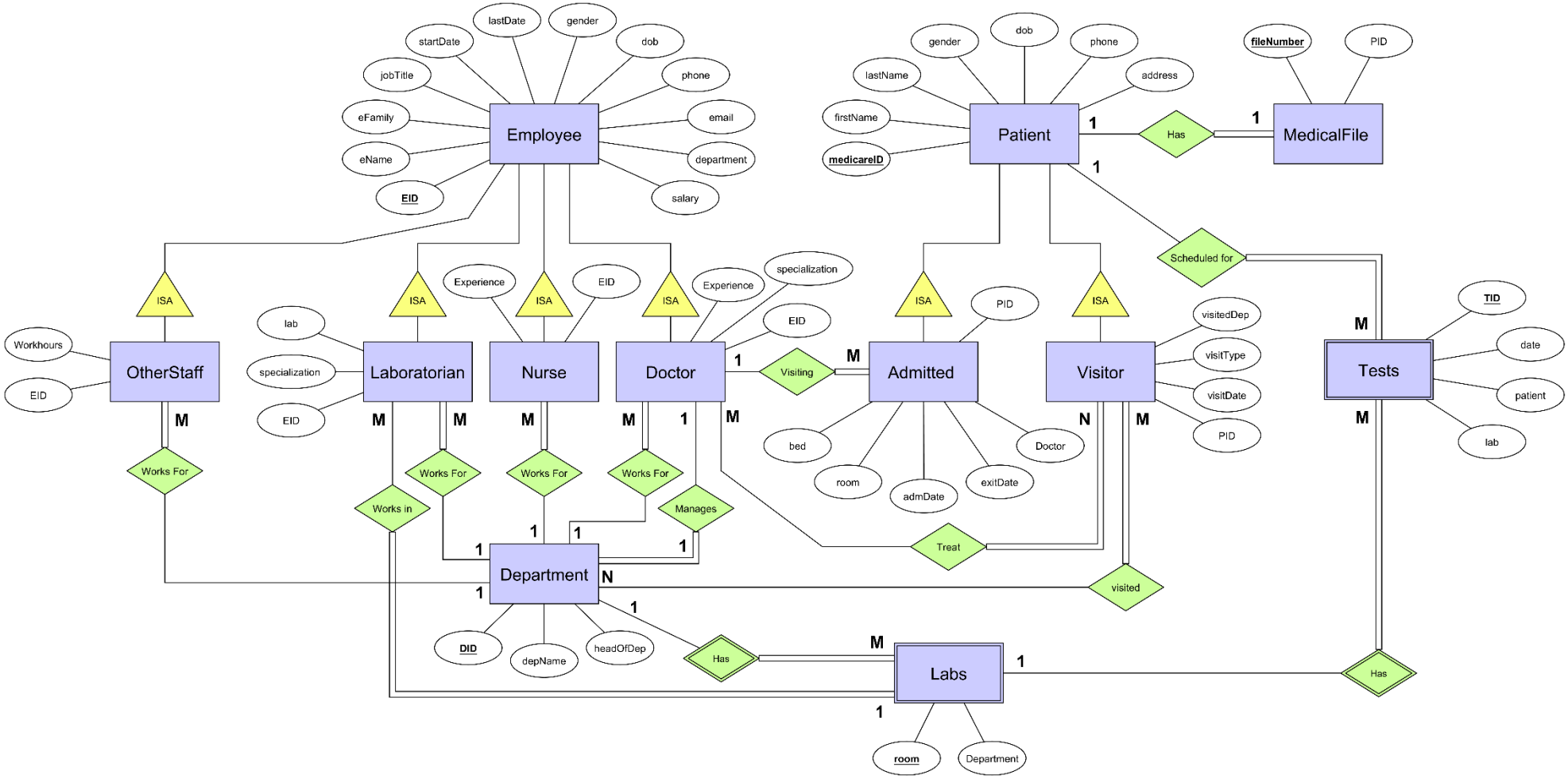
