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**Joseph P. Hanson, A Professional Law Corporation**

**flock**

**Database**

**For CS342, Fall 2013**

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Phase I

# Fact Finding Techniques

Local law firm, Joseph P. Hanson, Professional Law Corporation, has provided us with business logic about the firm's operations. Additional research from Wikipedia articles, and other law firm websites informed the structure of our database.

# Methods Used to Gather Data

Because the primary goal of our database is to document the proceedings of the Joseph P. Hanson law firm, correspondence with the firm was our primary method of gathering data. When necessary, we generated data to protect lawyer-client privilege and the privacy of the clients.

# Introduction to Law Firm

Law firm that takes clients who have need of legal consultation. Clients bring either litigation cases, or other legal matters such as estate planning, general business, or transactional cases. Staff working for the lawyer sets the initial and subsequent appointments between the lawyer and the client. The lawyer, client, and adverse lawyer appear in court if the client is involved in a litigation case. Litigation cases can be for business, real estate, or civil litigation.

# Structure of the Law Firm

It is common for law firms to specialize in specific areas of law due to the growing complexity of laws. As a single lawyer law firm, the Joseph P. Hanson firm serves multiple areas of law. Multiple staff can work for multiple lawyers should the firm expand, so we have provided flexibility for expansion.

# Major Objects

Lawyer – entity that provides legal counsel to clients, makes court appearances on behalf of clients, and employs staff. The name and title of the lawyer is tracked.

Client – entity that seeks legal counsel from the lawyer about a case. May appear in court for litigation cases, and attends appointments with the lawyer. The name and contact information is tracked.

Case - entity that represents the legal matter for which the client is seeking counsel. The case is discussed during appointments between the lawyer and the client, tried in court appearances if it is a litigation case. The case’s start date, end date, category( litigation{ business, real estate, civil }, general business, estate planning, transactional), evidence, designation, and notes are tracked.

Adverse lawyer – entity that is only involved in litigation cases, and is tied to the lawyer, client and case through the appear in court relationship. The name and contact of the adverse lawyer is tracked.

Staff - sets appointments between lawyers and clients, and works for the lawyer. Name and contact information are tracked

Appointment - entity that involves the lawyer, client, and case. It is set up by the staff and the date, time, location, and description are tracked.

# Data Views and Operations For User Groups

There will be a few different data views, one for the lawyer and the other for the staff. The lawyer will be able to view all of the information about the staff and clients. The staff's information will display their first name, last name, date of birth, title, salary, hours per week, start date, and end date. The client's information will display the first name, last name, business name, their various phone numbers, email, address, date of birth, and case number(s).

The staff's view will include areas to set up a date, time, location, and description between the lawyer and client. The staff is not allowed to view private information about the clients; however, they can have the case number if needed to add to the description of the appointment.

# Entity Set Description

## Lawyer

Description: Currently there is only one Lawyer at the law firm; however, there may be more in the future so we will account for that. The Lawyer employs the staff and counsels the client. He also appears in court with the client, adverse lawyer, and case.

Candidate Keys:

1.   Law\_ID(Primary Key)

2.   First Name

3. Last Name

4.   Position

Fields to be indexed:

1.   Law\_ID

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Attribute Name** | **Law\_ID** | **First Name** | **Last Name** | **Position** |
| **Description** | ID # per lawyer | Lawyers first name | Lawyers last name | Lawyers position in the law firm |
| **Domain/Type** | Integer | String | String | String |
| **Value-Range** | 0-Max | Any | Any | Any |
| **Default Value** | LastID + 1 | none | none | none |
| **Null Value allowed?** | no | no | no | no |
| **Unique?** | Yes | no | no | no |
| **Single/**  **Multiple-Value** | single | single | single | single |
| **Simple/Composite** | simple | simple | simple | simple |

## Staff

Description: The staff is employed by the Lawyer and he/she sets up the appointment between the lawyer and the client. The information saved for the staff entity is the staffs name, date of birth, and title. The staff is hired by the lawyer and their information can be added or deleted accordingly.

