DATABASE…..

```
CREATE TABLE THEMEPARK (
PARK_CODE VARCHAR(10) NOT NULL PRIMARY KEY,
PARK_NAME VARCHAR(35) NOT NULL,
PARK_CITY VARCHAR(50),
PARK_COUNTRY CHAR(2) NOT NULL);

CREATE TABLE EMPLOYEE (
EMP_NUM NUMERIC(4) PRIMARY KEY,
EMP_TITLE VARCHAR(4),
EMP_LNAME VARCHAR(15) NOT NULL,
EMP_FNAME VARCHAR(15) NOT NULL,
EMP_DOB DATE NOT NULL,
EMP_HIRE_DATE DATE,
EMP_AREA_CODE VARCHAR(4) NOT NULL,
EMP_PHONE VARCHAR(12) NOT NULL,
PARK_CODE VARCHAR(10),
INDEX (PARK_CODE),
CONSTRAINT FK_EMP_PARK FOREIGN KEY(PARK_CODE) REFERENCES
THEMEPARK(PARK_CODE));

CREATE TABLE TICKET (
TICKET_NO NUMERIC(10) PRIMARY KEY,
TICKET_PRICE NUMERIC(4,2) DEFAULT 00.00 NOT NULL,
TICKET_TYPE VARCHAR(10),
PARK_CODE VARCHAR(10),
INDEX (PARK_CODE),
CONSTRAINT FK_TICKET_PARK FOREIGN KEY(PARK_CODE) REFERENCES
THEMEPARK(PARK_CODE));

CREATE TABLE ATTRACTION (
ATTRACT_NO NUMERIC(10) PRIMARY KEY,
ATTRACT_NAME VARCHAR(35),
ATTRACT_AGE NUMERIC(3) DEFAULT 0 NOT NULL,
ATTRACT_CAPACITY NUMERIC(3) NOT NULL,
PARK_CODE VARCHAR(10),
INDEX (PARK_CODE),
CONSTRAINT FK_ATTRACT_PARK FOREIGN KEY(PARK_CODE) REFERENCES
THEMEPARK(PARK_CODE));

CREATE TABLE HOURS (
EMP_NUM NUMERIC(4),
ATTRACT_NO NUMERIC(10),
```

```sql
HOURS_PER_ATTRACT NUMERIC(2) NOT NULL,
HOUR_RATE NUMERIC(4,2) NOT NULL,
DATE_WORKED DATE NOT NULL,
INDEX (EMP_NUM),
INDEX (ATTRACT_NO),
CONSTRAINT PK_HOURS PRIMARY KEY(EMP_NUM, ATTRACT_NO, DATE_WORKED),
CONSTRAINT FK_HOURS_EMP  FOREIGN KEY   (EMP_NUM) REFERENCES
EMPLOYEE(EMP_NUM),
CONSTRAINT FK_HOURS_ATTRACT FOREIGN KEY (ATTRACT_NO) REFERENCES
ATTRACTION(ATTRACT_NO));

CREATE TABLE SALES (
TRANSACTION_NO NUMERIC PRIMARY KEY,
PARK_CODE VARCHAR(10),
SALE_DATE DATE NOT NULL,
INDEX (PARK_CODE),
CONSTRAINT FK_SALES_PARK FOREIGN KEY(PARK_CODE) REFERENCES
THEMEPARK(PARK_CODE));

CREATE TABLE SALES_LINE (
TRANSACTION_NO NUMERIC,
LINE_NO NUMERIC(2,0) NOT NULL,
TICKET_NO NUMERIC(10)  NOT NULL,
LINE_QTY NUMERIC(4) DEFAULT 0 NOT NULL,
LINE_PRICE NUMERIC(9,2) DEFAULT 0.00 NOT NULL,
INDEX (TRANSACTION_NO),
INDEX (TICKET_NO),
CONSTRAINT PK_SALES_LINE PRIMARY KEY (TRANSACTION_NO,LINE_NO),
CONSTRAINT FK_SALES_LINE_TICKET FOREIGN KEY (TICKET_NO) REFERENCES
TICKET(TICKET_NO),
CONSTRAINT FK_SALES_LINE_SALES FOREIGN KEY (TRANSACTION_NO)
REFERENCES SALES(TRANSACTION_NO)
);

/* CREATING AN INDEX ON EMP_LNAME IN THE  EMPLOYEE TABLE  */

CREATE INDEX EMP_LNAME_INDEX ON EMPLOYEE(EMP_LNAME(8));


/* ThemePark rows                                        */
INSERT INTO THEMEPARK VALUES ('FR1001','FairyLand','PARIS','FR');
INSERT INTO THEMEPARK VALUES ('NL1202','Efling','NOORD','NL');
INSERT INTO THEMEPARK VALUES ('SP4533','AdventurePort','BARCELONA','SP');
```

```
INSERT INTO THEMEPARK VALUES ('SW2323','Labyrinthe','LAUSANNE','SW');
INSERT INTO THEMEPARK VALUES ('UK2622','MiniLand','WINDSOR','UK');
INSERT INTO THEMEPARK VALUES ('UK3452','PleasureLand','STOKE','UK');
INSERT INTO THEMEPARK VALUES ('ZA1342','GoldTown','JOHANNESBURG','ZA');

/* Employee rows                                          */
INSERT INTO EMPLOYEE VALUES
(100,'Ms','Calderdale','Emma','1972-06-15','1992-03-15','0181','324-9134','FR1001');
INSERT INTO EMPLOYEE VALUES
(101,'Ms','Ricardo','Marshel','1978-03-19','1996-04-25','0181','324-4472','UK3452');
INSERT INTO EMPLOYEE VALUES
(102,'Mr','Arshad','Arif','1969-11-14','1990-12-20','7253','675-8993','FR1001');
INSERT INTO EMPLOYEE VALUES
(103,'Ms','Roberts','Anne','1974-10-16','1994-08-16','0181','898-3456','UK3452');
INSERT INTO EMPLOYEE VALUES
(104,'Mr','Denver','Enrica','1980-11-08','2001-10-20','7253','504-4434','ZA1342');
INSERT INTO EMPLOYEE VALUES
(105,'Ms','Namowa','Mirrelle','1990-03-14','2006-11-08','0181','890-3243','FR1001');
INSERT INTO EMPLOYEE VALUES
(106,'Mrs','Smith','Gemma','1968-02-12','1989-01-05','0181','324-7845','ZA1342');


/* Ticket rows                                  */
INSERT INTO TICKET VALUES (11001,24.99,'Adult',     'SP4533');
INSERT INTO TICKET VALUES (11002,14.99,'Child',     'SP4533');
INSERT INTO TICKET VALUES (11003,10.99,'Senior','SP4533');
INSERT INTO TICKET VALUES (13001,18.99,'Child','FR1001');
INSERT INTO TICKET VALUES (13002,34.99,'Adult','FR1001');
INSERT INTO TICKET VALUES (13003,20.99,'Senior','FR1001');
INSERT INTO TICKET VALUES (67832,18.56,'Child','ZA1342');
INSERT INTO TICKET VALUES (67833,28.67,'Adult','ZA1342');
INSERT INTO TICKET VALUES (67855,12.12,'Senior','ZA1342');
INSERT INTO TICKET VALUES (88567,22.50,'Child','UK3452');
INSERT INTO TICKET VALUES (88568,42.10,'Adult','UK3452');