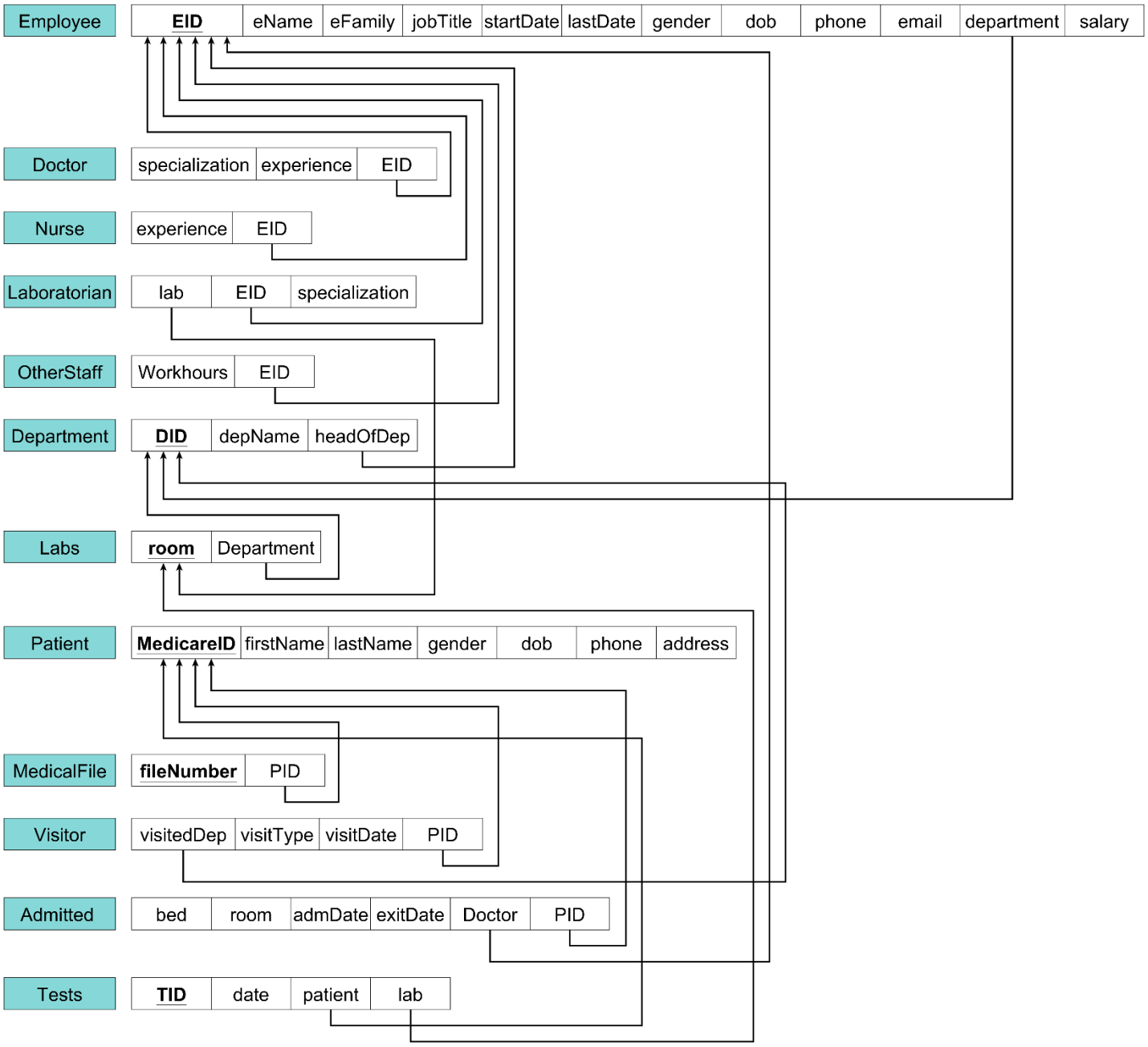
1- ER Diagram:


Employee
lastDate
gender
startDate
dob
jobTitle
phone
eFamily
email
eName
department
EID
salary
Patient
gender
dob
phone
lastName
address
firstName
medicareID
fileNumber
PID
Has
MedicalFile
Scheduled for
ISA
OtherStaff
Workhours
EID
Laboratorian
lab
specialization
EID
Nurse
Experience
EID
Doctor
Experience
specialization
EID
Visiting
Admitted
PID
bed
room
admDate
exitDate
Doctor
Visitor
visitedDep
visitType
visitDate
PID
Tests
TID
date
patient
lab
Works For
Works in
Manages
Department
DID
depName
headOfDep
Has
Labs
room
Department
Treat
visited
Has
M
N
1

2- Table Schemas:



3- Table information:

Employee											
EID	**eName**	**eFamily**	**jobTitle**	**startDate**	**lastDate**	**gender**	**dob**	**phone**	**email**	**dep**	**salary**
001	'Salem'	'Abdullah'	'Doctor'	'1998-11-18'	NULL	'Male'	'1950-12-12'	0551457682	'hos1@gmail.com'	110	40000
002	'Jamal'	'Asaad'	'Doctor'	'2002-05-01'	NULL	'Male'	'1954-10-14'	0555457575	'hos2@gmail.com'	115	20000
003	'Ali'	'Mansour'	'Doctor'	'2001-06-09'	NULL	'Male'	'1952-09-04'	0502457697	'hos3@gmail.com'	111	35000
004	'Mahmoud'	'Said'	'Doctor'	'1999-04-02'	NULL	'Male'	'1964-04-08'	0554557988	'hos4@gmail.com'	114	30000
005	'Karim'	'Nourani'	'Doctor'	'2005-04-19'	NULL	'Male'	'1953-02-10'	0562123057	'hos5@gmail.com'	112	35000
006	'Huda'	'Ahmed'	'Doctor'	'1999-12-03'	NULL	'Female'	'1957-12-12'	0555500731	'hos6@gmail.com'	110	15000
007	'Manal'	'Bassam'	'Doctor'	'2003-12-18'	NULL	'Female'	'1953-04-14'	0558970864	'hos7@gmail.com'	112	35000
008	'Afaf'	'Mohamed'	'Doctor'	'2001-02-20'	NULL	'Female'	'1966-05-05'	0553451876	'hos8@gmail.com'	111	19000
009	'Yahya'	'Mustafa'	'Doctor'	'1999-02-22'	NULL	'Male'	'1957-04-02'	0551509486	'hos9@gmail.com'	115	20000
010	'Rawan'	'Khaled'	'Doctor'	'1998-09-28'	NULL	'Female'	'1952-04-19'	0556480249	'hos10@gmail.com'	112	45000
011	'Saad'	'Abdullah'	'Doctor'	'2004-09-16'	NULL	'Male'	'1963-12-03'	0501342576	'hos11@gmail.com'	112	30000
012	'Mohammed'	'Ashraf'	'Doctor'	'1998-04-03'	NULL	'Male'	'1960-12-18'	0503102477	'hos12@gmail.com'	110	15000
013	'Nasser'	'Ziad'	'Doctor'	'1997-12-25'	NULL	'Male'	'1961-02-20'	0554857261	'hos13@gmail.com'	113	12000
