Healthcare Management System

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INTRODUCTION:

The schema is designed to function as a backend storage database for web application to manage the lumpsum information in many industries. Storing information in a relational database is to identify and implement policies that enhance patient care and foster positive relationships with stakeholders in Healthcare Industry. also all the tasks related to daily functioning of the Healthcare Management system can be performed easily and much more efficiently.
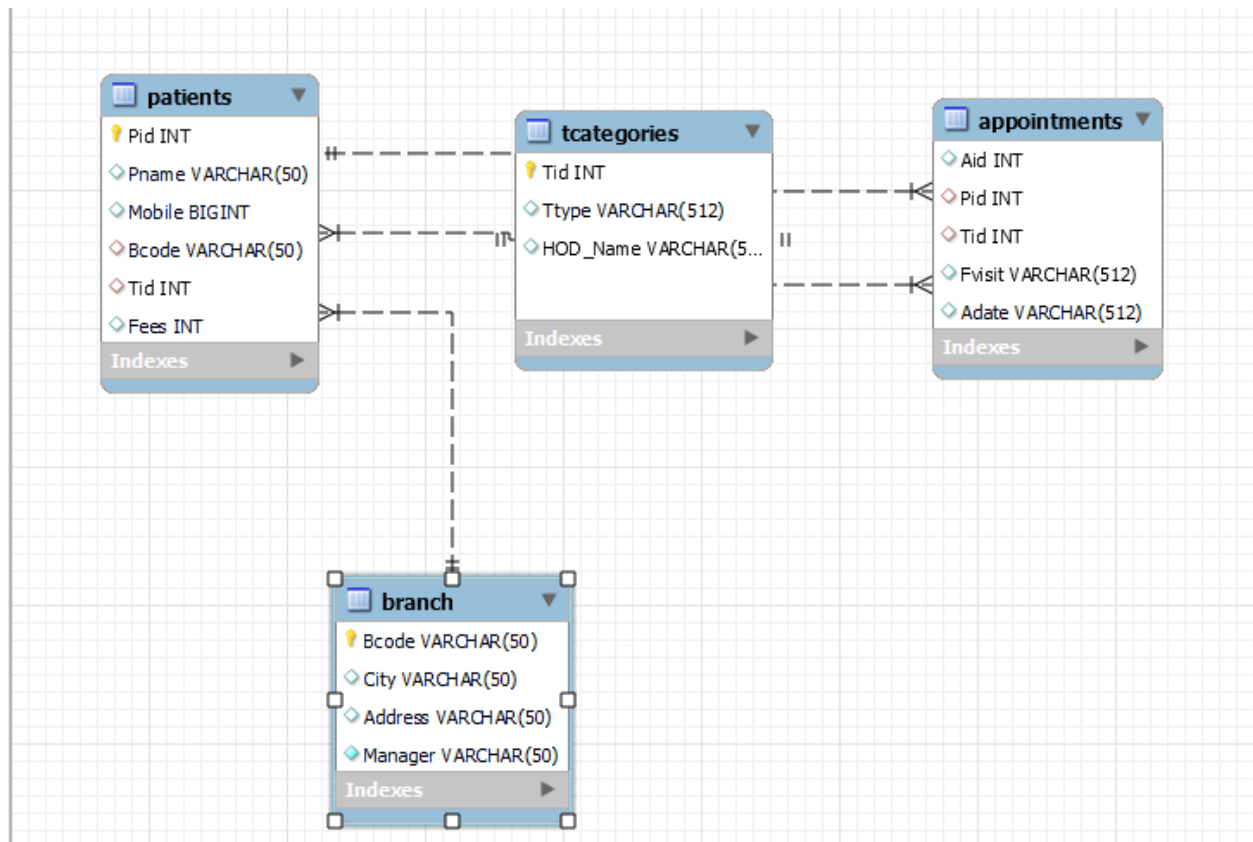
Management system includes registration of patients, storing their details into the system, and also computerized billing. It has the facility to give a unique id for every patient and store the details of every patient.