INSERT INTO TICKET VALUES (89720,10.99,'Senior','UK3452');

/* Attraction rows                                  */

INSERT INTO ATTRACTION VALUES (10034,'ThunderCoaster',11,34,'FR1001');
INSERT INTO ATTRACTION VALUES (10056,'SpinningTeacups',4,62,'FR1001');
INSERT INTO ATTRACTION VALUES (10067,'FlightToStars',11,24,'FR1001');
INSERT INTO ATTRACTION VALUES (10078,'Ant-Trap',23,30,'FR1001');
INSERT INTO ATTRACTION VALUES (10098,'Carnival',3,120,'FR1001');
INSERT INTO ATTRACTION VALUES (20056,'3D-Lego_Show',3,200,'UK3452');
```

```sql
INSERT INTO ATTRACTION VALUES (30011,'BlackHole2',12,34,'UK3452');
INSERT INTO ATTRACTION VALUES (30012,'Pirates',10,42,'UK3452');
INSERT INTO ATTRACTION VALUES (30044,'UnderSeaWord',4,80,'UK3452');
INSERT INTO ATTRACTION VALUES (98764,'GoldRush',5,80,'ZA1342');
/* Attraction with no name */
INSERT INTO ATTRACTION VALUES (10082,NULL,10,40,'ZA1342');


/* hours rows                                    */

INSERT INTO HOURS VALUES (100,10034,6,6.5,'2007-05-18');
INSERT INTO HOURS VALUES (100,10034,6,6.5,'2007-05-20');
INSERT INTO HOURS VALUES (101,10034,6,6.5,'2007-05-18');
INSERT INTO HOURS VALUES (102,30012,3,5.99,'2007-05-23');
INSERT INTO HOURS VALUES (102,30044,6,5.99,'2007-05-21');
INSERT INTO HOURS VALUES (102,30044,3,5.99,'2007-05-22');
INSERT INTO HOURS VALUES (104,30011,6,7.2,'2007-05-21');
INSERT INTO HOURS VALUES (104,30012,6,7.2,'2007-05-22');
INSERT INTO HOURS VALUES (105,10078,3,8.5,'2007-05-18');
INSERT INTO HOURS VALUES (105,10098,3,8.5,'2007-05-18');
INSERT INTO HOURS VALUES (105,10098,6,8.5,'2007-05-19');


/* SALES rows                                    */

INSERT INTO SALES VALUES (12781,'FR1001','2007-05-18');
INSERT INTO SALES VALUES (12782,'FR1001','2007-05-18');
INSERT INTO SALES VALUES (12783,'FR1001','2007-05-18');
INSERT INTO SALES VALUES (12784,'FR1001','2007-05-18');
INSERT INTO SALES VALUES (12785,'FR1001','2007-05-18');
INSERT INTO SALES VALUES (12786,'FR1001','2007-05-18');
INSERT INTO SALES VALUES (34534,'UK3452','2007-05-18');
INSERT INTO SALES VALUES (34535,'UK3452','2007-05-18');
INSERT INTO SALES VALUES (34536,'UK3452','2007-05-18');
INSERT INTO SALES VALUES (34537,'UK3452','2007-05-18');
INSERT INTO SALES VALUES (34538,'UK3452','2007-05-18');
INSERT INTO SALES VALUES (34539,'UK3452','2007-05-18');
INSERT INTO SALES VALUES (34540,'UK3452','2007-05-18');
INSERT INTO SALES VALUES (34541,'UK3452','2007-05-18');
INSERT INTO SALES VALUES (67589,'ZA1342','2007-05-18');
INSERT INTO SALES VALUES (67590,'ZA1342','2007-05-18');
INSERT INTO SALES VALUES (67591,'ZA1342','2007-05-18');
INSERT INTO SALES VALUES (67592,'ZA1342','2007-05-18');
INSERT INTO SALES VALUES (67593,'ZA1342','2007-05-18');
```
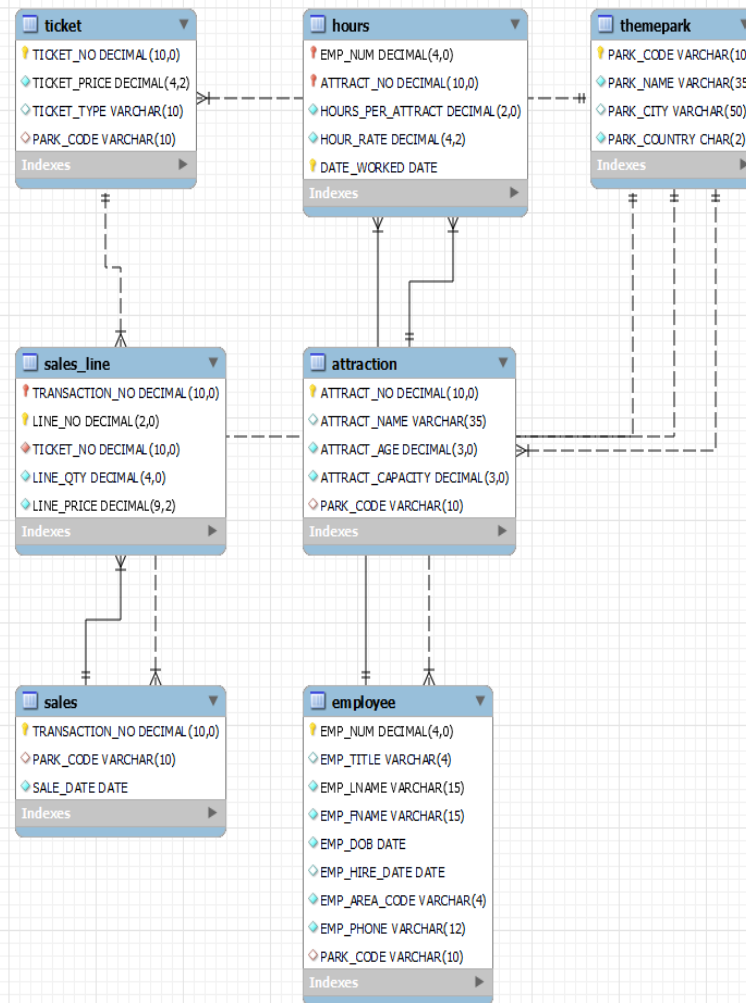
```
/* SALES_LINE rows                                  */


INSERT INTO SALES_LINE VALUES (12781,1,13002,2,69.98);
INSERT INTO SALES_LINE VALUES (12781,2,13001,1,14.99);
INSERT INTO SALES_LINE VALUES (12782,1,13002,2,69.98);
INSERT INTO SALES_LINE VALUES (12783,1,13003,2,41.98);
INSERT INTO SALES_LINE VALUES (12784,2,13001,1,14.99);
INSERT INTO SALES_LINE VALUES (12785,1,13001,1,14.99);
INSERT INTO SALES_LINE VALUES (12785,2,13002,1,34.99);
INSERT INTO SALES_LINE VALUES (12785,3,13002,4,139.96);
INSERT INTO SALES_LINE VALUES (34534,1,88568,4,168.40);
INSERT INTO SALES_LINE VALUES (34534,2,88567,1,22.50);
INSERT INTO SALES_LINE VALUES (34534,3,89720,2,21.98);
INSERT INTO SALES_LINE VALUES (34535,1,88568,2,84.20);
INSERT INTO SALES_LINE VALUES (34536,1,89720,2,21.98);
INSERT INTO SALES_LINE VALUES (34537,1,88568,2,84.20);
INSERT INTO SALES_LINE VALUES (34537,2,88567,1,22.50);
INSERT INTO SALES_LINE VALUES (34538,1,89720,2,21.98);
INSERT INTO SALES_LINE VALUES (34539,1,89720,2,21.98);
INSERT INTO SALES_LINE VALUES (34539,2,88568,2,84.20);
INSERT INTO SALES_LINE VALUES (34540,1,88568,4,168.40);
INSERT INTO SALES_LINE VALUES (34540,2,88567,1,22.50);
INSERT INTO SALES_LINE VALUES (34540,3,89720,2,21.98);
INSERT INTO SALES_LINE VALUES (34541,1,88568,2,84.20);
INSERT INTO SALES_LINE VALUES (67589,1,67833,2,57.34);
INSERT INTO SALES_LINE VALUES (67589,2,67832,2,37.12);
INSERT INTO SALES_LINE VALUES (67590,1,67833,2,57.34);
INSERT INTO SALES_LINE VALUES (67590,2,67832,2,37.12);
INSERT INTO SALES_LINE VALUES (67591,1,67832,1,18.56);
INSERT INTO SALES_LINE VALUES (67591,2,67855,1,12.12);
INSERT INTO SALES_LINE VALUES (67592,1,67833,4,114.68);
INSERT INTO SALES_LINE VALUES (67593,1,67833,2,57.34);
INSERT INTO SALES_LINE VALUES (67593,2,67832,2,37.12);

commit;
```

