

# MEDICAL MANAGEMENT SYSTEMS INC.

GROUP 5

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# BUSINESS OVERVIEW

# DESCRIPTION

MMS Inc helps individuals with organizing their medical needs by providing:

- Search for available physicians, and insurers, by location
- Finding physicians by specialty or condition
- MMS Inc provides a service that links our employees with patients to assist them with a variety of medical processes

Payment is managed through the client contract and is subscription based

## ADDITIONAL SERVICES OFFERED

1. Organize doctor appointments
2. Consult clients on confusing medical procedures
3. Provide welfare checks
4. Follow ups guidance plans after medical procedures
5. Provide data to clients to inform policy making

# HOW WE USE OUR DATABASE

- Customers call us to arrange appointments
- Our website provides supplementary medical information
  - This website utilizes our database

# BUSINESS RULES

- Contract only with local governments, businesses, and labor unions
- Information Confidentiality
  - a. Doctors and Insurers will have access to patient details only in certain cases.
  - b. Patients will not be allowed to lookup personally identifiable information about other patients
  - c. HIPAA Compliant

# BUSINESS ASSUMPTIONS

- Clients are identified by ID # (eg: C-001) and not by name( eg: “Safeway”)
- Contract management is out of scope
- Employee HR details are out of scope
- Historical data has been omitted to reduce complexity for all entities except member follow-up information (assignments)
- Insurer individual plan specifics are out of scope
- Interface login credentials have been left out of scope to reduce complexity

# GENERAL USER INTERFACE



# GUI PROCEDURE

1. Login as either Member or Employee
2. Press Relevant Buttons
3. Type in Search Conditions

## Login

**Username:**

**Password:**

Member [X]

Employee [ ]