Candidate Keys:

1.   Staff\_ID(Primary Key)

2.   First Name

3. Last Name

3.   Title

Fields to be indexed:

1.   Staff\_ID

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Attribute Name** | **Staff\_ID** | **First Name** | **Last Name** | **Title** |
| **Description** | ID # per staff member | Staff’s first name | Staff’s last name | Title of staff member |
| **Domain/Type** | Integer | String | String | String |
| **Value-Range** | 0-Max | Any | Any | Any |
| **Default Value** | LastID + 1 | none | none | none |
| **Null Value allowed?** | no | no | no | no |
| **Unique?** | Yes | no | no | no |
| **Single/Multiple-Value** | single | single | single | single |
| **Simple/Composite** | simple | simple | simple | simple |

## Client

Description: The Client is one of the main entities and comes to the lawyer with an issue or case that they need help with. Information that will be stored for each client include name, phone number(s), email, address, and date of birth. The client will be added when he/she comes to visit the lawyer during the first appointment. Clients can be added or deleted.

Candidate Keys:

1.   Client\_ID (Primary Key)

2.   First Name

3. Last Name

4.   Phone Numbers

5.   Email

6.   Address

7.   Date of Birth

Fields to be indexed:

1.   Client\_ID

2. First Name

3. Last Name

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Client\_ID** | **First Name** | **Last Name** | **Phone Number** | **Email** | **Address** | **Date of Birth** |
| **Description** | ID # per Client | Client’s first name | Client’s last name | Client’s phone number | Client’s Email | Client’s Address | Client’s date of birth |
| **Domain/Type** | Integer | String | String | string | string | string | string |
| **Value-Range** | 0-Max | any | any | any | any | any | any |
| **Default Value** | LastID + 1 | none | none | none | none | none | none |
| **Null Value?** | no | no | no | no | yes | yes | yes |
| **Unique?** | Yes | no | no | no | yes | no | no |
| **Single /**  **Multiple-Value** | single | single | single | single | single | single | single |
| **Simple /**  **Composite** | simple | simple | simple | simple | simple | simple | simple |

## Case

Description: The case is what is created when the client comes to the lawyer with an issue or the case is brought to the lawyer. Information about the case can be added or deleted as seen fit according to the lawyer and the client. The Case has its own id in which will bring up all of the details about the case.

Candidate Keys:

1.   Case\_ID(Primary Key)

2.   Start Date

3. End Date

4.   Evidence

5.   Category

6.   Litigation

7.   Notes

Fields to be indexed:

1.   Case\_ID

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Case\_ID** | **Start Date** | **End Date** | **Evidence** | **Category** | **Litigation** | **Notes** |
| **Description** | ID # per case | Date case is created | Date case is closed | Facts about the case | Type of case | Type of litigation | Extra info. |
| **Domain/Type** | Integer | String | string | String | string | string | string |
| **Value-Range** | 0-Max | any | any | any | -Litigation  -General Business  -Estate Planning  -Transactional | -Business  -Civil  -Real Estate | any |
| **Default Value** | LastID + 1 | date of entry | none | none | none | none | none |
| **Null Value allowed?** | no | no | yes | yes | no | yes | yes |
| **Unique?** | Yes | no | no | no | no | no | no |
| **Single /**  **Multiple-Value** | single | single | single | multiple | single | single | multiple |
| **Simple /**  **Composite** | simple | simple | simple | simple | simple | simple | simple |

## Adverse Lawyer

Description: There is information for the Adverse Lawyer that is stored; however Joe has stated that he does not keep too much information on them. The adverse lawyer is added for the court appearance and the information saved will be their name, address, email, and phone number.