EDR DIAGRAM………

ticket
- TICKET_NO DECIMAL (10,0)
- TICKET_PRICE DECIMAL (4,2)
- TICKET_TYPE VARCHAR(10)
- PARK_CODE VARCHAR(10)
- Indexes

hours
- EMP_NUM DECIMAL(4,0)
- ATTRACT_NO DECIMAL(10,0)
- HOURS_PER_ATTRACT DECIMAL (2,0)
- HOUR_RATE DECIMAL (4,2)
- DATE_WORKED DATE
- Indexes

themepark
- PARK_CODE VARCHAR(10)
- PARK_NAME VARCHAR(35)
- PARK_CITY VARCHAR(50)
- PARK_COUNTRY CHAR(2)
- Indexes

sales_line
- TRANSACTION_NO DECIMAL (10,0)
- LINE_NO DECIMAL (2,0)
- TICKET_NO DECIMAL (10,0)
- LINE_QTY DECIMAL (4,0)
- LINE_PRICE DECIMAL(9,2)
- Indexes

attraction
- ATTRACT_NO DECIMAL(10,0)
- ATTRACT_NAME VARCHAR(35)
- ATTRACT_AGE DECIMAL(3,0)
- ATTRACT_CAPACITY DECIMAL (3,0)
- PARK_CODE VARCHAR(10)
- Indexes

sales
- TRANSACTION_NO DECIMAL (10,0)
- PARK_CODE VARCHAR(10)
- SALE_DATE DATE
- Indexes

employee
- EMP_NUM DECIMAL(4,0)
- EMP_TITLE VARCHAR(4)
- EMP_LNAME VARCHAR(15)
- EMP_FNAME VARCHAR(15)
- EMP_DOB DATE
- EMP_HIRE_DATE DATE
- EMP_AREA_CODE VARCHAR(4)
- EMP_PHONE VARCHAR(12)
- PARK_CODE VARCHAR(10)
- Indexes

PRACTICES………..

select * from ticket;

	TICKET_NO	TICKET_PRICE	TICKET_TYPE	PARK_CODE
▶	11001	24.99	Adult	SP4533
	11002	14.99	Child	SP4533
	11003	10.99	Senior	SP4533
	13001	18.99	Child	FR1001
	13002	34.99	Adult	FR1001
	13003	20.99	Senior	FR1001
	67832	18.56	Child	ZA1342
	67833	28.67	Adult	ZA1342
	67855	12.12	Senior	ZA1342
	88567	22.50	Child	UK3452
	88568	42.10	Adult	UK3452
	89720	10.99	Senior	UK3452
*	NULL	NULL	NULL	NULL

