Biking rental Data Base Management System

A rental management system for bikes is one in which the store maintains a guest record. In any category, a guest can book a bike, these records assist to generate the final bill to the front desk staff. And our scheme provides employees with control and coordination of jobs. The management structure of the bike rental data base should be able to meet the following requirements.

The system would be able to keep records of the customers and the bike registered to them, Customers should be able to book any category of bikes ,The manger will arrange cleaning and repair work on all bikes, You may have access to payment customer information, can access to information for workers

Tables

1. department (deptid ,deptname,phone,empid)

deptid	deptname	phone	empid
101	Managment	1321321	11011
201	booking	1321321	22011
301	repairing&cleaning	5321321	33011
NULL	NULL	NULL	NULL

2. employees (empid
   ,empFname,empLname,gender,empphone,bday,empsalary,deptid,bossid)

fk_employees_department foreign key (deptid)
fk_employees_boss foreign key (bossid)

empid	empFname	empLname	gender	empphone	bday	empsalary	deptid	bossid
11011	AK	Ma	M	3478596	1990-10-10	1200	101	NULL
22011	Ka	Na	M	3078547	1980-10-17	1000	101	11011
22021	Ni	Ra	F	3004267	1985-11-03	750	201	22011
22022	Sa	Ra	F	3960377	1985-11-03	700	201	22011
33011	Ni	Ka	F	3478596	1990-10-10	1200	101	11011
33021	El	Ha	M	3303168	1993-02-10	700	301	33011
33022	La	Yo	F	70891737	1998-11-30	700	301	33011
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

3. customer (custid,custFname,custLname,custphone,bday,nationality,idnumber)

custid	custFname	custLname	custphone	bday	nationality	idnumber
666601	Ma	To	72563478	1978-10-18	Canedian	CA1789654
666602	Ri	Ta	81776682	1998-07-08	Lebanesse	LB014503
666603	Da	Ks	76957135	1990-03-28	Lebanesse	LB369874
777701	Mi	Ma	2786417	1988-12-01	Lebanesse	LB012325
777702	Hr	Md	3978478	1996-02-18	lebanesse	LB036701
777703	Ve	So	1131197	1980-06-13	Lebanesse	LB852036
888801	Sa	St	7987256	1992-05-06	colombian	CO995114
888802	al	Az	3787851	1978-10-18	lebanesse	LB575351

4. category (catname,costperhour)

catname	costperhour
bicycle	18
mini-bicycle	12
mini-tricycle	20
tricycle	20
NULL	NULL

5. Bike (bike_id,modelname ,modelyear ,catname ,color)

fk_bike_category foreign key (catname)

bike_id	modelname	modelyear	catname	color
1231234	BMC	2014	mini-tricycle	Black
1454562	Giant	2012	mini-bicycle	Black
1474567	Giant	2015	mini-tricycle	White
1598202	BMC	2016	bicycle	Black
3217293	BMC	2016	mini-bicycle	White
3577625	Giant	2014	tricycle	White
6541983	Cannondale	2014	bicycle	Black
7891890	Cannondale	2015	bicycle	White
7893245	BMC	2014	tricycle	Black
9632376	Cannondale	2016	tricycle	Black
NULL	NULL	NULL	NULL	NULL

6. RC (RC_ID ,empid ,bike_id) → RC define Repairing and Cleaning

fk_RC_employees foreign key (empid) →Represent employees of RC department

fk_RC_bike foreign key (bike_id)

RC_ID	empid	bike_id
31101	33021	1231234
31105	33021	1474567
31107	33021	7893245
31109	33021	9632376
31112	33021	3577625
31113	33022	1598202
31115	33022	7891890
31120	33022	6541983
31121	33022	3217293
31125	33022	1454562

7. booking (bookingid,custid,bookingdate,empid,bike_id)

fk_booking_customer foreign key (custid)

fk_booking_employees foreign key (empid) → Represent employees of booking department

fk_booking_bike foreign key (bike_id)

