
UPDATE temp_fact_monsu
SET event_size_type = 'Medium'
WHERE MaxNumberInvolved > 20
AND MaxNumberInvolved <= 80;
```

```
UPDATE temp_fact_monsu
```

```
SET event_size_type = 'Large'  
WHERE MaxNumberInvolved > 80;
```

```
DROP table fact_monsu CASCADE CONSTRAINTS PURGE;
```

```
CREATE table fact_monsu as  
select T.campus,T.category,T.courselevel,T.semid,T.event_size_type,count(T.registrationid) as  
no_registered_students, sum(T.eventfee) as total_expenses  
from temp_fact_monsu T  
GROUP BY T.campus,T.category,T.courselevel,T.semid,T.event_size_type;
```

## Part 4 – SQL Query Commands

-- a)

```
SELECT semid, event_size_type, sum(no_registered_students) as no_registered_students
FROM fact_monsu
GROUP BY semid, event_size_type
ORDER BY semid;
```

	SEMID	EVENT_SIZE_TYPE	NO_REGISTERED_STUDENTS
1	S1	Large	69
2	S1	Medium	62
3	S1	Small	22
4	S2	Large	21
5	S2	Medium	176

-- b)

```
SELECT campus, sum(total_expenses) as total_expenses
FROM fact_monsu
GROUP BY campus
ORDER BY total_expenses;
```

	CAMPUS	TOTAL_EXPENSES
1	City	308
2	Caulfield	427
3	Peninsula	430
4	Clayton	1616

-- c)

```
SELECT category, sum(no_registered_students) as no_registered_students
FROM fact_monsu
GROUP BY category
ORDER BY category;
```

	CATEGORY	NO_REGISTERED_STUDENTS
1	Academic Club	72
2	Cultural Club	6
3	Special Interest Club	216
4	Spiritual Club	56

```
SELECT courselevel, sum(total_expenses) as total_expenses
FROM fact_monsu
WHERE category = 'Special Interest Club'
GROUP BY courselevel;
```

	COURSELEVEL	TOTAL_EXPENSES
1	Diploma	346
2	Bachelor	888
3	Master	849

## Appendix

### CategoryDIM

CATEGORYID	CATEGORY	DESCRIPTION
1 MMC001	Academic Club	Academic clubs are a great way to complement your degree with networking events, internship oppor
2 MMC002	Cultural Club	Cultural clubs are run by passionate students who devote their time to celebrating and raising av
3 MMC003	Special Interest Club	Special interest clubs cater to almost every hobby and talent. Clubs are vital in bringing togeth
4 MMC004	Spiritual Club	Spiritual clubs offer a community of belonging not only within Monash, but within the wider commu

### CourseLevelDIM

COURSELEVEL
1 Diploma
2 Bachelor
3 Master

### EventsizeDIM

EVENT_SIZE_TYPE	SIZEDESC
1 Small	<=10 Students
2 Medium	>21 and <= 80 Students
3 Large	>80 Students

### SemesterDIM

SEMID	SEM_DESC	BEGIN_DATE	END_DATE
1 S1	Semester1	01-MAR-20	30-JUN-20
2 S2	Semester2	01-AUG-20	30-NOV-20
3 WS	Winter Semester	01-JUL-20	31-JUL-20
4 SS	Summer Semester	01-DEC-20	28-FEB-20

### CampusDIM

CAMPUS
1 Clayton
2 Caulfield
3 City
4 Peninsula

## Fact Table

	CAMPUS	CATEG...	COURSELEVEL	SEMID	EVEN...	NO_REGISTERED...	TOTAL_EXPENSES
1	Clayton	Academ...	Bachelor	S1	Small	5	5
2	Caulf...	Specia...	Bachelor	S2	Medium	15	151
3	Clayton	Specia...	Diploma	S2	Medium	23	115
4	Clayton	Specia...	Diploma	S1	Large	3	24
5	Clayton	Academ...	Master	S1	Small	2	5
6	Clayton	Academ...	Diploma	S1	Small	3	10
7	Penin...	Academ...	Diploma	S1	Medium	2	10
8	Clayton	Spirit...	Bachelor	S1	Large	23	276
9	Clayton	Academ...	Bachelor	S1	Medium	4	20
10	Clayton	Specia...	Master	S2	Medium	27	155
11	Penin...	Specia...	Diploma	S2	Medium	6	82
12	Caulf...	Specia...	Diploma	S2	Medium	5	50
13	Clayton	Specia...	Master	S2	Large	10	150
14	Clayton	Specia...	Master	S1	Large	11	116
15	Clayton	Spirit...	Master	S1	Large	5	60
16	Clayton	Specia...	Bachelor	S1	Large	9	86
17	Clayton	Spirit...	Diploma	S1	Large	12	144
18	Caulf...	Specia...	Master	S2	Large	2	24
19	Caulf...	Specia...	Master	S2	Medium	14	150
20	City	Specia...	Master	S2	Medium	5	110
21	City	Specia...	Bachelor	S2	Medium	7	145
22	Penin...	Spirit...	Diploma	S2	Medium	5	0
23	Penin...	Specia...	Master	S2	Medium	7	84
24	Clayton	Academ...	Master	S1	Medium	21	105
25	City	Cultur...	Bachelor	S1	Small	6	8

## Temporary Fact Table

	REGISTRATIONID	STARTDATE	MAXNUMBERINVOLVED	CAMPUS	CATEGORY	COURSELEVEL	EVENTFEE	SEMID	EVENT_SIZE_TYPE
1	MCER20190001	19-MAR-15	30	Clayton	Academic Club	Master	5	S1	Medium
2	MCER20190002	19-MAR-18	30	Clayton	Academic Club	Master	5	S1	Medium
3	MCER20190003	19-MAR-22	70	Clayton	Academic Club	Master	5	S1	Medium
4	MCER20190004	19-MAR-25	70	Clayton	Academic Club	Master	5	S1	Medium
5	MCER20190005	19-MAR-27	80	Clayton	Academic Club	Master	5	S1	Medium
6	MCER20190006	19-MAR-29	100	Peninsula	Special Interest Club	Master	12	S1	Large
7	MCER20190007	19-APR-03	110	Clayton	Special Interest Club	Master	15	S1	Large
8	MCER20190008	19-APR-09	100	Clayton	Special Interest Club	Master	8	S1	Large
9	MCER20190009	19-APR-10	120	Clayton	Spiritual Club	Master	12	S1	Large
10	MCER20190010	19-APR-15	20	Clayton	Academic Club	Master	0	S1	Small