Select TICKET_NO, TICKET_TYPE, PARK_CODE,
ROUND(TICKET_PRICE,1),TICKET_PRICE + ROUND((TICKET_PRICE * 0.1),2) AS
INCREASE_10PERCENT
FROM TICKET;

	TICKET_NO	TICKET_TYPE	PARK_CODE	ROUND(TICKET_PRICE,1)	INCREASE_10PERCENT
▶	11001	Adult	SP4533	25.0	27.49
	11002	Child	SP4533	15.0	16.49
	11003	Senior	SP4533	11.0	12.09
	13001	Child	FR1001	19.0	20.89
	13002	Adult	FR1001	35.0	38.49
	13003	Senior	FR1001	21.0	23.09
	67832	Child	ZA1342	18.6	20.42
	67833	Adult	ZA1342	28.7	31.54
	67855	Senior	ZA1342	12.1	13.33
	88567	Child	UK3452	22.5	24.75
	88568	Adult	UK3452	42.1	46.31
	89720	Senior	UK3452	11.0	12.09

SELECT * FROM TICKET WHERE TICKET_PRICE > 20;

	TICKET_NO	TICKET_PRICE	TICKET_TYPE	PARK_CODE
▶	11001	24.99	Adult	SP4533
	13002	34.99	Adult	FR1001
	13003	20.99	Senior	FR1001
	67833	28.67	Adult	ZA1342
	88567	22.50	Child	UK3452
	88568	42.10	Adult	UK3452
*	NULL	NULL	NULL	NULL

SELECT * FROM TICKET WHERE TICKET_PRICE BETWEEN 30 AND 50;

	TICKET_NO	TICKET_PRICE	TICKET_TYPE	PARK_CODE
▶	13002	34.99	Adult	FR1001
	88568	42.10	Adult	UK3452
*	NULL	NULL	NULL	NULL

SELECT EMP_NUM, ATTRACT_NO, HOURS_PER_ATTRACT FROM HOURS WHERE HOURS_PER_ATTRACT between 5 AND 10;

	EMP_NUM	ATTRACT_NO	HOURS_PER_ATTRACT
▶	100	10034	6
	100	10034	6
	101	10034	6
	102	30044	6
	104	30011	6
	104	30012	6
	105	10098	6

SELECT * FROM SALES_LINE WHERE TRANSACTION_NO IN (12781, 67593);

	TRANSACTION_NO	LINE_NO	TICKET_NO	LINE_QTY	LINE_PRICE
▶	12781	1	13002	2	69.98
	12781	2	13001	1	14.99
	67593	1	67833	2	57.34
	67593	2	67832	2	37.12
*	NULL	NULL	NULL	NULL	NULL

SELECT * FROM TICKET WHERE TICKET_TYPE IN('senior', 'child');

TICKET_NO	TICKET_PRICE	TICKET_TYPE	PARK_CODE
11002	14.99	Child	SP4533
11003	10.99	Senior	SP4533
13001	18.99	Child	FR1001
13003	20.99	Senior	FR1001
67832	18.56	Child	ZA1342
67855	12.12	Senior	ZA1342
88567	22.50	Child	UK3452
89720	10.99	Senior	UK3452
NULL	NULL	NULL	NULL

SELECT * FROM EMPLOYEE WHERE EMP_FNAME LIKE 'A%';

EMP_NUM	EMP_TITLE	EMP_LNAME	EMP_FNAME	EMP_DOB	EMP_HIRE_DATE	EMP_AREA_CODE	EMP_PHONE	PARK_CODE
102	Mr	Arshad	Arif	1969-11-14	1990-12-20	7253	675-8993	FR1001
103	Ms	Roberts	Anne	1974-10-16	1994-08-16	0181	898-3456	UK3452
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

SELECT * FROM THEMEPARK WHERE PARK_NAME LIKE '%Land';

PARK_CODE	PARK_NAME	PARK_CITY	PARK_COUNTRY
FR1001	FairyLand	PARIS	FR
UK2622	MiniLand	WINDSOR	UK
UK3452	PleasureLand	STOKE	UK
NULL	NULL	NULL	NULL

SELECT * FROM ATTRACTION WHERE ATTRACT_NAME IS NULL;

ATTRACT_NO	ATTRACT_NAME	ATTRACT_AGE	ATTRACT_CAPACITY	PARK_CODE
10082	NULL	10	40	ZA1342
NULL	NULL	NULL	NULL	NULL

SELECT EMP_NUM, ATTRACT_NO FROM HOURS WHERE HOURS_PER_ATTRACT > 3 AND DATE_WORKED > '2007-05-18';

EMP_NUM	ATTRACT_NO
100	10034
102	30044
104	30011
104	30012
105	10098

SELECT * FROM ATTRACTION WHERE ATTRACT_AGE <=10 AND ATTRACT_CAPACITY < 100 AND ATTRACT_NAME IS NOT NULL;

ATTRACT_NO	ATTRACT_NAME	ATTRACT_AGE	ATTRACT_CAPACITY	PARK_CODE
10056	SpinningTeacups	4	62	FR1001
30012	Pirates	10	42	UK3452
30044	UnderSeaWord	4	80	UK3452
98764	GoldRush	5	80	ZA1342
NULL	NULL	NULL	NULL	NULL

SELECT PARK_NAME, PARK_COUNTRY FROM THEMEPARK WHERE PARK_COUNTRY ='FR' OR PARK_COUNTRY = 'UK';

PARK_NAME	PARK_COUNTRY
FairyLand	FR
MiniLand	UK
PleasureLand	UK

SELECT * FROM EMPLOYEE WHERE NOT(EMP_NUM = 106);

EMP_NUM	EMP_TITLE	EMP_LNAME	EMP_FNAME	EMP_DOB	EMP_HIRE_DATE	EMP_AREA_CODE	EMP_PHONE	PARK_CODE
100	Ms	Calderdale	Emma	1972-06-15	1992-03-15	0181	324-9134	FR1001
101	Ms	Ricardo	Marshel	1978-03-19	1996-04-25	0181	324-4472	UK3452
102	Mr	Arshad	Arif	1969-11-14	1990-12-20	7253	675-8993	FR1001
103	Ms	Roberts	Anne	1974-10-16	1994-08-16	0181	898-3456	UK3452
104	Mr	Denver	Enrica	1980-11-08	2001-10-20	7253	504-4434	ZA1342
105	Ms	Namowa	Mirrelle	1990-03-14	2006-11-08	0181	890-3243	FR1001
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