014	'Maryam'	'Amin'	'Doctor'	'1998-04-13'	NULL	'Female'	'1964-02-22'	0537048351	'hos14@gmail.com'	110	15000
015	'Laila'	'Mustafa'	'Doctor'	'1999-11-12'	NULL	'Female'	'1952-07-15'	0559576845	'hos15@gmail.com'	113	35000
016	'Ryan'	'Moaz'	'Doctor'	'2001-06-11'	NULL	'Male'	'1967-18-25'	0554251308	'hos16@gmail.com'	114	30000
017	'Amira'	'Ahmed'	'Doctor'	'2000-01-17'	NULL	'Female'	'1958-02-10'	0551624981	'hos17@gmail.com'	112	30000
018	'Massoud'	'Ghanem'	'Doctor'	'2002-04-20'	NULL	'Male'	'1959-04-12'	0504527415	'hos18@gmail.com'	110	15000
019	'Ahmed'	'Yasser'	'Doctor'	'1998-10-12'	NULL	'Male'	'1951-09-08'	0540415340	'hos19@gmail.com'	115	38000
020	'Walid'	'Mohammad'	'Doctor'	'2003-05-22'	NULL	'Male'	'1970-05-23'	0500124604	'hos20@gmail.com'	113	12000
021	'Munir'	'Mokhtar'	'Doctor'	'2000-09-02'	NULL	'Male'	'1953-12-03'	0501542074	'hos21@gmail.com'	114	35000
022	'Nadia'	'Mohammed'	'Doctor'	'1997-07-15'	NULL	'Female'	'1956-01-23'	0550124681	'hos22@gmail.com'	113	12000
023	'Fouad'	'Marwan'	'Doctor'	'1999-18-25'	NULL	'Male'	'1957-10-17'	0550138549	'hos23@gmail.com'	111	19000
024	'Bilal'	'Mohammed'	'Doctor'	'1997-02-10'	NULL	'Male'	'1962-06-11'	0562154061	'hos24@gmail.com'	114	30000
025	'Jamal'	'Asaad'	'Doctor'	'2004-04-12'	NULL	'Male'	'1950-09-29'	0551234550	'hos25@gmail.com'	111	40000
026	'Alaa'	'Karam'	'Nurse'	'1997-09-08'	NULL	'Female'	'1961-04-10'	0555546210	'hos26@gmail.com'	111	7000
027	'Heba'	'Abdullah'	'Nurse'	'1998-05-23'	NULL	'Female'	'1954-10-01'	0551246540	'hos27@gmail.com'	110	6000
028	'Jahan'	'Mohamed'	'Nurse'	'1999-12-03'	NULL	'Female'	'1956-11-07'	0501642535	'hos28@gmail.com'	112	8000
029	'Amal'	'Mansour'	'Nurse'	'1999-01-23'	NULL	'Female'	'1965-04-13'	0553415246	'hos29@gmail.com'	113	7000
030	'Amena'	'Anas'	'Nurse'	'2001-10-17'	NULL	'Female'	'1970-11-12'	0506469158	'hos30@gmail.com'	112	8000
031	'Ibtisam'	'Mustafa'	'Nurse'	'2002-06-11'	NULL	'Female'	'1971-06-11'	0553645191	'hos31@gmail.com'	110	6000
032	'Dunya'	'Ibrahim'	'Nurse'	'1999-09-29'	NULL	'Female'	'1963-01-17'	0556164901	'hos32@gmail.com'	111	7000