# What Can We Help You Find Near 95129?

*change location*

Doctor Name, Specialty, Insurance, Condition

**Search**



History

View Service History



Directory

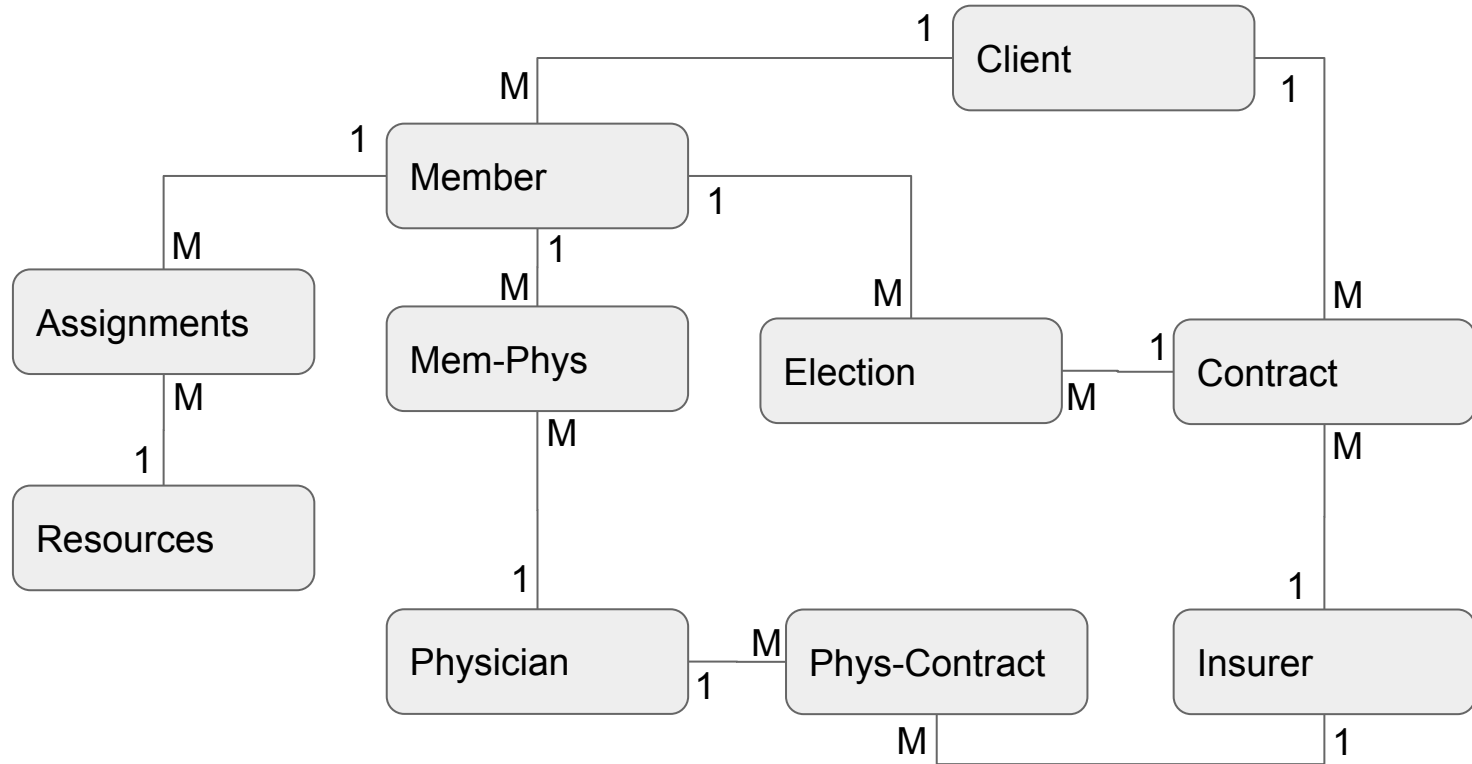
Find Physician



Change

Modify Services

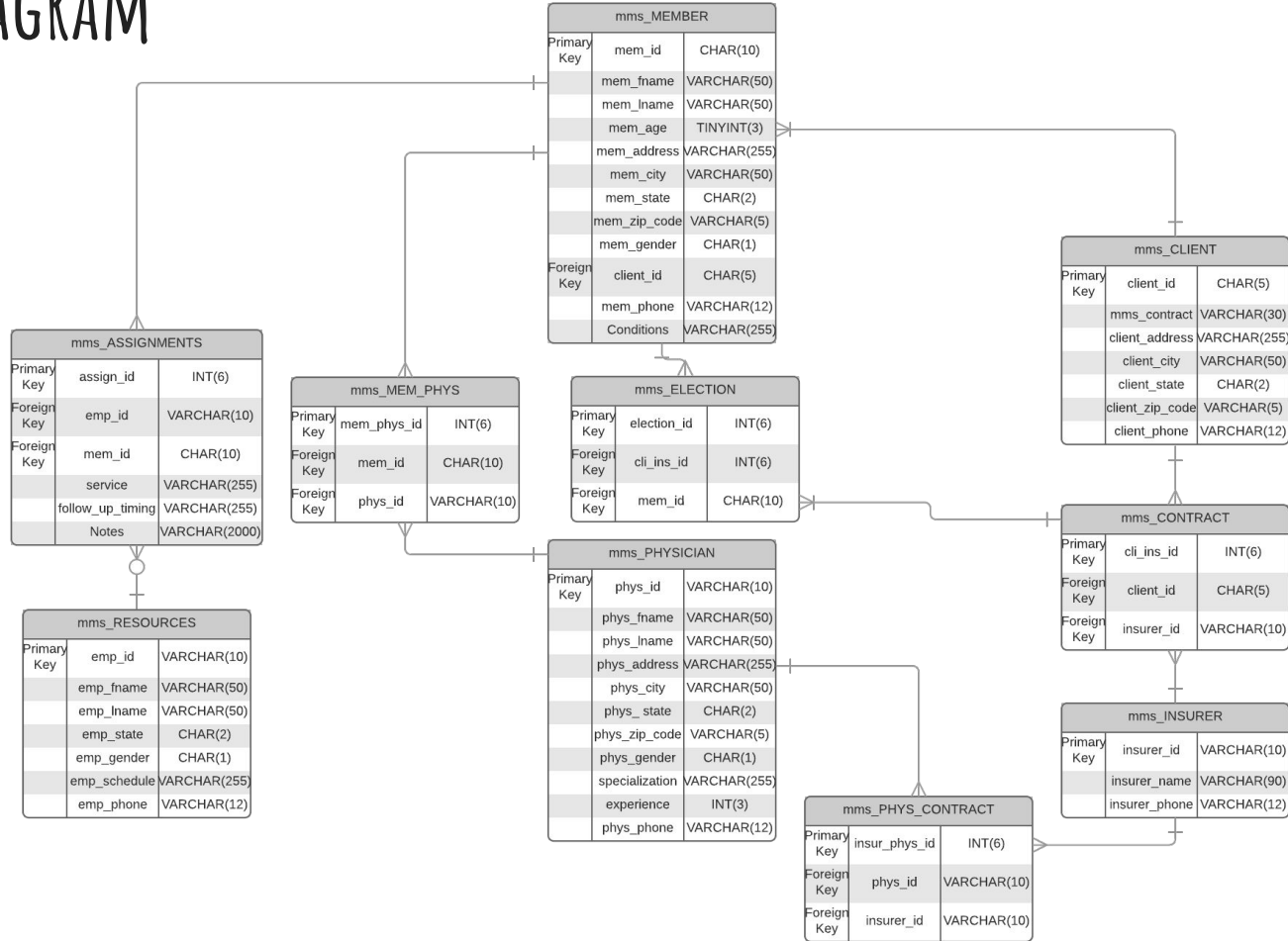
# SUMMARY DIAGRAM



# ENTITY RELATIONSHIP DIAGRAM

Entity Type	Related to Entities	Relationship	Description
Member	Assignments	one to many	Each member is assigned a resource who works with them to resolve their needs. Resources work with multiple resources over time.
	Mem_Phys	one to many	Each member selects at least one physician. Members may see multiple physicians with different specialties.
	Client	many to one	Members are employees of the client and only belong to one client.
Client	Member	one to many	Clients employ multiple members.
	Contract	one to many	Clients have multiple contracts with different Insurers for the best deal to provide their employees (members)
Resources	Assignments	one to many	Resources are assigned to work with multiple members to help them resolve their needs.
Physician	Phys_Contract	one to many	Physicians have multiple contracts with different insurers to be paid for their services at specific rates.
	Mem_Phys	one to many	Physicians are chosen by multiple members to provide treatment and care.
Insurer	Contract	one to many	Insurers have multiple contracts with companies (clients) to provide their members coverage at discounted rates.
	Phys_Contract	one to many	Insurers have multiple contracts with physicians to provide payment for patient (member) services.