RDBMS provides many ways to analyze available data, thus helping in making more informed decisions about inventory management, Maintaining customer details, their account and other aspects in Healthcare Management:

- Branch Details
- Treatment Categories
- Patient Details
- Appointment Details

The Relation is best described in the following diagram i.e. ER Diagram-

Entity Relationship Diagram:

patients
- Pid INT
- Pname VARCHAR(50)
- Mobile BIGINT
- Bcode VARCHAR(50)
- Tid INT
- Fees INT
- Indexes

tcategories
- Tid INT
- Ttype VARCHAR(512)
- HOD_Name VARCHAR(5...
- Indexes

appointments
- Aid INT
- Pid INT
- Tid INT
- Fvisit VARCHAR(512)
- Adate VARCHAR(512)
- Indexes

branch
- Bcode VARCHAR(50)
- City VARCHAR(50)
- Address VARCHAR(50)
- Manager VARCHAR(50)
- Indexes

* Data Definition Language(DDL): It allows to create, alter, drop and truncate the structure of tables. As follows:

Create & Select Database AM Healthcare:
Create Database AM_Healthcare;
Use AM_Healthcare;

Create Table for Branch Details:
Create Table Branch
(
Bcode varchar(50) Primary Key,
City varchar(50),
Address varchar(50),
Manager varchar(50) Not Null
);

Desc Branch;

Field	Type	Null	Key	Default	Extra
Bcode	varchar(50)	NO	PRI	NULL	
City	varchar(50)	YES		NULL	
Address	varchar(50)	YES		NULL	
Manager	varchar(50)	NO		NULL	

Create Table for Treatment Categories:
Create Table Tcategories
(
    Tid INT Primary Key,
    Ttype VARCHAR(512),
    HOD_Name VARCHAR(512)
);

Desc Tcategories;

Field	Type	Null	Key	Default	Extra
Tid	int	NO	PRI	NULL	
Ttype	varchar(512)	YES		NULL	
HOD_Name	varchar(512)	YES		NULL	

Create Table for Patients Details:

```
CREATE TABLE Patients
(
   Pid  int Primary Key,
   Pname varchar(50),
   Mobile bigint,
   Bcode varchar(50),
   Tid int,
   Fees int,
   Foreign key (Tid) References Tcategories(Tid),
   Foreign key (Bcode) References Branch(Bcode)
);
```

Desc Patients;

Field	Type	Null	Key	Default	Extra
Pid	int	NO	PRI	NULL	
Pname	varchar(50)	YES		NULL	
Mobile	bigint	YES		NULL	
Bcode	varchar(50)	YES	MUL	NULL	
Tid	int	YES	MUL	NULL	
Fees	int	YES		NULL	

Create Table for Appointment Details:

```
CREATE TABLE Appointments
(
   Aid INT,
   Pid  INT,
   Tid INT,
   Fvisit      VARCHAR(512),
   Adate       VARCHAR(512),
   foreign key (Pid) references patients (Pid),
   foreign key (Tid) references Tcategories (Tid)
);
```

Desc Appointments:

Field	Type	Null	Key	Default	Extra
Aid	int	YES		NULL	
Pid	int	YES	MUL	NULL	
Tid	int	YES	MUL	NULL	
Fvisit	varchar(512)	YES		NULL	
Adate	varchar(512)	YES		NULL	

* Data Manipulation Language: It allows Manipulation of data in tables. Like Insert, Update, Delete.

Insert Data in Branch:
INSERT INTO Branch VALUES
('M1011', 'Mumbai', '"Mulund station rd, East 05"', 'Punit Shah'),
('T1012', 'Thane', '"Naupada no. 1"', 'Mohan R'),
('P1013', 'Pune', '"Sarasbaug exit gate 2"', 'Waman Pai'),
('S1014', 'Satara', '"Jaoli-satara road, no. 10"', 'Raman R.'),
('K1015', 'Khopoli', '"Khopoli station rd, 1"', 'Jac Dcosta'),
('R1016', 'Raigad', '"Palghar road E01"', 'Tina Dabi'),
('D1017', 'Dombivli', '"Diva bypass exit no. 12"', 'M.Suman'),
('N1018', 'Nagar', '"Near Ahemadnagar Station no. 8"', 'R. Madhavan'),
('B1019', 'Belapur', '"sector 10, Near Station, 14"', 'Varun Sharma');

Insert Data in Tcategories:
INSERT INTO Tcategories VALUES
(1001, 'Gaenocology', 'Suresh Aade'),
(1002, 'Orthopaedic', 'Sunita magar'),
(1003, 'Dental', 'Nilesh Shinde'),
(1004, 'Hairloss', 'Suraj Chavan'),
(1005, 'Cardiologist', 'Prakash Shende'),
(1006, 'Neurologist', 'Ritu Khemani'),
(1007, 'Physician', 'Monica M'),
(1008, 'Dietician', 'Siddh Jha'),
(1009, 'Hepatologist', 'Chatur R');