Candidate Key:

1.   AdLaw\_ID(Primary Key)

2.   First Name

3. Last Name

4.   Address

5.   Email

6.   Phone Number

Fields to be indexed:

1.   AdLaw\_ID

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **AdLaw\_ID** | **First Name** | **Last Name** | **Address** | **Email** | **Phone Number** |
| **Description** | ID # per adverse lawyer | Adverse Lawyer’s first name | Adverse Lawyer’s last name | Adverse Lawyer’s  Business address | Adverse Lawyer’s Email | Adverse Lawyer’s Phone Number |
| **Domain/Type** | Integer | String | String | String | String | String |
| **Value-Range** | 0-Max | any | any | any | any | any |
| **Default Value** | LastID + 1 | none | none | none | none | none |
| **Null Value allowed?** | no | no | no | no | no | no |
| **Unique?** | Yes | no | no | no | yes | no |
| **Single /**  **Multiple-Value** | single | single | single | single | single | single |
| **Simple /**  **Composite** | simple | simple | simple | simple | simple | simple |

## Appointment

Description: The appointment is setup by the staff and includes the lawyer and the client. Information about the appointment that is kept is the date, time, location, and description for the lawyer to view.

Candidate Key:

1.   Apt\_ID(Primary Key)

2.   Date

3.   Time

4.   Location

5.   Description

Fields to be indexed:

1.   Apt\_ID

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Apt\_ID** | **Date** | **Time** | **Location** | **Description** |
| **Description** | ID # per appointment | date of appointment | Time of appointment | Location of appointment | What the appointment is about |
| **Domain/Type** | Integer | String | String | String | String |
| **Value-Range** | 0-Max | any | any | any | any |
| **Default Value** | LastID + 1 | none | none | none | none |
| **Null Value allowed?** | no | no | no | no | yes |
| **Unique?** | Yes | no | no | no | no |
| **Single /**  **Multiple-Value** | single | single | single | single | multiple |
| **Simple /**  **Composite** | simple | simple | simple | simple | simple |

**Relationship Set Description**

## Works For

Description: This relationship is for the staff and lawyer. The various staff works for the lawyer and the lawyer keeps track of the start date, end date, salary, and how many hours a week the staff works by adding them to the database.

Entity sets involved: Staff and Lawyer

Mapping Cardinality: M...M

Descriptive Fields: Start Date, End Date, Salary, and Hours per week

Participation Constraints: The staff has total participation for the relationship and the lawyer has partial participation. For a staff member to work in the law firm, they have to work for a lawyer; however, not every lawyer has to employ a staff member.

## Counsels

Description: This relationship is between the lawyer and the client. The Counseling session(s) have a start date and end date that are stored. Also if the lawyer wants, the billable hours and hourly fee will be inputted. This relationship allows the client and lawyer to discuss the case at hand.

Entity sets involved: Lawyer and Client

Mapping Cardinality: 1..M

Descriptive Fields: Start Date, End Date, Billable Hours, and Hourly Fee

Participation Constraints: The relationship is total participation for both the lawyer and the client. The lawyer has to counsel clients in order to be a lawyer and the client has to receive counsel from a lawyer to be a client.

**Sets**

Description: This relationship is between the staff and the appointment. The Staff sets up the appointment in which the lawyer and the client will meet for the counseling.

Entity sets involved: Staff, Appointment, (Lawyer and Client?)

Mapping Cardinality: 1..M

Descriptive Fields: None

Participation Constraints: The participation is partial for the staff  and total participation for the appointments. There could be one staff member that does not have to set up appointments to be employed by the lawyer. The appointment is total participation because if the appointment is not set by the staff, it does not exist.

## Involves

Description: This relationship is about the appointment which involves the Lawyer, The Case at hand, and the client. The lawyer will fill out details about what happened at the meeting.

Entity sets involved: Appointment, Lawyer, Client, and Case

Mapping Cardinality: M..1..1..1

Descriptive Fields: None

Participation Constraints: The appointment is total participation because it still needs to involve a lawyer and a client. The case has total participation because every case must be involved in at least one appointment. The rest of the entities have partial participation because they can exist without an appointment.

## Court Appearance

Description: This relationship is between the lawyer, adverse lawyer, client, and case. The appearance in court can be documented and be put into the database to keep information. Also the relationship will store the date, time, and results for the appearance in court.

Entity sets involved: Lawyer, Case, Client, Adverse lawyer

Mapping Cardinality: M..M..M..M

Descriptive Fields: Date, Time, and Results

Participation Constraints: The participation for all the entities in this relationship is partial because there can be lawyers, adverse lawyers, clients, and cases without a court appearance.