Employee											
EID	**eName**	**eFamily**	**jobTitle**	**startDate**	**lastDate**	**gender**	**dob**	**phone**	**email**	**dep**	**salary**
033	‘Isra’	‘Othman’	‘Nurse’	‘1997-04-10’	NULL	‘Female’	‘1954-04-20’	0564661211	‘hos33@gmail.com’	115	6000
034	‘Asmaa’	‘Mahmud’	‘Nurse’	‘2003-10-01’	NULL	‘Female’	‘1966-10-12’	0550164240	‘hos34@gmail.com’	114	8000
035	‘Dalia’	‘Ahmed’	‘Nurse’	‘2004-11-07’	NULL	‘Female’	‘1965-05-22’	0500145012	‘hos35@gmail.com’	115	6000
036	‘Amani’	‘Mohamed’	‘Nurse’	‘2003-02-05’	NULL	‘Female’	‘1970-09-02’	0502134054	‘hos36@gmail.com’	112	8000
037	‘Amira’	‘Abdullah’	‘Nurse’	‘1997-07-20’	NULL	‘Female’	‘1959-03-21’	0506421645	‘hos37@gmail.com’	113	7000
038	‘Maram’	‘Karam’	‘Nurse’	‘1998-07-22’	NULL	‘Female’	‘1957-12-14’	0561342717	‘hos38@gmail.com’	114	8000
039	‘Basma’	‘Walid’	‘Nurse’	‘2000-08-27’	NULL	‘Female’	‘1962-01-19’	0566198421	‘hos39@gmail.com’	110	6000
040	‘Fatima’	‘Yousef’	‘Nurse’	‘2001-04-18’	NULL	‘Female’	‘1967-04-02’	0554510564	‘hos40@gmail.com’	115	6000
041	‘Dima’	‘Bahaa’	‘Nurse’	‘1999-03-21’	NULL	‘Female’	‘1956-04-19’	0554146714	‘hos41@gmail.com’	114	8000
042	‘Bushra’	‘Khalil’	‘Nurse’	‘2002-12-14’	NULL	‘Female’	‘1971-12-03’	0561605640	‘hos42@gmail.com’	113	7000
043	‘Nora’	‘Mohamed’	‘Nurse’	‘2001-01-19’	NULL	‘Female’	‘1964-12-18’	0550464579	‘hos43@gmail.com’	111	7000
044	'Ahmed'	'Jabbar'	‘Laboratory’	‘1997-09-11’	NULL	‘Male’	‘1953-02-20’	0560465801	‘hos44@gmail.com’	110	12000
045	'Mohamed'	'Ziad'	‘Laboratory’	‘2004-02-21’	NULL	‘Male’	‘1972-02-22’	0550164864	‘hos45@gmail.com’	114	12000
046	'Hashim'	'Jamal'	‘Laboratory’	‘1997-03-13’	NULL	‘Male’	‘1961-09-28’	0504541210	‘hos46@gmail.com’	110	12000
047	‘Hanan’	‘Mamoun’	‘Laboratory’	‘1998-07-19’	NULL	‘Female’	‘1963-09-16’	0504645210	‘hos47@gmail.com’	111	12000
048	‘Samar’	‘Abdulrahman’	‘Laboratory’	‘2003-11-21’	NULL	‘Female’	‘1970-08-27’	0554641680	‘hos48@gmail.com’	114	12000
049	'Mohamed'	'Hassan'	‘Laboratory’	‘1998-06-14’	NULL	‘Male’	‘1954-07-19’	0505458124	‘hos49@gmail.com’	110	12000
050	‘Abdullah’	‘Salama’	‘Laboratory’	‘1997-04-22’	NULL	‘Male’	‘1955-11-21’	0564615218	‘hos50@gmail.com’	111	12000
051	‘Ebtehal’	‘Yaqoub’	‘Laboratory’	‘1999-02-07’	NULL	‘Female’	‘1961-06-14’	0552168521	‘hos51@gmail.com’	114	12000
052	‘Ahmed’	‘Mohamed’	‘Laboratory’	‘2000-06-20’	NULL	‘Male’	‘1968-04-22’	0562681422	‘hos52@gmail.com’	110	12000
053	‘Zainab’	‘Ibrahim’	‘Laboratory’	‘2004-11-17’	NULL	‘Female’	‘1972-02-07’	0556596140	‘hos53@gmail.com’	111	12000
054	‘Mohammed’	‘Mustafa’	‘Laboratory’	‘2005-08-03’	NULL	‘Male’	‘1974-06-20’	0556845914	‘hos54@gmail.com’	111	12000
055	‘Turki’	‘Abdulrahman’	‘Laboratory’	‘2002-02-10’	NULL	‘Male’	‘1968-11-17’	0554126821	‘hos55@gmail.com’	114	12000
056	‘Adam’	‘Ibrahim’	‘Recepion’	‘1998-12-12’	NULL	‘Male’	‘1959-07-22’	0506296126	‘hos56@gmail.com’	118	9000
057	‘Thamer’	‘Mahmoud’	‘Recepion’	‘1999-10-14’	NULL	‘Male’	‘1964-08-27’	0556126241	‘hos57@gmail.com’	118	9000
058	‘Fatima’	‘Ahmed’	‘Recepion’	‘1997-09-04’	NULL	‘Female’	‘1955-04-18’	0556216425	‘hos58@gmail.com’	118	9000
059	‘Anas’	‘Othman’	‘Security’	‘1999-04-08’	NULL	‘Male’	‘1981-03-21’	0500462171	‘hos59@gmail.com’	116	3000
060	‘Mohammed’	‘Ashraf’	‘Security’	‘2000-02-10’	NULL	‘Male’	‘1975-12-14’	0556129484	‘hos60@gmail.com’	116	3000
061	‘Hamza’	‘Mustafa’	‘Security’	‘2002-12-12’	NULL	‘Male’	‘1982-01-19’	0502412001	‘hos61@gmail.com’	116	3000
062	‘Ahmad’	‘Salem’	‘Accountent’	‘1999-04-14’	NULL	‘Male’	‘1964-09-11’	0502146014	‘hos62@gmail.com’	117	10000
063	‘Ziad’	‘Khalidi’	‘Accountent’	‘2001-05-05’	NULL	‘Male’	‘1963-02-21’	0550142504	‘hos63@gmail.com’	117	10000