Insert Data in Patients:

```
INSERT INTO Patients VALUES
(101, 'Sonal Sharma', 9876543210, 'M1011', 1005, 1000),
(102, 'Monica C', 9876543211, 'S1014', 1007, 300),
(103, 'Mohan Chandran', 9876543212, 'K1015', 1005, 1000),
(104, 'Radhika P', 9876543213, 'T1012', 1001, 500),
(105, 'C krishnan', 9876543214, 'R1016', 1002, 500),
(106, 'Verma rani', 9876543215, 'S1014', 1001, 500),
(107, 'T Gangopadhayay', 9876543216, 'R1016', 1006, 1200),
(108, 'Mozelle Isac', 9876543217, 'P1013', 1009, 1000),
(109, 'Sharat Kumar Arora', 9876543218, 'K1015', 1003, 500),
(110, 'Afifa Rahman', 9876543219, 'P1013', 1002, 400),
(111, 'Abdul Matin', 9876543220, 'S1014', 1004, 800),
(112, 'Yogesh Sharma', 9876543221, 'T1012', 1005, 1000),
(113, 'Mohit Bhatnagar', 7896541230, 'M1011', 1008, 600),
(114, 'Chanchal Agrawal', 7896541231, 'P1013', 1006, 1000),
(115, 'U Sharma', 7896541232, 'D1017', 1006, 1000),
(116, 'Avantika Srivastava', 7896541233, 'R1016', 1001, 500),
(117, 'Manisha Mane', 7896541234, 'K1015', 1001, 500),
(118, 'A Anandkar', 7896541235, 'B1019', 1007, 300),
(119, 'M R Dhot', 7896541236, 'N1018', 1006, 1000),
(120, 'Rajendra Marwade', 7896541237, 'D1017', 1003, 500),
(121, 'Swati Sanjay Surve', 7896541238, 'K1015', 1007, 300),
(122, 'PRAGYA PANDEY', 7896541239, 'T1012', 1005, 1000),
(123, 'Kanchalal R Patel', 8521479630, 'M1011', 1002, 500),
(124, 'Verma rani', 9876543215, 'S1014', 1004, 800),
(125, 'Abdul Matin', 9876543220, 'S1014', 1002, 400),
(126, 'Afifa Rahman', 9876543219, 'P1013', 1007, 300),
(127, 'Urmila A Thakar', 8521479631, 'R1016', 1001, 500),
(128, 'V Karnick', 8521479632, 'D1017', 1002, 500),
(129, 'Gita B Desai', 8521479633, 'N1018', 1004, 800),
(130, 'Pravin A Jani', 8521479634, 'K1015', 1008, 600),
(131, 'Vijayakumar J K', 8521479635, 'T1012', 1009, 1200),
(132, 'Upadhyay Purnima', 8521479636, 'M1011', 1001, 700),
(133, 'Sharmishtha Patel', 8521479637, 'R1016', 1007, 200),
(134, 'Laila Farzana', 8521479638, 'S1014', 1004, 1000),
(135, 'Aswani Kumar', 8521479639, 'P1013', 1008, 600),
(136, 'Ashaben Dave', 8521479640, 'B1019', 1005, 1000),
(137, 'Manisha Shah', 9654123078, 'D1017', 1009, 1000),
(138, 'Omveer Singh', 9654123077, 'R1016', 1003, 500),
(139, 'Om Prakash Singh', 9654123076, 'B1019', 1005, 1000),
(140, 'Oasis Basu', 9654123075, 'N1018', 1002, 500),
(141, 'Geeta Devi', 9654123074, 'S1014', 1003, 500),
(142, 'Gayathri Sen', 9654123073, 'T1012', 1001, 700),
(143, 'Gurmeet Kaur', 9654123072, 'K1015', 1005, 1000),
(144, 'Gayathri Devi', 9654123071, 'R1016', 1001, 700),
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(145, 'Deepa Devi', 9654123070, 'B1019', 1009, 1200),
(146, 'Devaoas Bodugala', 9654123069, 'N1018', 1002, 500),
(147, 'Digvijai Singh', 9654123068, 'M1011', 1003, 500),
(148, 'Wipin Lilhare', 9654123067, 'S1014', 1006, 800),
(149, 'Wajih A Alvi', 9654123066, 'K1015', 1006, 1200),
(150, 'Wazir Singh Mour', 9654123065, 'P1013', 1006, 1200),
(151, 'Tejaswini R Joshi', 9654123064, 'T1012', 1008, 500),
(152, 'Manisha Shah', 9654123078, 'D1017', 1004, 700),
(153, 'Radhika P', 9876543213, 'T1012', 1007, 200),
(154, 'Manisha Shah', 9654123078, 'D1017', 1006, 800),