SELECT * FROM EMPLOYEE ORDER BY EMP_HIRE_DATE DESC;

EMP_NUM	EMP_TITLE	EMP_LNAME	EMP_FNAME	EMP_DOB	EMP_HIRE_DATE	EMP_AREA_CODE	EMP_PHONE	PARK_CODE
105	Ms	Namowa	Mirrelle	1990-03-14	2006-11-08	0181	890-3243	FR1001
104	Mr	Denver	Enrica	1980-11-08	2001-10-20	7253	504-4434	ZA1342
101	Ms	Ricardo	Marshel	1978-03-19	1996-04-25	0181	324-4472	UK3452
103	Ms	Roberts	Anne	1974-10-16	1994-08-16	0181	898-3456	UK3452
100	Ms	Calderdale	Emma	1972-06-15	1992-03-15	0181	324-9134	FR1001
102	Mr	Arshad	Arif	1969-11-14	1990-12-20	7253	675-8993	FR1001
106	Mrs	Smith	Gemma	1968-02-12	1989-01-05	0181	324-7845	ZA1342
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

SELECT * FROM EMPLOYEE ORDER BY EMP_LNAME, EMP_FNAME;

EMP_NUM	EMP_TITLE	EMP_LNAME	EMP_FNAME	EMP_DOB	EMP_HIRE_DATE	EMP_AREA_CODE	EMP_PHONE	PARK_CODE
102	Mr	Arshad	Arif	1969-11-14	1990-12-20	7253	675-8993	FR1001
100	Ms	Calderdale	Emma	1972-06-15	1992-03-15	0181	324-9134	FR1001
104	Mr	Denver	Enrica	1980-11-08	2001-10-20	7253	504-4434	ZA1342
105	Ms	Namowa	Mirrelle	1990-03-14	2006-11-08	0181	890-3243	FR1001
101	Ms	Ricardo	Marshel	1978-03-19	1996-04-25	0181	324-4472	UK3452
103	Ms	Roberts	Anne	1974-10-16	1994-08-16	0181	898-3456	UK3452
106	Mrs	Smith	Gemma	1968-02-12	1989-01-05	0181	324-7845	ZA1342
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

SELECT TICKET_TYPE, PARK_CODE FROM TICKET WHERE (TICKET_PRICE > 15 AND TICKET_TYPE LIKE 'child') ORDER BY TICKET_NO DESC;

TICKET_TYPE	PARK_CODE
Child	UK3452
Child	ZA1342
Child	FR1001

SELECT DISTINCT(PARK_CODE) FROM ATTRACTION;

PARK_CODE
FR1001
UK3452
ZA1342

QUESTION PART……………………

QUESTION: Write a query to display all Theme Parks except those in the UK?

SELECT * FROM THEMEPARK WHERE PARK_COUNTRY <> 'UK';

PARK_CODE	PARK_NAME	PARK_CITY	PARK_COUNTRY
FR1001	FairyLand	PARIS	FR
NL1202	Efling	NOORD	NL
SP4533	AdventurePort	BARCELONA	SP
SW2323	Labyrinthe	LAUSANNE	SW
ZA1342	GoldTown	JOHANNESBURG	ZA
NULL	NULL	NULL	NULL

QUESTION 2: Write a query to display all the sales that occurred on the 18th May 2007?

SELECT * FROM SALES WHERE SALE_DATE IN('2007-05-18');

TRANSACTION_NO	PARK_CODE	SALE_DATE
12781	FR1001	2007-05-18
12782	FR1001	2007-05-18
12783	FR1001	2007-05-18
12784	FR1001	2007-05-18
12785	FR1001	2007-05-18
12786	FR1001	2007-05-18
34534	UK3452	2007-05-18
34535	UK3452	2007-05-18
34536	UK3452	2007-05-18
34537	UK3452	2007-05-18
34538	UK3452	2007-05-18
34539	UK3452	2007-05-18
34540	UK3452	2007-05-18
34541	UK3452	2007-05-18
67589	ZA1342	2007-05-18
67590	ZA1342	2007-05-18
67591	ZA1342	2007-05-18
67592	ZA1342	2007-05-18
67593	ZA1342	2007-05-18
NULL	NULL	NULL

QUESTION3: Write a query to display the ticket prices between €20 AND €30?

SELECT * FROM TICKET WHERE TICKET_PRICE BETWEEN 20 AND 30;

TICKET_NO	TICKET_PRICE	TICKET_TYPE	PARK_CODE
11001	24.99	Adult	SP4533
13003	20.99	Senior	FR1001
67833	28.67	Adult	ZA1342
88567	22.50	Child	UK3452
NULL	NULL	NULL	NULL

QUESTION : Display all attractions that have a capacity of more than 60 at the Theme Park FR1001?

SELECT * FROM ATTRACTION WHERE ATTRACT_CAPACITY > 60 AND PARK_CODE = 'FR1001';

ATTRACT_NO	ATTRACT_NAME	ATTRACT_AGE	ATTRACT_CAPACITY	PARK_CODE
10056	SpinningTeacups	4	62	FR1001
10098	Carnival	3	120	FR1001
NULL	NULL	NULL	NULL	NULL

QUESTION: Write a query to display all unique employees that exist in the HOURS table?

SELECT distinct * FROM HOURS;

EMP_NUM	ATTRACT_NO	HOURS_PER_ATTRACT	HOUR_RATE	DATE_WORKED
100	10034	6	6.50	2007-05-18
100	10034	6	6.50	2007-05-20
101	10034	6	6.50	2007-05-18
102	30012	3	5.99	2007-05-23
102	30044	6	5.99	2007-05-21
102	30044	3	5.99	2007-05-22
104	30011	6	7.20	2007-05-21
104	30012	6	7.20	2007-05-22
105	10078	3	8.50	2007-05-18
105	10098	3	8.50	2007-05-18
105	10098	6	8.50	2007-05-19
NULL	NULL	NULL	NULL	NULL

QUESTION: Display all information from the SALES table in descending order of the sale date?