Doctor

specialization	experience	EID
Internist	30	001
Dentist	26	002
Orthopedist	28	003
Neurologist	16	004
Surgeon	27	005
Internist	23	006
Surgeon	27	007
Orthopedist	14	008
Dentist	23	009
Surgeon	28	010
Surgeon	17	011
Internist	20	012
Psychiatrist	19	013
Internist	16	014
Psychiatrist	28	015
Neurologist	13	016
Surgeon	22	017
Internist	21	018
Dentist	29	019
Psychiatrist	10	020
Neurologist	27	021
Psychiatrist	24	022
Orthopedist	23	023
Neurologist	18	024
Orthopedist	30	025

Laboratory

lab	specialization	EID
103	Pathologist	043
302	Pathologist	044
103	Clinical Biochemist	045
207	Clinical Biochemist	046
302	Clinical Biochemist	047
103	Medical Laboratory Scientist	048
207	Medical Laboratory Scientist	049
302	Medical Laboratory Technician	050
103	Medical Laboratory Technician	051
207	Medical Laboratory Technician	052
207	Medical Laboratory Assistant	053
302	Medical Laboratory Assistant	054

Other Staff

Workhours	EID
8	038
9	039
8	040
9	041
8	042
8	043
12	044
12	045

Labs

room	Department
103	110
207	111
302	114

Nurse

experience	EID
5	011
7	012
3	013
2	014
6	015
3	016
5	017
2	018
3	019
2	020
1	021
7	022
3	023
5	024
4	025
7	026
1	027
2	028

Department

DID	depName	HeadOfDep
110	Internal Medicine	001
111	Orthopedic	003
112	Surgery	010
113	Psychiatry	015
114	Neurology	026
115	Dentistry	019
116	Security	005
117	Accounting	007
118	Reception	021

Patient						
MedicareID	**firstName**	**lastName**	**gender**	**dob**	**phone**	**address**
100	'Mahmoud'	'Hussain'	'Male'	'1959-07-22'	0556217965	'Riyadh'
101	'Khalil'	'Akram'	'Male'	'1964-08-27'	0504179535	'Riyadh'
102	'Jamel'	'Khattab'	'Male'	'1955-04-18'	0552641501	'Madinah'
103	'Amjad'	'Abdulrahim'	'Male'	'1981-03-21'	0556142016	'Jeddah'
104	'Mahasen'	'Abdullah'	'Female'	'1957-12-14'	0502614206	'Makkah'
105	'Bahaa'	'Karam'	'Male'	'1954-07-19'	0500610264	'Makkah'
106	'Walid'	'Mohamed'	'Male'	'1955-11-21'	0504164597	'Jeddah''
107	'Soad'	'Mahmoud'	'Female'	'1961-06-14'	0562146041	'Madinah'
108	'Fatima'	'Abdelrahim'	'Female'	'1967-04-02'	0540142610	'Madinah'
109	'Alaa'	'Hamad'	'Male'	'1956-04-19'	0540145724	'Dammam'
110	'Ali'	'Abdulrahman'	'Male'	'1971-12-03'	0504878150	'Madinah'
111	'Moataz'	'Mohamed'	'Male'	'1964-12-18'	0550151077	'Riyadh'
112	'Manal'	'Mohamed'	'Female'	'1953-02-20'	0540102489	'Jeddah'
113	'Ayman'	'Shams'	'Male'	'1972-02-22'	0500602417	'Makkah'
114	'Husam'	'Ahmed'	'Male'	'1967-04-02'	0556204627	'Dammam'
115	'Abdulrahman'	'Yousef'	'Male'	'1950-09-29'	0531626731	'Hasa'
116	'Sara'	'Ahmed'	'Female'	'1961-04-10'	054201362	'Jeddah'
117	'Mohamed'	'Iqbal'	'Male'	'1954-10-01'	055917511	'Riyadh'
118	'Abdullah'	'Tammam'	'Male'	'1956-11-07'	050165701	'Hasa'
119	'Sami'	'Siraj'	'Male'	'1965-04-13'	055795120	'Jeddah'
120	'Laila'	'Mansor'	'Female'	'1970-11-12'	055641627	'Riyadh'
121	'Aya'	'Ahmed'	'Female'	'1971-06-11'	054217920	'Madinah'
122	'Marwa'	'Mostafa'	'Female'	'1957-12-12'	053297035	'Jeddah'
123	'Ahmed'	'Riad'	'Male'	'1953-04-14'	055615279	'Makkah'
124	'Saleem'	'Alaa'	'Male'	'1966-05-05'	050612701	'Riyadh'
125	'Amera'	'Mahmoud'	'Female'	'1957-04-02'	056619720	'Hasa'
126	'Mohamed'	'Magdy'	'Male'	'1952-04-19'	054697152	'Madinah'
127	'Yahia'	'Ibrahim'	'Male'	'1963-12-03'	055651781	'Madinah'
128	'Mohamed'	'Islam'	'Male'	'1960-12-18'	0569517963	'Riyadh'