(155, 'Radhika P', 9876543213, 'T1012', 1008, 500),
(156, 'Mozelle Isac', 9876543217, 'P1013', 1002, 400),
(157, 'Mozelle Isac', 9876543217, 'P1013', 1007, 200),
(158, 'Sharmishtha Patel', 8521479637, 'R1016', 1002, 400),
(159, 'Wipin Lilhare', 9654123067, 'S1014', 1007, 200),
(160, 'Tejaswini R Joshi', 9654123064, 'T1012', 1001, 500);

Insert Data in Appointments:
INSERT INTO Appointments VALUES
(5001, 110, 1002, now(), Date_add(Now(),Interval 18 day)),
(5002, 111, 1004, now(), Date_add(Now(),Interval 21 day)),
(5003, 133, 1007, now(), Date_add(Now(),Interval 45 day)),
(5004, 126, 1007, now(), Date_add(Now(),Interval 30 day)),
(5005, 137, 1009, now(), Date_add(Now(),Interval 30 day)),
(5006, 124, 1004, now(), Date_add(Now(),Interval 25 day)),
(5007, 135, 1008, now(), Date_add(Now(),Interval 90 day)),
(5008, 132, 1001, now(), Date_add(Now(),Interval 30 day)),
(5009, 139, 1005, now(), Date_add(Now(),Interval 30 day)),
(5010, 140, 1002, now(), Date_add(Now(),Interval 15 day)),
(5011, 129, 1004, now(), Date_add(Now(),Interval 10 day)),
(5012, 143, 1005, now(), Date_add(Now(),Interval 20 day)),
(5013, 147, 1003, now(), Date_add(Now(),Interval 90 day)),
(5014, 149, 1006, now(), Date_add(Now(),Interval 56 day)),
(5015, 148, 1006, now(), Date_add(Now(),Interval 50 day)),
(5016, 151, 1008, now(), Date_add(Now(),Interval 30 day)),
(5017, 152, 1004, now(), Date_add(Now(),Interval 25 day)),
(5018, 156, 1002, now(), Date_add(Now(),Interval 15 day)),
(5019, 158, 1002, now(), Date_add(Now(),Interval 21 day)),
(5020, 160, 1001, now(), Date_add(Now(),Interval 16 day));

* Data Query Language: It helps in retrieving the data and information from the database. Using Select, Show, Help.
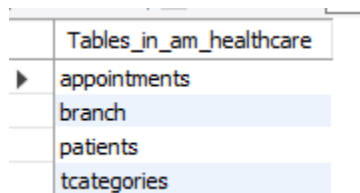
* Data Control Language: Allows or denies permissions to access the tables.

* Transaction Control Language: It looks upon managing the changes made in DML statement.

1.How Many tables are available in AM Healthcare management system?
Ans:
Show Tables;

Tables_in_am_healthcare
appointments
branch
patients
tcategories

2. Change the treatment id 1001 to patient having id 133 in appointments table?
Ans:
update Appointments
set Tid=1001
where pid=133;

3 .Name the patients who have appointments for Hairloss and Orthopaedic?
Ans:
Select Pname from patients join Tcategories on patients.Tid=Tcategories.Tid where Ttype='Hairloss' or Ttype='Orthopaedic';

Pname
C krishnan
Afifa Rahman
Kanchalal R Patel
Abdul Matin
V Karnick
Oasis Basu
Devaoas Bodugala
Mozelle Isac
Sharmishtha Patel
Abdul Matin
Verma rani
Gita B Desai
Laila Farzana
Manisha Shah

4. What is the collection of every branch till date collection amount low to high?
Ans:
Select City,sum(Fees) as Collection from Branch join patients on
Branch.Bcode=patients.Bcode group by city order by sum(fees);

City	Collection
Nagar	2800
Mumbai	3300
Belapur	3500
Dombivli	4500
Raigad	4500
Khopoli	5100
Pune	5100
Satara	5300
Thane	6100

5. How many patients were dignosed in every location?
Ans:
select City, count(Pname) as No_of_patients from patients join Branch
on patients. Bcode=branch.Bcode
group by City;

City	No_of_patients
Belapur	4
Dombivli	6
Khopoli	7
Mumbai	5