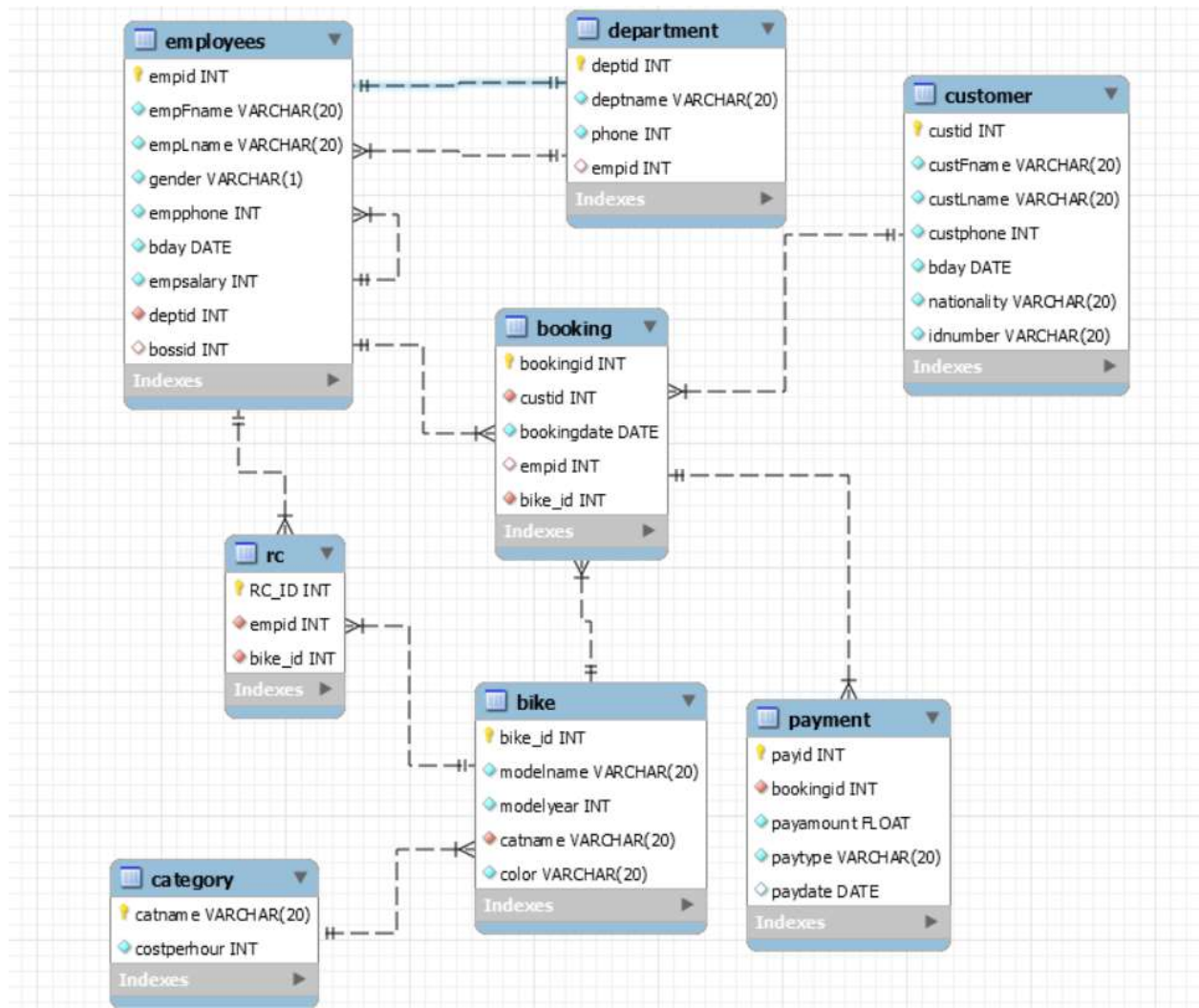| bookingid	custid	bookingdate	empid	bike_id
99701	666601	2020-10-05	22021	1231234
99702	666602	2020-10-08	22021	1454562
99703	666603	2020-10-11	22021	7893245
99704	777701	2020-10-18	22021	9632376
99705	777702	2020-10-20	22022	3577625
99706	777703	2020-10-25	22022	3217293
99707	888801	2020-10-25	22022	7891890
99708	888802	2020-10-29	22022	6541983