Contract	Election	one to many	Members elect which insurance they want, by electing a specific contract between their employer (client) and insurer.

# DETAILED DIAGRAM



# CREATED TABLES EXAMPLES

```
CREATE TABLE mms_INSURER (  
    insurer_id VARCHAR(10),  
    insurer_name VARCHAR(90),  
    insurer_phone VARCHAR(12),  
    Primary Key (insurer_id)  
);  
  
CREATE TABLE mms_RESOURCES (  
    emp_id VARCHAR(10),  
    emp_fname VARCHAR(50),  
    emp_lname VARCHAR(50),  
    emp_state CHAR(2),  
    emp_gender CHAR(1),  
    emp_schedule VARCHAR(255),  
    emp_phone VARCHAR(12),  
    Primary Key (emp_id)  
);  
  
CREATE TABLE mms_CLIENT (  
    client_id CHAR(5),  
    mms_contract VARCHAR(30),  
    client_address VARCHAR(255),  
    client_city VARCHAR(50),  
    client_state CHAR(2),  
    client_zip_code VARCHAR(5),  
    client_phone VARCHAR(12),  
    Primary Key (client_id)
```

```
CREATE TABLE mms_PHYSICIAN (  
    phys_id VARCHAR(10),  
    phys_fname VARCHAR(50),  
    phys_lname VARCHAR(50),  
    phys_address VARCHAR(255),  
    phys_city VARCHAR(50),  
    phys_state CHAR(2),  
    phys_zip_code VARCHAR(5),  
    phys_gender CHAR(1),  
    specialization VARCHAR(255),  
    experience INT,  
    phys_phone VARCHAR(12),  
    Primary Key (phys_id)  
);  
  
CREATE TABLE mms_PHYS_CONTRACT (  
    insur_phys_id INT,  
    phys_id VARCHAR(10),  
    insurer_id VARCHAR(10),  
    Primary Key (insur_phys_id),  
    Foreign Key (phys_id) References mms_PHYSICIAN (phys_id),  
    foreign key (insurer_id) references mms_INSURER (insurer_id)  
);  
  
CREATE TABLE mms_MEMBER (  
    mem_id CHAR(10),  
    mem_fname VARCHAR(50),  
    mem_lname VARCHAR(50),
```