Nagar	4
Pune	8
Raigad	8
Satara	9
Thane	9

6. How many patients do not advised further revisits?
Ans:
select patients.pname from patients left join
Appointments on patients.pid=Appointments.pid
where Patients.pid not in (select pid from appointments);

pname
Sonal Sharma
Monica C
Mohan Chandran
Radhika P
C krishnan
Verma rani
T Gangopadhayay
Mozelle Isac
Sharat Kumar Arora
Yogesh Sharma
Mohit Bhatnagar
Chanchal Agrawal
U Sharma
Avantika Srivastava
Manisha Mane
A Anandkar
M R Dhot
Rajendra Marwade
Swati Sanjay Surve
PRAGYA PANDEY
Kanchalal R Patel
Abdul Matin
Urmila A Thakar
V Karnick
Pravin A Jani
Vijayakumar J K
Laila Farzana
Ashaben Dave

Result 4

7. Name and fees for gaeno treatment for Raigad branch?

Ans:

Select pname, fees from patients p join Tcategories t
on p.Tid=t.Tid join branch b on b.Bcode=p.Bcode
where Ttype='Gaenocology' and b.bcode='R1016';

pname	fees
Avantika Srivastava	500
Urmila A Thakar	500
Gayathri Devi	700

8. Id's and names of patients have appointments on 5th dec to 25th dec for 1001,1007 &1009
Treatment code for Nagar branch.
Ans:

Select p.pid, p.pname from Patients p left join Appointments a on p.pid=a.pid
join Branch b on p.bcode=b.bcode
where Adate between '2023-12-05 00:28:23' and '2023-12-25 00:28:23'
and city=(select city from branch where bcode='N1018');

pid	pname
140	Oasis Basu
129	Gita B Desai

9. Need patients details for thane, pune, raigad and nagar branch?
Ans-

Select * from Patients p left join Branch b on p.bcode=b.bcode where city in (select city
from branch where city='Mumbai' or city= 'Raigad' or city= 'Pune' or city= 'Nagar');

Pid	Pname	Mobile	Bcode	Tid	Fees	Bcode	City	Address	Manager
101	Sonal Sharma	9876543210	M1011	1005	1000	M1011	Mumbai	"Mulund station rd, East 05"	Punit Shah
113	Mohit Bhatnagar	7896541230	M1011	1008	600	M1011	Mumbai	"Mulund station rd, East 05"	Punit Shah
123	Kanchalal R Patel	8521479630	M1011	1002	500	M1011	Mumbai	"Mulund station rd, East 05"	Punit Shah
132	Upadhyay Purnima	8521479636	M1011	1001	700	M1011	Mumbai	"Mulund station rd, East 05"	Punit Shah
147	Digvijai Singh	9654123068	M1011	1003	500	M1011	Mumbai	"Mulund station rd, East 05"	Punit Shah
119	M R Dhot	7896541236	N1018	1006	1000	N1018	Nagar	"Near Ahemadnagar Station no. 8"	R. Madhavan
129	Gita B Desai	8521479633	N1018	1004	800	N1018	Nagar	"Near Ahemadnagar Station no. 8"	R. Madhavan
140	Oasis Basu	9654123075	N1018	1002	500	N1018	Nagar	"Near Ahemadnagar Station no. 8"	R. Madhavan
146	Devaoas Bodugala	9654123069	N1018	1002	500	N1018	Nagar	"Near Ahemadnagar Station no. 8"	R. Madhavan
108	Mozelle Isac	9876543217	P1013	1009	1000	P1013	Pune	"Sarasbaug exit gate 2"	Waman Pai
110	Afifa Rahman	9876543219	P1013	1002	400	P1013	Pune	"Sarasbaug exit gate 2"	Waman Pai
114	Chanchal Agrawal	7896541231	P1013	1006	1000	P1013	Pune	"Sarasbaug exit gate 2"	Waman Pai
126	Afifa Rahman	9876543219	P1013	1007	300	P1013	Pune	"Sarasbaug exit gate 2"	Waman Pai
135	Aswani Kumar	8521479639	P1013	1008	600	P1013	Pune	"Sarasbaug exit gate 2"	Waman Pai
150	Wazir Singh Mour	9654123065	P1013	1006	1200	P1013	Pune	"Sarasbaug exit gate 2"	Waman Pai
156	Mozelle Isac	9876543217	P1013	1002	400	P1013	Pune	"Sarasbaug exit gate 2"	Waman Pai