8. payment (payid,bookingid,payamount,paytype,paydate)

fk_payment_booking foreign key (bookingid)

payid	bookingid	payamount	paytype	paydate
81015124	99701	30	Cash	2020-10-05
81015876	99702	12	Cash	2020-10-08
81016120	99703	20	Visa	2020-10-11
81016287	99704	40	Cash	2020-10-18
81016480	99705	20	Visa	2020-10-20
81016521	99706	24	Cash	2020-10-25
81016685	99707	18	Visa	2020-10-25
81016770	99708	54	Cash	2020-10-29

Diagram

Queries

✓ List the names of the employees who earn more than salary avg

Select EMP.empFname ,DT.deptname
from employees EMP, department DT
where EMP.deptid=DT.deptid and EMP.empsalary > (select avg(empsalary) from employees);

empFname	deptname
AK	Managment
Ka	Managment
Ni	Managment

✓ Report the name and departmentt name of employees and boss name for each booking .

select BK.bookingid,BK.empid,EMP.empFname,EMP.empLname,DT.deptname ,EMP.bossid ,boss.empFname
from booking BK,employees EMP,department DT ,employees boss
where EMP.empid=BK.empid and EMP.deptid=DT.deptid and boss.empid=DT.empid;

bookingid	empid	empFname	empLname	deptname	bossid	empFname
99701	22021	Ni	Ra	booking	22011	Ka
99702	22021	Ni	Ra	booking	22011	Ka
99703	22021	Ni	Ra	booking	22011	Ka
99704	22021	Ni	Ra	booking	22011	Ka
99705	22022	Sa	Ra	booking	22011	Ka
99706	22022	Sa	Ra	booking	22011	Ka
99707	22022	Sa	Ra	booking	22011	Ka
99708	22022	Sa	Ra	booking	22011	Ka

✓ Report the name and id of Customer who's booking mini bike .

Select CUS.custid,CUS.custFname,CUS.custLname ,bike.bike_id, bike.catname
from customer CUS,bike ,booking BK
where bike.bike_id=BK.bike_id and BK.custid=CUS.custid and bike.catname regexp 'mini';

custid	custFname	custLname	bike_id	catname
666601	Ma	To	1231234	mini-tricycle
666602	Ri	Ta	1454562	mini-bicycle
777703	Ve	So	3217293	mini-bicycle

✓ Report who do the Sum amount of reservation employees from maximum to minimum

select EMP.empFname,sum(PAY.payamount)as "Max amount"
from employees EMP,payment PAY, booking BK
where BK.bookingid=PAY.bookingid and EMP.empid=BK.empid
group by(EMP.empid)
order by (sum(PAY.payamount)) DESC;

empFname	Max amount
Sa	116
Ni	102

✓ Report the number of hours for each booking

Select CUS.custid,CUS.custFname,(PAY.payamount/CAT.costperhour) as "Nb of days"
from customer CUS ,payment PAY, booking BK,bike,category CAT
where BK.bookingid=PAy.bookingid and bike.bike_id=BK.bike_idand
bike.catname=CAT.catname and BK.custid=CUS.custid;

custid	custFname	Nb of hours
666601	Ma	2
666602	Ri	1
666603	Da	1
777701	Mi	2
777702	Hr	1
777703	Ve	2
888801	Sa	1
888802	al	3

✓ Report the count of different category of bike cleanned and repaired by each employe   .

select EMP.empFname,DT.deptname,bike.CATname,count(bike.bike_id)
from employees EMP , rc , department DT, bike
where rc.empid=EMP.empid and RC.bike_id=bike.bike_id and EMP.deptid=DT.deptid
group by (bike.catname);

empFname	deptname	CATname	count(bike.bike_id)
El	repairing&cleaning	mini-tricycle	2
El	repairing&cleaning	tricycle	3
La	repairing&cleaning	bicycle	3
La	repairing&cleaning	mini-bicycle	2

- ✓ Report phone number of Lebanese customers exist in bicycle bike

select BK.bookingid,BK.custid,CUS.custFname,CUS.custphone
from booking BK, customer CUS
where CUS.custid=BK.custid and nationality='lebanesse' and EXISTS
(SELECT * FROM bike
WHERE bike.bike_id=BK.bike_id and bike.catname='bicycle');

bookingid	custid	custFname	custphone
99708	888802	al	3787851

- ✓ Report name and id of customers and employees of reserve, cleaning and repairing bike for the same booking