# SAMPLE QUERIES

# GENERATE LIST OF PHYSICIANS BASED OFF SPECIALIZATION

## Query:

```
select
    phys_fname,
    phys_lname,
    specialization
from mms_PHYSICIAN
order by
specialization
```

## Output:

	phys_fname	phys_lname	specialization
1	Mervin	Balfour	Addiction psychiatrist
2	Knox	Tokell	Addiction psychiatrist
3	Eyde	Culp	Addiction psychiatrist
4	Amelie	Aime	Adolescent medicine specialist
5	Corbin	Benedicto	Adolescent medicine specialist
6	Vern	De Coursey	Adolescent medicine specialist
7	Annissa	Kibbel	Adolescent medicine specialist
8	Loydie	Joynes	Allergist (immunologist)
9	Donal	Thistleton	Allergist (immunologist)
10	Jaymee	Bretland	Allergist (immunologist)

# GENERATE A CLIENT'S PHONE NUMBER AND THEIR LIST OF MEMBERS

## Query:

select

c.client\_phone,  
c.client\_id,  
m.mem\_fname,  
m.mem\_lname

from

mms\_CLIENT AS C,  
mms\_MEMBER AS M

where

c.client\_id = m.client\_id

order by c.client\_id

## Output:

	client_phone	client_id	mem_fname	mem_lname
1	423-523-9130	c-001	Prescott	Pevsner
2	423-523-9130	c-001	Evey	Dods
3	423-523-9130	c-001	Barret	Dummett
4	423-523-9130	c-001	Gertrude	Coupland
5	423-523-9130	c-001	El	Tuxsell
6	202-867-8035	c-002	Ari	Odeson
7	202-867-8035	c-002	Audie	Sussex
8	202-867-8035	c-002	Craig	Filipovic
9	574-138-6779	c-003	Beverlie	Themann
10	574-138-6779	c-003	Audrey	Gladbeck
11	574-138-6779	c-003	Ike	Whitham
12	574-138-6779	c-003	Licha	Rapinett

# PATIENT SERVICE HISTORY

## Query:

```
select
    m.mem_fname + ' ' + m.mem_lname
        as Patient,
    a.service,
    a.follow_up_timing,
    e.emp_fname + ' ' + e.emp_lname
        as [Service Rep]
from
    ((mms_MEMBER m
join mms_ASSIGNMENTS a
    on a.mem_id=m.mem_id)
join mms_RESOURCES e
    on e.emp_id=a.emp_id)
where m.mem_id='MEM-733616'
order by a.follow_up_timing
;
```

## Output:

	Patient	service	follow_up_timing	Service Rep
1	Josey Waistall	consultation	1/8/2017	Zackariah Rosgen
2	Josey Waistall	follow up guidance	3/8/2017	Zackariah Rosgen
3	Josey Waistall	welfare check	6/29/2017	Zackariah Rosgen
4	Josey Waistall	doctor matching	8/17/2017	Zackariah Rosgen
5	Josey Waistall	welfare check	8/24/2017	Zackariah Rosgen

# GENERATE A LIST OF PHYSICIANS THAT ARE WITHIN A CLIENT'S INSURANCE PLAN OPTIONS

## Query:

```
select
    p.phys_fname + ' ' + p.phys_lname
      as [Physician Name], i.insurer_name
from
    (((mms_PHYS_CONTRACT pc
    join mms_INSURER i on
i.insurer_id=pc.insurer_id)
    join mms_PHYSICIAN p on
p.phys_id=pc.phys_id)
    join mms_CONTRACT c on
c.insurer_id=i.insurer_id)
    join mms_CLIENT cl on
cl.client_id=c.client_id)
where c.client_id='c-002'
order by i.insurer_name
;
```