Visitor			
visitedDep	**visitType**	**visitDate**	**PID**
115	'first visit'	'2007-01-22'	101
110	'first visit'	'2007-01-28'	102
111	'first visit'	'2007-02-10'	103
115	'follow-up visit'	'2007-02-22'	101
114	'first visit'	'2007-02-19'	104
112	'first visit'	'2007-03-20'	105
113	'first visit'	'2007-04-11'	106
114	'first visit'	'2007-04-18'	107
115	'follow-up visit'	'2007-02-28'	101
110	'first visit'	'2007-06-19'	108
112	'first visit'	'2007-07-14'	109
110	'follow-up visit'	'2007-07-22'	102
115	'first visit'	'2007-08-23'	110
112	'first visit'	'2007-09-10'	111
115	'first visit'	'2007-10-18'	100

Medical File	
FileNumber	**PID**
1100	100
1101	101
1102	102
1103	103
1104	104
1105	105
1106	106
1107	107
1108	108
1109	109
1110	110
1111	111
1112	112
1113	113
1114	114
1115	115
1116	116
1117	117
1118	118
1119	119
1120	120
1121	121
1122	122
1123	123
1124	124
1125	125
1126	126
1127	127
1128	128

Admitted					
bed	**room**	**admDate**	**exitDate**	**Doctor**	**PID**
1203	120	‘2007-03-22’	NULL	003	112
1305	130	‘2007-03-28’	‘2007-04-28’	013	113
1211	121	‘2007-04-10’	‘2007-06-10’	001	114
2150	215	‘2007-04-22’	‘2007-05-22’	002	115
1201	120	‘2007-05-19’	NULL	008	116
1420	142	‘2007-06-20’	NULL	004	117
1350	135	‘2007-06-11’	NULL	014	118
1322	132	‘2007-06-18’	‘2007-08-18’	007	119
1207	120	‘2007-07-28’	‘2007-08-28’	012	120
1401	140	‘2007-07-19’	‘2007-09-19’	016	121
1702	170	‘2007-08-14’	‘2007-09-14’	025	122
1408	140	‘2007-09-22’	NULL	001	123
1311	131	‘2007-09-23’	‘2007-10-23’	011	124
1421	142	‘2007-010-10’	NULL	021	125
1520	152	‘2007-11-18’	‘2007-12-18’	009	126
1630	163	‘2007-11-10’	‘2007-01-05’	011	127
1323	132	‘2007-12-18’	NULL	003	128

Test			
TID	**date**	**patient**	**lab**
0010	‘2007-01-28’	102	103
0011	‘2007-02-10’	103	207
0012	‘2007-02-22’	104	302
0013	‘2007-03-22’	112	207
0014	‘2007-05-19’	116	207
0015	‘2007-06-20’	117	302
0016	‘2007-06-11’	118	103
0017	‘2007-09-22’	123	103
0018	‘2007-010-10’	125	302
0019	‘2007-12-18’	128	207

4- SQL commands:

5- Screen Shots:

- **Table Creation (one by one)**
- **Data Insertion (one by one)**
- **Queries**