157	Mozelle Isac	9876543217	P1013	1007	200	P1013	Pune	"Sarasbaug exit gate 2"	Waman Pai
105	C krishnan	9876543214	R1016	1002	500	R1016	Raigad	"Palghar road E01"	Tina Dabi
107	T Gangopadhayay	9876543216	R1016	1006	1200	R1016	Raigad	"Palghar road E01"	Tina Dabi
116	Avantika Srivastava	7896541233	R1016	1001	500	R1016	Raigad	"Palghar road E01"	Tina Dabi
127	Urmila A Thakar	8521479631	R1016	1001	500	R1016	Raigad	"Palghar road E01"	Tina Dabi
133	Sharmishtha Patel	8521479637	R1016	1007	200	R1016	Raigad	"Palghar road E01"	Tina Dabi
138	Omveer Singh	9654123077	R1016	1003	500	R1016	Raigad	"Palghar road E01"	Tina Dabi
144	Gayathri Devi	9654123071	R1016	1001	700	R1016	Raigad	"Palghar road E01"	Tina Dabi
158	Sharmishtha Patel	8521479637	R1016	1002	400	R1016	Raigad	"Palghar road E01"	Tina Dabi

10. Want to know appointment details of thane branch?
Ans:
Select a.pid, b.bcode, pname, adate from Appointments a join Patients p on a.pid=p.pid join Branch b on p.bcode=b.bcode where city='Belapur';

pid	bcode	pname	adate
139	B1019	Om Prakash Singh	2023-12-25 00:28:23

11. How many patients opted for more than 1 treatment?
Ans:
Select pname, count(pname) as Patients from patients group by pname having count(pname) > 1 ;

pname	Patients
Radhika P	3
Verma rani	2
Mozelle Isac	3
Afifa Rahman	2
Abdul Matin	2
Sharmishtha Patel	2
Manisha Shah	3
Wipin Lilhare	2
Tejaswini R Joshi	2

12. Name the patients have appointments came for Neurologist and DIetician in ascending order by name?
Ans:
select pname, Ttype, adate from patients p join Tcategories t on p.tid=t.tid
join appointments a on p.pid=a.pid
where Ttype in (Select Ttype from Tcategories where tid=1006 or tid=1008)
order by pname;

pname	Ttype	adate
Aswani Kumar	Dietician	2024-02-23 00:28:23
Tejaswini R Joshi	Dietician	2023-12-25 00:28:23
Wajih A Alvi	Neurologist	2024-01-20 00:28:23
Wipin Lilhare	Neurologist	2024-01-14 00:28:23

13. name and total fees paid by every patient where fees more than 1000?
Ans:
Select pname, Sum(fees) from Patients
Group by pname
Having sum(fees)>1000;

pname	Sum(fees)
Radhika P	1200
Verma rani	1300
T Gangopadhayay	1200
Mozelle Isac	1600
Abdul Matin	1200
Vijayakumar J K	1200
Manisha Shah	2500
Deepa Devi	1200
Wajih A Alvi	1200
Wazir Singh Mour	1200

14. Treatment name and mobile no. of patients whose mobile no starts with 9.
Ans:

Select Ttype, Mobile from Patients p join Tcategories t on p.Tid=t.Tid where Mobile like '9%';

Ttype	Mobile
Cardiologist	9876543210
Physician	9876543211
Cardiologist	9876543212
Gaenocology	9876543213
Orthopaedic	9876543214
Gaenocology	9876543215
Neurologist	9876543216
Hepatologist	9876543217
Dental	9876543218
Orthopaedic	9876543219
Hairloss	9876543220
Cardiologist	9876543221
Hairloss	9876543215
Orthopaedic	9876543220
Physician	9876543219
Hepatologist	9654123078
Dental	9654123077
Cardiologist	9654123076
Orthopaedic	9654123075
Dental	9654123074
Gaenocology	9654123073
Cardiologist	9654123072
Gaenocology	9654123071
Hepatologist	9654123070
Orthopaedic	9654123069
Dental	9654123068

15. What is total collection of AM Healthcare?
Ans:
Select Sum(fees) as Total from patients;

Total
40200

Thank you