## Litigates

Description: The relationship is between the adverse lawyer and the case. The results of the litigation are stored along with the starting date and the ending date.

Entity sets involved: Adverse lawyer and case

Mapping Cardinality: 1..M

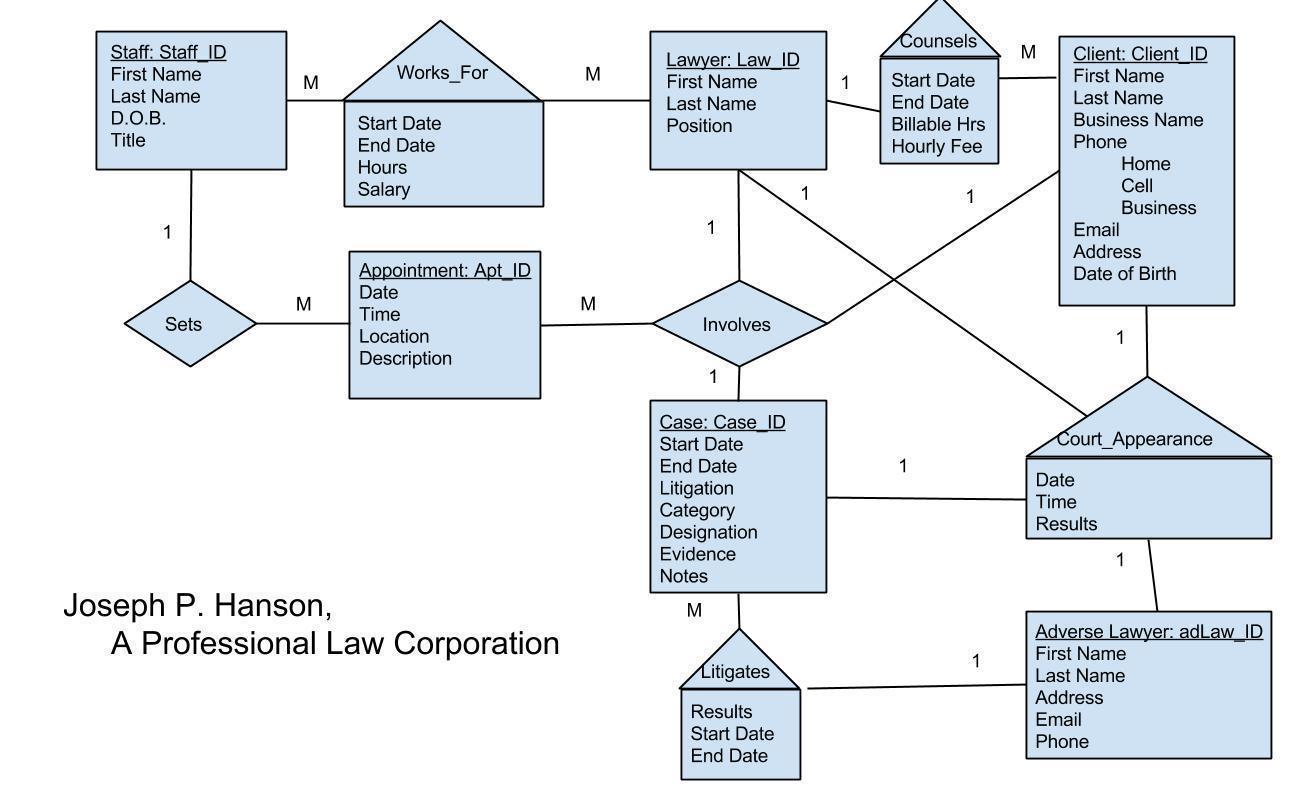
Descriptive Fields: Results, Start Date, and End Date

Participation Constraints: The adverse lawyers has total participation because there has to be an adverse lawyer that is litigating the case. The case has partial participation because not every case is litigated.

# Related Entity Set

None.