Select CUS.custid,CUS.custFname,CUS.custLname,
EMP.empid,EMP.empfname,EMP.empLname , DT.deptname
from customer CUS , booking BK ,employees EMP, department DT
where CUS.custid=BK.custid and EMP.empid=BK.empid and DT.deptid=EMP.deptid

UNION

select CUS.custid , CUS.custFname,CUS.custLname
,EMP.empid,EMP.empfname,EMP.empLname , DT.deptname
from customer CUS , booking BK ,bike, RC ,employees EMP , department DT
where CUS.custid=BK.custid and BK.bike_id=bike.bike_id and bike.bike_id=RC.bike_id and
EMP.empid=RC.empid and EMP.deptid=dt.deptid
ORDER BY custid ;

custid	custFname	custLname	empid	empfname	empLname	deptname
666601	Ma	To	22021	Ni	Ra	booking
666601	Ma	To	33021	El	Ha	repairing&cleaning
666602	Ri	Ta	22021	Ni	Ra	booking
666602	Ri	Ta	33022	La	Yo	repairing&cleaning
666603	Da	Ks	22021	Ni	Ra	booking
666603	Da	Ks	33021	El	Ha	repairing&cleaning
777701	Mi	Ma	22021	Ni	Ra	booking
777701	Mi	Ma	33021	El	Ha	repairing&cleaning
777702	Hr	Md	22022	Sa	Ra	booking
777702	Hr	Md	33021	El	Ha	repairing&cleaning
777703	Ve	So	22022	Sa	Ra	booking
777703	Ve	So	33022	La	Yo	repairing&cleaning
888801	Sa	St	22022	Sa	Ra	booking
888801	Sa	St	33022	La	Yo	repairing&cleaning
888802	al	Az	22022	Sa	Ra	booking
888802	al	Az	33022	La	Yo	repairing&cleaning

✓ Create a view voucher

CREATE VIEW Receipt AS
select CUS.custFname , CUS.custLname,CUS.nationality ,(PAY.payamount/CAT.costperhour)
as "Nb of days",
bike.catname,BK.bike_id,PAY.payamount as "total amount"
,PAY.paydate,PAY.paytype,EMP.empfname
from (((((booking BK
inner join bike on bike.bike_id=BK.bike_id)
inner join category CAT on CAT.catname=bike.catname)
inner join customer CUS on BK.custid=CUS.custid)
inner join employees EMP on BK.empid=EMP.empid)
inner join payment PAY on BK.bookingid=PAy.bookingid) ;

custFname	custLname	nationality	Nb of days	catname	bike_id	total amount	paydate	paytype	empfname
Ma	To	Canedian	2	mini-tricycle	1231234	30	2020-10-05	Cash	Ni
Ri	Ta	Lebanesse	1	mini-bicycle	1454562	12	2020-10-08	Cash	Ni
Da	Ks	Lebanesse	1	tricycle	7893245	20	2020-10-11	Visa	Ni
Mi	Ma	Lebanesse	2	tricycle	9632376	40	2020-10-18	Cash	Ni
Hr	Md	lebanesse	1	tricycle	3577625	20	2020-10-20	Visa	Sa
Ve	So	Lebanesse	2	mini-bicycle	3217293	24	2020-10-25	Cash	Sa
Sa	St	colombian	1	bicycle	7891890	18	2020-10-25	Visa	Sa
al	Az	lebanesse	3	bicycle	6541983	54	2020-10-29	Cash	Sa

✓ update the costperhour increase 30% for mini-tricycle

Update category
SET costperhour = costperhour*1.3
where catname = 'mini-tricycle';

catname	costperhour
bicycle	18
mini-bicycle	12
mini-tricycle	15
tricycle	20

→

catname	costperhour
bicycle	18
mini-bicycle	12
mini-tricycle	20
tricycle	20

Business Improvement

This system allows the user to manage and coordinate the bike rental store, which can provide his customers with the best results and servers.