SELECT * FROM SALES ORDER BY SALE_DATE DESC;

TRANSACTION_NO	PARK_CODE	SALE_DATE
12781	FR1001	2007-05-18
12782	FR1001	2007-05-18
12783	FR1001	2007-05-18
12784	FR1001	2007-05-18
12785	FR1001	2007-05-18
12786	FR1001	2007-05-18
34534	UK3452	2007-05-18
34535	UK3452	2007-05-18
34536	UK3452	2007-05-18
34537	UK3452	2007-05-18
34538	UK3452	2007-05-18
34539	UK3452	2007-05-18
34540	UK3452	2007-05-18
34541	UK3452	2007-05-18
67589	ZA1342	2007-05-18
67590	ZA1342	2007-05-18
67591	ZA1342	2007-05-18
67592	ZA1342	2007-05-18
67593	ZA1342	2007-05-18
NULL	NULL	NULL

Aggregate Functions

COUNT

SELECT COUNT(ATTRACT_NO) FROM ATTRACTION;

	COUNT(ATTRACT_NO)
▶	11

SELECT COUNT(distinct(PARK_CODE)) FROM ATTRACTION;

	COUNT(distinct(PARK_CODE))
▶	3

Task 1 Write a query that displays the number of distinct employees in the HOURS table. You should label the column "Number of Employees".
ci

SELECT COUNT(distinct(EMP_NUM)) FROM HOURS;

	COUNT(distinct(EMP_NUM))
▶	5

SELECT COUNT(*) FROM ATTRACTION;

	COUNT(*)
▶	11

MAX and MIN:

SELECT MIN(TICKET_PRICE) as Min_Price ,max(TICKET_PRICE) as MAx_Price FROM TICKET;

	Min_Price	MAx_Price
▶	10.99	42.10

SUM and AVG:

SELECT AVG(LINE_PRICE) AS AVERAGE, sum(LINE_QTY) AS SUM FROM SALES_LINE;

	AVERAGE	sUM
▶	54.245161	61

GROUP BY:

SELECT PARK_CODE, MIN(TICKET_PRICE) AS MIN_PRICE , MAX(TICKET_PRICE) AS
MAX_PRICE
FROM TICKET GROUP BY PARK_CODE;

PARK_CODE	MIN_PRICE	MAX_PRICE
FR1001	18.99	34.99
SP4533	10.99	24.99
UK3452	10.99	42.10
ZA1342	12.12	28.67

HAVING:

SELECT PARK_CODE, AVG(TICKET_PRICE)
FROM TICKET
GROUP BY PARK_CODE
HAVING AVG(TICKET_PRICE) >= 24.99;

PARK_CODE	AVG(TICKET_PRICE)
FR1001	24.990000
UK3452	25.196667

Introduction to Joins:

SELECT * FROM TICKET;
SELECT THEMEPARK.PARK_CODE, PARK_NAME, TICKET_NO,
TICKET_TYPE, TICKET_PRICE
FROM THEMEPARK, TICKET
WHERE THEMEPARK.PARK_CODE = TICKET.PARK_CODE

PARK_CODE	PARK_NAME	TICKET_NO	TICKET_TYPE	TICKET_PRICE
SP4533	AdventurePort	11001	Adult	24.99
SP4533	AdventurePort	11002	Child	14.99
SP4533	AdventurePort	11003	Senior	10.99
FR1001	FairyLand	13001	Child	18.99
FR1001	FairyLand	13002	Adult	34.99
FR1001	FairyLand	13003	Senior	20.99
ZA1342	GoldTown	67832	Child	18.56
ZA1342	GoldTown	67833	Adult	28.67
ZA1342	GoldTown	67855	Senior	12.12
UK3452	PleasureLand	88567	Child	22.50
UK3452	PleasureLand	88568	Adult	42.10
UK3452	PleasureLand	89720	Senior	10.99

SELECT THEMEPARK.PARK_CODE, PARK_NAME, ATTRACT_NAME,
ATTRACT_CAPACITY
FROM THEMEPARK, ATTRACTION
WHERE THEMEPARK.PARK_CODE = ATTRACTION.PARK_CODE;

PARK_CODE	PARK_NAME	ATTRACT_NAME	ATTRACT_CAPACITY
FR1001	FairyLand	ThunderCoaster	34
FR1001	FairyLand	SpinningTeacups	62
FR1001	FairyLand	FlightToStars	24
FR1001	FairyLand	Ant-Trap	30
ZA1342	GoldTown	NULL	40
FR1001	FairyLand	Carnival	120
UK3452	PleasureLand	3D-Lego_Show	200
UK3452	PleasureLand	BlackHole2	34
UK3452	PleasureLand	Pirates	42
UK3452	PleasureLand	UnderSeaWord	80
ZA1342	GoldTown	GoldRush	80

Joining tables with an alias

SELECT P.PARK_CODE, PARK_NAME, TICKET_NO, TICKET_TYPE,
TICKET_PRICE
FROM THEMEPARK P, TICKET T
WHERE P.PARK_CODE =T.PARK_CODE;

PARK_CODE	PARK_NAME	TICKET_NO	TICKET_TYPE	TICKET_PRICE
SP4533	AdventurePort	11001	Adult	24.99
SP4533	AdventurePort	11002	Child	14.99
SP4533	AdventurePort	11003	Senior	10.99
FR1001	FairyLand	13001	Child	18.99
FR1001	FairyLand	13002	Adult	34.99
FR1001	FairyLand	13003	Senior	20.99
ZA1342	GoldTown	67832	Child	18.56
ZA1342	GoldTown	67833	Adult	28.67
ZA1342	GoldTown	67855	Senior	12.12
UK3452	PleasureLand	88567	Child	22.50
UK3452	PleasureLand	88568	Adult	42.10
UK3452	PleasureLand	89720	Senior	10.99

Natural Join:
SELECT TRANSACTION_NO, SALE_DATE, LINE_NO, LINE_QTY,

LINE_PRICE

FROM SALES NATURAL JOIN SALES_LINE;