## Output:

	Physician Name	insurer_name
1	Bibbye Baumaier	Kaiser Foundation Group
2	Gabby Broadfield	Kaiser Foundation Group
3	Teodoro Rupp	Kaiser Foundation Group
4	Odella McWhan	Kaiser Foundation Group
5	Knox Tokell	Kaiser Foundation Group
6	Candace Zorer	Kaiser Foundation Group
7	Sanson Dowling	Kaiser Foundation Group
8	Cathleen Probbings	Kaiser Foundation Group
9	Saxe Jiri	Kaiser Foundation Group
10	Briano Hakewell	Kaiser Foundation Group

# LIST PATIENTS MATCHED WITH AN MMS EMPLOYEE

## Query:

```
SELECT DISTINCT R.emp_id,  
CONCAT (R.mem_fname, ' ', R.mem_lname) AS 'Employee Name',  
M.mem_id,  
CONCAT (M.mem_fname, ' ', P.mem_lname) AS 'MemberName',  
FROM  
mms_RESOURCES AS R,  
INNER JOIN mm_ASSIGNMENTS AS A  
ON R.emp_id=A.emp_id  
INNER JOIN mms_MEMBER AS M  
ON M.mem_id=A.mem_id  
ORDER BY R.emp_id
```

## Output:

	emp_id	Employee Name	mem_id	Member Name
1	emp-000001	Asher Camelin	MEM-007565	Kaitlin Pash
2	emp-000001	Asher Camelin	MEM-175143	Dominik Welbourn
3	emp-000001	Asher Camelin	MEM-177618	Octavia Sambells
4	emp-000001	Asher Camelin	MEM-312449	Corbie Girod
5	emp-000001	Asher Camelin	MEM-360869	Raddy De Domenico
6	emp-000001	Asher Camelin	MEM-488149	Abelard Smallacombe
7	emp-000001	Asher Camelin	MEM-522065	Jacques Poultney
8	emp-000001	Asher Camelin	MEM-659854	Fanya Jenks
9	emp-000001	Asher Camelin	MEM-730919	Lisle O' Fogarty
10	emp-000001	Asher Camelin	MEM-742473	Oates Aleksandrovich
11	emp-000001	Asher Camelin	MEM-859704	Elizabeth Naulls
12	emp-000001	Asher Camelin	MEM-890439	Zelda Skillicom
13	emp-000002	Odille Simioli	MEM-126587	Pasquale Plom
14	emp-000002	Odille Simioli	MEM-208237	Vincent's Noods
15	emp-000002	Odille Simioli	MEM-286317	Portie Wilshire

# POSSIBLE PHYSICIANS FOR A SPECIFIC MEMBER GIVEN LOCATION, INSURER SELECTED, AND SHOWING SPECIALIZATIONS AVAILABLE

## Query:

```
select
    m.mem_fname + ' ' + m.mem_lname as Member,p.phys_fname + ' ' + p.phys_lname as
    [Physician Name],
    p.specialization,p.phys_city + ', ' + p.phys_state as [Location],i.insurer_name
from (((((mms_PHYS_CONTRACT pc full outer join mms_INSURER i on
    i.insurer_id=pc.insurer_id)
    full outer join mms_PHYSICIAN p on p.phys_id=pc.phys_id) full outer join
    mms_CONTRACT c on c.insurer_id=i.insurer_id) full outer join mms_ELECTION e on
    e.cli_ins_id=c.cli_ins_id) full outer join mms_MEMBER m on m.mem_id=e.mem_id)
where m.mem_id='MEM-186894' and m.mem_state=p.phys_state order by
    p.phys_state,p.phys_city;
```

## Output:

	Member	Physician Name	specialization	Location	insurer_name
1	Quincy Widdecombe	Candace Zorer	Pathologist	Alhambra, CA	Blue Cross Blue Shield of New Jersey Group
2	Quincy Widdecombe	Aldus Kidde	Plastic surgeon	Carlsbad, CA	Blue Cross Blue Shield of New Jersey Group
3	Quincy Widdecombe	Barbi Trevillion	Pathologist	Concord, CA	Blue Cross Blue Shield of New Jersey Group
4	Quincy Widdecombe	Chilton Klaessen	Psychiatrist	Fresno, CA	Blue Cross Blue Shield of New Jersey Group
5	Quincy Widdecombe	Philippine Pady	Rheumatologist	Moreno Valley, CA	Blue Cross Blue Shield of New Jersey Group
6	Quincy Widdecombe	Lydia Matczak	Plastic surgeon	Oakland, CA	Blue Cross Blue Shield of New Jersey Group
7	Quincy Widdecombe	Morena Posten	Neurological surgeon	San Mateo, CA	Blue Cross Blue Shield of New Jersey Group