# ER Diagram



Phase II

# 

# Description of ER Model and Relational Model

The ER model began as a high-level conceptual description of a database. ER models contain two major components, entities and relationships. Entities represent a real-world object, concept, or person that should be modeled in the database. A relationship is an interaction among one or more entities. Both entities and relationships may have attributes, important traits that should be tracked in the database.

The relational model is also a conceptual representation of a database, but one that more closely resembles the actual implementation. Relational models contain only one major component: relations. Relations have a name, and attributes which describe important features of the relation. Candidate keys are the set of attributes that can be used to uniquely identify records in the relation. A worst case scenario would result in the entire set of attributes being used as a primary key.

# Comparison of ER Model and Relational Model

The ER model serves as a way for the users of the database to communicate their needs to developers. Even though there is no way to directly implement an ER model as a database, it is a good way for developers to understand their users, and get a basic summary/outline for database requirements.

Stepping closer to the actual implementation of the database, the relational model clarifies restrictions and constraints from the ER model. Any entities or relationships with complex/multi-valued attributes must be flattened, or transformed into separate relations with foreign keys from the entity or relationship they came from. The relational model can be directly implemented as a database.

# Conversion from ER Model to Relational Model

An important step in converting the ER model to a relational model is to document the primary keys of entities that are involved in relationships. In the cases where an entity is involved in a one-to-many binary relationship, the primary key from the one entity is used as a foreign key in the entity on the many-side. In relationships that involve more than two entities, we made a relation from the relationship itself, using the primary keys from the entities involved as foreign keys in the new relation.

In certain cases we were able to dissolve a binary relationship that had no attributes. We made a relation for both of the entities involved, and included the primary key from the dominant entity as a foreign key in the subordinate entity. Our ER model contained no recursive relationships.

# Constraints

ER model constraints serve to ensure that values, attributes and relationship membership are properly formed. Constraints play a similar, but more specific role in the the relational database. Each attribute for every relation will have constraints placed on its values.

Restrictions known as entity integrity constraints require the primary keys of relations to not be NULL. The entity integrity constraint ensures the uniqueness of records in each relation.

Referential integrity constraints states that any relation containing foreign keys, i.e. referring to a relation outside itself, must not allow null values for those foreign keys. The constraint on referential integrity is important because it ensures that relations that use foreign keys only include relation instances in which the foreign relation instance actually exists in the database.

Entity and referential constraints are usually handled by options provided by the DBMS. Constraints on business rules are too specific to be handled by generic DBMS provisions, and must be coded by developers to meet the requirements of the business. Business rules can be implemented as SQL triggers that perform checks and other operations upon insertions, deletions, checks and updates.

# Lawyer

Lawyer(Law\_ID, FName, LName, Position)

1. Law\_ID - Domain: Integer
2. Default Value: (LastID + 1)
3. Primary Key
4. FName - Domain: String
5. NOT NULL
6. LName - Domain: Strin
7. NOT NULL
8. Position - Domain: String
9. NOT NULL

Candidate Keys:

1. Law\_ID
2. FName
3. LName
4. Position

# Client

Client(Client\_ID, FName, LName, BusName, Email, Address, DOB)

1. Client\_ID - Domain: Integer
2. Default Value: (LastID + 1)
3. Primary Key
4. FName - Domain: String
5. NOT NULL
6. LName - Domain: String
7. NOT NULL
8. BusName - Domain: String
9. NOT NULL
10. Email - Domain: String
11. Address - Domain: String
12. DOB - Domain: String

Candidate Keys:

1. Client\_ID
2. FName
3. LName
4. BusName
5. Email
6. Address
7. DOB

# Appointment

Appointment(Apt\_ID, Law\_ID, Case\_ID, Client\_ID, Date, Location, Description)

1. Apt\_ID - Domain: Integer
2. Default Value:(LastID + 1)
3. Primary Key
4. Law\_ID - Domain: Integer
5. NOT NULL
6. Case\_ID - Domain: Integer
7. NOT NULL
8. Client\_ID - Domain: Integer
9. NOT NULL
10. Date - Domain: String
11. NOT NULL
12. Location - Domain: String
13. NOT NULL
14. Description - Domain: String

Candidate Keys:

1. Apt\_ID(primary key)

# Case

Case(Case\_ID, Client\_ID, SDate, EDate, Evidence, Category, Litigation, Notes)

1. Case\_ID - Domain: Integer
2. Default Value: LastID + 1
3. Primary Key
4. Client\_ID - Domain: Integer
5. NOT NULL
6. SDate - Domain: String
7. NOT NULL
8. EDate - Domain: String
9. Evidence - Domain: String
10. Category - Domain: String
11. NOT NULL
12. Litigation - Domain: String
13. Notes - Domain: String

Candidate Keys:

1. Case\_ID (Primary Key)

# Staff

Staff(Staff\_ID, FName, LName, Title)

1. Staff\_ID - Domain: Integer
2. Default Value: LastID + 1
3. Primary Key
4. FName
5. NOT NULL
6. LName
7. NOT NULL
8. Title
9. NOT NULL

Other Constraints not already mentioned:

None

Candidate Keys:

1. Staff\_ID (Primary Key)

# Phone

Phone(Phone\_ID, Home, Cell, Business)

1. Phone\_ID - Domain: Integer
2. Default Value: LastID + 1
3. Primary Key
4. Home
5. Cell
6. Business

Candidate Keys:

1. Phone\_ID (Primary Key)

# Adverse Lawyer

Adverse Lawyer(AdLaw\_ID, Fname, LName, Address, Email, PhoneNumber)

1. AdLaw\_ID
2. Default Value: LastID + 1
3. Primary Key
4. FName
5. NOT NULL
6. LName
7. NOT NULL
8. Address
9. NOT NULL
10. Email
11. NOT NULL
12. PhoneNumber
13. NOT NULL

Candidate Keys:

1. AdLaw\_ID (Primary Key)

# Sets

Sets(Set\_ID, Staff\_ID, Apt\_ID, Date\_Set)

1. Set\_ID
   1. Default Value: LastID + 1
   2. Primary Key
2. Staff\_ID
   1. NOT NULL
3. Apt\_ID
   1. NOT NULL
4. Date\_Set
   1. NOT NULL

Candidate Keys:

1. Set\_ID (Primary Key)
2. Staff\_ID

# Works For

Works For(Work\_ID, Staff\_ID, Law\_ID, sDate, eDate, Salary, Hours)

1. Work\_ID
2. Default Value: LastID + 1
3. Primary Key
4. Staff\_ID
5. NOT NULL
6. Law\_ID
7. NOT NULL
8. sDate
9. NOT NULL
10. eDate
11. Salary
12. Hours

Candidate Keys:

1. Work\_ID (Primary Key)
2. Staff\_ID
3. Law\_ID

# Counsels

Counsels(Counsels\_ID, Law\_ID, Client\_ID, SDate, EDate, Hours, Fees)

1. Counsels\_ID
2. Default Value: LastID + 1
3. Primary Key
4. Law\_ID
5. NOT NULL
6. Client\_ID
7. NOT NULL
8. SDate
9. NOT NULL
10. EDate
11. Hours
12. Fees

Candidate Keys:

1. Counsels\_ID (Primary Key)
2. Law\_ID
3. Client\_ID
4. SDate

# Litigates

Litigates(Lit\_ID, AdLaw\_ID, Case\_ID, SDate, EDate, Results)

1. Lit\_ID
2. Default Value: LastID + 1
3. Primary Key
4. AdLaw\_ID
5. NOT NULL
6. Case\_ID
7. NOT NULL
8. SDate
9. NOT NULL
10. EDate
11. Results

Candidate Keys:

1. Lit\_ID (Primary Key)
2. AdLaw\_ID
3. Case\_ID

# Court Appearance

Court Appearance(CA\_ID, Case\_ID, Client\_ID, Law\_ID, AdLaw\_ID, Date, Time, Results)

1. CA\_ID
2. Default Value: LastID + 1
3. Primary Key
4. Case\_ID
5. NOT NULL
6. Client\_ID
7. NOT NULL
8. Law\_ID
9. NOT NULL
10. AdLaw\_ID
11. NOT NULL
12. Date
13. NOT NULL
14. Time
15. Results