TRANSACTION_NO	SALE_DATE	LINE_NO	LINE_QTY	LINE_PRICE
12781	2007-05-18	1	2	69.98
12781	2007-05-18	2	1	14.99
12782	2007-05-18	1	2	69.98
12783	2007-05-18	1	2	41.98
12784	2007-05-18	2	1	14.99
12785	2007-05-18	1	1	14.99
12785	2007-05-18	2	1	34.99
12785	2007-05-18	3	4	139.96
34534	2007-05-18	1	4	168.40
34534	2007-05-18	2	1	22.50
34534	2007-05-18	3	2	21.98
34535	2007-05-18	1	2	84.20
34536	2007-05-18	1	2	21.98
34537	2007-05-18	1	2	84.20
34537	2007-05-18	2	1	22.50
34538	2007-05-18	1	2	21.98
34539	2007-05-18	1	2	21.98

Join ON:

SELECT SALES.TRANSACTION_NO, SALE_DATE, LINE_NO,

LINE_QTY, LINE_PRICE
FROM SALES JOIN SALES_LINE
ON SALES.TRANSACTION_NO = SALES_LINE.TRANSACTION_NO;

TRANSACTION_NO	SALE_DATE	LINE_NO	LINE_QTY	LINE_PRICE
12781	2007-05-18	1	2	69.98
12781	2007-05-18	2	1	14.99
12782	2007-05-18	1	2	69.98
12783	2007-05-18	1	2	41.98
12784	2007-05-18	2	1	14.99
12785	2007-05-18	1	1	14.99
12785	2007-05-18	2	1	34.99
12785	2007-05-18	3	4	139.96
34534	2007-05-18	1	4	168.40
34534	2007-05-18	2	1	22.50
34534	2007-05-18	3	2	21.98
34535	2007-05-18	1	2	84.20
34536	2007-05-18	1	2	21.98
34537	2007-05-18	1	2	84.20
34537	2007-05-18	2	1	22.50
34538	2007-05-18	1	2	21.98
34539	2007-05-18	1	2	21.98
34539	2007-05-18	2	2	84.20
34540	2007-05-18	1	4	168.40
34540	2007-05-18	2	1	22.50
34540	2007-05-18	3	2	21.98
34541	2007-05-18	1	2	84.20
67589	2007-05-18	1	2	57.34
67589	2007-05-18	2	2	37.12

Result 55   Result 56 ×

The Outer Join:

SELECT THEMEPARK.PARK_CODE, PARK_NAME, ATTRACT_NAME
FROM THEMEPARK LEFT JOIN ATTRACTION ON
THEMEPARK.PARK_CODE = ATTRACTION.PARK_CODE;

PARK_CODE	PARK_NAME	ATTRACT_NAME
FR1001	FairyLand	ThunderCoaster
FR1001	FairyLand	SpinningTeacups
FR1001	FairyLand	FlightToStars
FR1001	FairyLand	Ant-Trap
FR1001	FairyLand	Carnival
NL1202	Efling	NULL
SP4533	AdventurePort	NULL
SW2323	Labyrinthe	NULL
UK2622	MiniLand	NULL
UK3452	PleasureLand	3D-Lego_Show
UK3452	PleasureLand	BlackHole2
UK3452	PleasureLand	Pirates
UK3452	PleasureLand	UnderSeaWord
ZA1342	GoldTown	NULL
ZA1342	GoldTown	GoldRush

RIGHT OUTER JOIN:

SELECT THEMEPARK.PARK_CODE, PARK_NAME, ATTRACT_NAME
FROM THEMEPARK RIGHT JOIN ATTRACTION ON
THEMEPARK.PARK_CODE = ATTRACTION.PARK_CODE;

PARK_CODE	PARK_NAME	ATTRACT_NAME
FR1001	FairyLand	ThunderCoaster
FR1001	FairyLand	SpinningTeacups
FR1001	FairyLand	FlightToStars
FR1001	FairyLand	Ant-Trap
ZA1342	GoldTown	NULL
FR1001	FairyLand	Carnival
UK3452	PleasureLand	3D-Lego_Show
UK3452	PleasureLand	BlackHole2
UK3452	PleasureLand	Pirates
UK3452	PleasureLand	UnderSeaWord
ZA1342	GoldTown	GoldRush

Cross Join:

SELECT * FROM SALES CROSS JOIN SALES_LINE;

TRANSACTION_NO	PARK_CODE	SALE_DATE	TRANSACTION_NO	LINE_NO	TICKET_NO	LINE_QTY	LI
67593	ZA1342	2007-05-18	12781	1	13002	2	69.
67592	ZA1342	2007-05-18	12781	1	13002	2	69.
67591	ZA1342	2007-05-18	12781	1	13002	2	69.
67590	ZA1342	2007-05-18	12781	1	13002	2	69.
67589	ZA1342	2007-05-18	12781	1	13002	2	69.
34541	UK3452	2007-05-18	12781	1	13002	2	69.
34540	UK3452	2007-05-18	12781	1	13002	2	69.
34539	UK3452	2007-05-18	12781	1	13002	2	69.
34538	UK3452	2007-05-18	12781	1	13002	2	69.
34537	UK3452	2007-05-18	12781	1	13002	2	69.
34536	UK3452	2007-05-18	12781	1	13002	2	69.
34535	UK3452	2007-05-18	12781	1	13002	2	69.
34534	UK3452	2007-05-18	12781	1	13002	2	69.
12786	FR1001	2007-05-18	12781	1	13002	2	69.
12785	FR1001	2007-05-18	12781	1	13002	2	69.
12784	FR1001	2007-05-18	12781	1	13002	2	69.
12783	FR1001	2007-05-18	12781	1	13002	2	69.
12782	FR1001	2007-05-18	12781	1	13002	2	69.
12781	FR1001	2007-05-18	12781	1	13002	2	69.
67593	ZA1342	2007-05-18	12781	2	13001	1	14.
67592	ZA1342	2007-05-18	12781	2	13001	1	14.
67591	ZA1342	2007-05-18	12781	2	13001	1	14.
67590	ZA1342	2007-05-18	12781	2	13001	1	14.
67589	ZA1342	2007-05-18	12781	2	13001	1	14.
34541	UK3452	2007-05-18	12781	2	13001	1	14.
34540	UK3452	2007-05-18	12781	2	13001	1	14.
34539	UK3452	2007-05-18	12781	2	13001	1	14.
34538	UK3452	2007-05-18	12781	2	13001	1	14.
34537	UK3452	2007-05-18	12781	2	13001	1	14.
34536	UK3452	2007-05-18	12781	2	13001	1	14.
34535	UK3452	2007-05-18	12781	2	13001	1	14.
34534	UK3452	2007-05-18	12781	2	13001	1	14.
12786	FR1001	2007-05-18	12781	2	13001	1	14.
12785	FR1001	2007-05-18	12781	2	13001	1	14.
12784	FR1001	2007-05-18	12781	2	13001	1	14.
12783	FR1001	2007-05-18	12781	2	13001	1	14.