# LIST OF PATIENTS THAT HAVE OPTED IN FOR A PARTICULAR SERVICE

```
SELECT mms_MEMBER.mem_fname + ' ' + mms_MEMBER.mem_lname as Member,  
mms_MEMBER.mem_id, mms_ASSIGNMENTS.service  
FROM mms_MEMBER  
INNER JOIN mms_ASSIGNMENTS on mms_MEMBER.mem_id=mms_ASSIGNMENTS.mem_id  
WHERE service='welfare check';
```

	Member	mem_id	service
1	Basia O' Donohue	MEM-002603	welfare check
2	Esther Graser	MEM-005565	welfare check
3	Nobe Steane	MEM-009057	welfare check
4	Kaiser Wandless	MEM-015119	welfare check
5	Bea Tew	MEM-024435	welfare check
6	Bea Tew	MEM-024435	welfare check
7	Pippa Waryk	MEM-033593	welfare check
8	Lukas Ricca	MEM-036021	welfare check
9	Lukas Ricca	MEM-036021	welfare check
10	Leonard Caddell	MEM-037209	welfare check
11	Daniele Stollwerk	MEM-039803	welfare check



# INSERT NEW ELECTION TO SWITCH INSURANCE

## Query:

```
SELECT mms_ELECTION.cli_ins_id,  
mms_ELECTION.election_id,mms_ELECTION.mem_id,  
mms_MEMBER.mem_fname, mms_MEMBER.mem_lname,  
mms_MEMBER.client_id  
FROM mms_ELECTION  
INNER JOIN mms_MEMBER ON  
mms_ELECTION.mem_id=mms_MEMBER.mem_id  
WHERE mms_election.mem_id='MEM-176808';
```

## Output:

	cli_ins_id	election_id	mem_id	mem_fname	mem_lname	client_id
1	200054	500178	MEM-176808	Andie	Coxon	c-054

```
UPDATE mms_CONTRACT  
SET insurer_id ='INS-000025'  
WHERE cli_ins_id=200054;
```

	cli_ins_id	insurer_name	client_id
1	200054	Cambia Health Solutions Inc.	c-054

```
SELECT mms_CONTRACT.cli_ins_id,  
mms_INSURER.insurer_name, mms_CONTRACT.client_id  
FROM mms_CONTRACT  
INNER JOIN mms_INSURER ON  
mms_CONTRACT.insurer_id=mms_INSURER.insurer_id  
WHERE cli_ins_id=200054;
```

	cli_ins_id	insurer_name	client_id
1	200054	Molina Healthcare Inc. Group	c-054

# MATCH PATIENTS WITH PHYSICIANS WITHIN SAME GEOGRAPHIC REGION

## Query:

```
SELECT
CONCAT (M.mem_fname, ' ', M.mem_lname) AS 'Mem Name',
M.mem_state AS 'Mem Location',
CONCAT (P.mem_fname, ' ', P.mem_lname) AS 'Phys Name',
P.mem_state AS 'Phys Location'
FROM
mms_MEMBER AS M, mms_PHYSICIAN AS P
WHERE
M.mem_state = P.phys_state
```

## Output:

	Mem Name	Mem Location	Phys Name	Phys Location
1	Leonor Klassman	DC	Jory Climpson	DC
2	Basia O' Donohue	UT	Sarette Dikes	UT
3	Basia O' Donohue	UT	Ebonee Lambard	UT
4	Anita Derycot	NM	Clementia Headford	NM
5	Anita Derycot	NM	Mitchel Dorking	NM
6	Anita Derycot	NM	Audry Cragell	NM
7	Brad Cluelow	AR	Fulton Chaudhry	AR
8	Esther Graser	TX	Maris Buncom	TX
9	Esther Graser	TX	Clary Schruur	TX
10	Esther Graser	TX	Brockie Doogan	TX