Candidate Keys:

1. CA\_ID (Primary Key)
2. Case\_ID
3. Client\_ID
4. Law\_ID
5. AdLaw\_ID

Fact Finding and Information Gathering

# Lawyer

Lawyer(Law\_ID, FName, LName, Position)

# 

# Client

Client(Client\_ID, FName, LName, BusName, Email, Address, DOB)



# Appointment

Appointment(Apt\_ID, Law\_ID, Case\_ID, Client\_ID, Date, Location, Description)

# 

# Case

Case(Case\_ID, Client\_ID, SDate, EDate, Evidence, Category, Litigation, Notes)

# 

# Staff

Staff(Staff\_ID, FName, LName, Title)

# 

# Phone

Phone(Phone\_ID, Client\_ID, Home, Cell, Business)

# 

# Adverse Lawyer

Adverse Lawyer(AdLaw\_ID, FName, LName, Address, Email, PhoneNumber)



# Sets

Sets(Set\_ID, Staff\_ID, Apt\_ID, Date\_Set)

|  |  |  |  |
| --- | --- | --- | --- |
| Set\_ID | Staff\_ID | Apt\_ID | Date\_Set |
| 1 | 2 | 4 | 10/6/1998 |
| 2 | 8 | 7 | 8/20/2010 |
| 3 | 10 | 8 | 10/13/2001 |
| 4 | 8 | 6 | 8/30/1986 |
| 5 | 6 | 4 | 12/7/2005 |
| 6 | 8 | 6 | 7/30/2001 |
| 7 | 2 | 7 | 12/8/2007 |
| 8 | 4 | 3 | 10/14/1993 |
| 9 | 7 | 10 | 3/3/1987 |
| 10 | 2 | 2 | 8/15/1998 |
| 11 | 6 | 3 | 7/23/2014 |
| 12 | 5 | 8 | 4/28/2003 |
| 13 | 6 | 1 | 8/5/1998 |
| 14 | 8 | 10 | 10/25/2007 |
| 15 | 6 | 4 | 9/17/2006 |
| 16 | 5 | 7 | 9/21/1992 |
| 17 | 7 | 1 | 6/25/1990 |
| 18 | 1 | 7 | 9/25/2001 |
| 19 | 8 | 3 | 3/22/2011 |
| 20 | 2 | 7 | 2/10/2005 |
| 21 | 9 | 2 | 9/22/2000 |
| 22 | 9 | 9 | 6/3/2012 |
| 23 | 7 | 8 | 2/3/2001 |
| 24 | 7 | 10 | 4/19/2002 |
| 25 | 9 | 3 | 3/16/1997 |
| 26 | 9 | 1 | 9/9/2012 |
| 27 | 9 | 3 | 8/1/1988 |
| 28 | 5 | 4 | 3/3/2003 |
| 29 | 2 | 8 | 4/1/1993 |
| 30 | 2 | 6 | 8/1/1996 |
| 31 | 6 | 10 | 9/1/1997 |
| 32 | 10 | 3 | 5/3/2003 |
| 33 | 1 | 3 | 7/28/2001 |
| 34 | 4 | 9 | 11/20/2014 |
| 35 | 6 | 10 | 12/12/1999 |
| 36 | 4 | 8 | 3/5/2006 |
| 37 | 2 | 4 | 5/28/2012 |
| 38 | 8 | 7 | 9/28/2011 |
| 39 | 5 | 2 | 10/14/2011 |
| 40 | 8 | 3 | 12/21/2014 |
| 41 | 7 | 10 | 4/30/1995 |
| 42 | 1 | 4 | 12/31/1992 |
| 43 | 10 | 2 | 10/16/2006 |
| 44 | 3 | 10 | 5/22/1992 |
| 45 | 6 | 5 | 7/8/2002 |
| 46 | 5 | 8 | 12/21/1990 |
| 47 | 6 | 9 | 5/19/2014 |
| 48 | 3 | 5 | 6/19/2006 |