SELECT Subqueries:

SELECT TICKET_NO, TICKET_TYPE, TICKET_PRICE
FROM TICKET
WHERE TICKET_PRICE >= (SELECT AVG(TICKET_PRICE) FROM TICKET);

TICKET_NO	TICKET_TYPE	TICKET_PRICE
11001	Adult	24.99
13002	Adult	34.99
67833	Adult	28.67
88567	Child	22.50
88568	Adult	42.10
NULL	NULL	NULL

IN Subqueries

SELECT DISTINCT EMP_NUM, EMP_LNAME, EMP_FNAME, PARK_NAME
FROM EMPLOYEE NATURAL JOIN HOURS NATURAL JOIN
ATTRACTION NATURAL JOIN THEMEPARK
WHERE PARK_CODE IN (SELECT THEMEPARK.PARK_CODE FROM THEMEPARK
WHERE PARK_NAME LIKE '%Fairy%');

EMP_NUM	EMP_LNAME	EMP_FNAME	PARK_NAME
100	Calderdale	Emma	FairyLand
105	Namowa	Mirrelle	FairyLand

HAVING Subqueries:

SELECT PARK_CODE, SUM(LINE_QTY)
FROM SALES_LINE NATURAL JOIN TICKET
GROUP BY PARK_CODE
HAVING SUM(LINE_QTY) > (SELECT AVG(LINE_QTY) FROM SALES_LINE);

PARK_CODE	SUM(LINE_QTY)
FR1001	14
UK3452	29
ZA1342	18

Multirow Subquery operator ALL.

SELECT TICKET_NO, PARK_CODE, TICKET_PRICE
FROM TICKET
WHERE TICKET_PRICE > ALL (SELECT TICKET_PRICE FROM TICKET
WHERE TICKET_TYPE = 'CHILD');

TICKET_NO	PARK_CODE	TICKET_PRICE
11001	SP4533	24.99
13002	FR1001	34.99
67833	ZA1342	28.67
88568	UK3452	42.10
NULL	NULL	NULL

Attribute list Subqueries

SELECT TICKET_NO, TICKET_PRICE,
(SELECT AVG(TICKET_PRICE) FROM TICKET) AS AVGPRICE,
TICKET_PRICE - (SELECT AVG(TICKET_PRICE) FROM TICKET) AS DIFF
FROM TICKET;

TICKET_NO	TICKET_PRICE	AVGPRICE	DIFF
11001	24.99	21.740000	3.250000
11002	14.99	21.740000	-6.750000
11003	10.99	21.740000	-10.750000
13001	18.99	21.740000	-2.750000
13002	34.99	21.740000	13.250000
13003	20.99	21.740000	-0.750000
67832	18.56	21.740000	-3.180000
67833	28.67	21.740000	6.930000
67855	12.12	21.740000	-9.620000
88567	22.50	21.740000	0.760000
88568	42.10	21.740000	20.360000
89720	10.99	21.740000	-10.750000

Correlated Subqueries
SELECT TRANSACTION_NO, LINE_NO, LINE_QTY, LINE_PRICE
FROM SALES_LINE SL
WHERE SL.LINE_QTY > (SELECT AVG(LINE_QTY)
FROM SALES_LINE SA
WHERE SA. TRANSACTION_NO = SL. TRANSACTION_NO);

TRANSACTION_NO	LINE_NO	LINE_QTY	LINE_PRICE
12781	1	2	69.98
12785	3	4	139.96
34534	1	4	168.40
34537	1	2	84.20
34540	1	4	168.40
NULL	NULL	NULL	NULL

Exercise:

Question 1: Write a query that displays the first name, last name of all employees who earn more than the average hourly rate. Do not display duplicate rows.

SELECT DISTINCT EMP_FNAME, EMP_LNAME FROM EMPLOYEE NATURAL JOIN HOURS WHERE HOUR_RATE > (SELECT AVG(HOUR_RATE) FROM HOURS);

	EMP_FNAME	EMP_LNAME
▶	Enrica	Denver
	Mirrelle	Namowa

Question 2. Write a query to display an employee's first name, last name and date worked which lists the difference between the number of hours an employee has worked on an attraction and the average hours worked on that attraction. Label this column 'DIFFERENCE' and the average hours column 'AVERAGE'.

SELECT EMP_FNAME,EMP_LNAME,DATE_WORKED,(SELECT AVG(HOURS_PER_ATTRACT) FROM HOURS) AS AVERAGE, HOURS_PER_ATTRACT -(SELECT AVG(HOURS_PER_ATTRACT) FROM HOURS) AS DIFFERENCE FROM EMPLOYEE NATURAL JOIN HOURS;

	EMP_FNAME	EMP_LNAME	DATE_WORKED	AVERAGE	DIFFERENCE
▶	Emma	Calderdale	2007-05-18	4.9091	1.0909
	Emma	Calderdale	2007-05-20	4.9091	1.0909
	Marshel	Ricardo	2007-05-18	4.9091	1.0909
	Arif	Arshad	2007-05-23	4.9091	-1.9091
	Arif	Arshad	2007-05-21	4.9091	1.0909
	Arif	Arshad	2007-05-22	4.9091	-1.9091
	Enrica	Denver	2007-05-21	4.9091	1.0909
	Enrica	Denver	2007-05-22	4.9091	1.0909
	Mirrelle	Namowa	2007-05-18	4.9091	-1.9091
	Mirrelle	Namowa	2007-05-18	4.9091	-1.9091
	Mirrelle	Namowa	2007-05-19	4.9091	1.0909

Question 3: Write a query to find the attract capacity, with a attract capacity less than or equal to the average attract capacity.

SELECT ATTRACT_CAPACITY FROM ATTRACTION WHERE ATTRACT_CAPACITY <= (SELECT AVG(ATTRACT_CAPACITY) FROM ATTRACTION);

ATTRACT_CAPACITY
34
62
24
30
40
34
42