| 49 | 3 | 6 | 7/20/1988 |
| 50 | 4 | 1 | 12/8/2003 |
| 51 | 3 | 4 | 1/23/1995 |
| 52 | 2 | 7 | 2/21/2008 |
| 53 | 2 | 2 | 2/4/2011 |
| 54 | 9 | 1 | 5/7/1990 |
| 55 | 9 | 7 | 2/11/1999 |
| 56 | 1 | 4 | 5/4/2005 |
| 57 | 6 | 3 | 1/19/1999 |
| 58 | 6 | 1 | 9/29/1989 |
| 59 | 5 | 7 | 12/4/1988 |
| 60 | 5 | 2 | 5/5/2010 |
| 61 | 7 | 6 | 6/30/2007 |
| 62 | 1 | 6 | 12/19/2013 |
| 63 | 6 | 5 | 3/2/2009 |
| 64 | 7 | 8 | 2/6/2010 |
| 65 | 3 | 7 | 3/18/2000 |
| 66 | 9 | 6 | 4/16/1993 |
| 67 | 8 | 7 | 9/3/2003 |
| 68 | 4 | 10 | 8/6/1989 |
| 69 | 5 | 4 | 3/19/2008 |
| 70 | 3 | 8 | 11/27/1995 |
| 71 | 1 | 5 | 10/14/2003 |
| 72 | 1 | 6 | 1/15/2012 |
| 73 | 10 | 3 | 7/22/1999 |
| 74 | 1 | 6 | 12/22/2008 |
| 75 | 3 | 5 | 5/5/2007 |
| 76 | 7 | 8 | 12/5/1985 |
| 77 | 3 | 5 | 10/15/1999 |
| 78 | 6 | 5 | 9/18/1987 |
| 79 | 7 | 4 | 4/3/1992 |
| 80 | 6 | 1 | 12/22/1989 |
| 81 | 8 | 8 | 12/13/1987 |
| 82 | 7 | 9 | 9/2/1988 |
| 83 | 7 | 7 | 12/3/1995 |
| 84 | 9 | 9 | 2/25/1995 |
| 85 | 6 | 9 | 11/6/1986 |
| 86 | 4 | 5 | 9/21/1990 |
| 87 | 7 | 4 | 7/7/1989 |
| 88 | 3 | 2 | 5/17/1990 |
| 89 | 9 | 5 | 9/14/1997 |
| 90 | 2 | 10 | 9/4/2012 |
| 91 | 7 | 3 | 9/17/1985 |
| 92 | 7 | 1 | 11/22/2013 |
| 93 | 9 | 7 | 10/3/1993 |
| 94 | 1 | 9 | 11/25/1996 |
| 95 | 2 | 10 | 5/25/1998 |
| 96 | 2 | 3 | 6/24/1988 |
| 97 | 8 | 7 | 4/1/2014 |
| 98 | 1 | 7 | 1/19/1988 |
| 99 | 4 | 5 | 3/23/2005 |
| 100 | 3 | 10 | 1/27/2011 |

# Works For

Works For(Work\_ID, Staff\_ID, Law\_ID, sDate, eDate, Salary, Hours)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Work\_ID | Staff\_ID | Law\_ID | sDate | eDate | Salary | Hours |
| 1 | 8 | 4 | 8/6/1983 | 10/9/1989 | $43167 | 25 |
| 2 | 9 | 7 | 8/20/1983 | 12/16/2002 | $57386 | 40 |
| 3 | 5 | 8 | 11/13/1998 | 4/8/2009 | $53335 | 40 |
| 4 | 6 | 6 | 2/30/1998 | 7/9/2001 | $46298 | 30 |
| 5 | 1 | 4 | 3/7/2008 | NULL | $39215 | 25 |
| 6 | 4 | 6 | 11/30/2005 | NULL | $32640 | 30 |
| 7 | 7 | 7 | 5/8/1987 | 4/6/1991 | $50943 | 40 |
| 8 | 2 | 3 | 9/14/2000 | 11/20/2003 | $53384 | 25 |
| 9 | 1 | 10 | 3/3/1985 | NULL | $30966 | 40 |
| 10 | 7 | 2 | 8/15/1982 | 11/24/2007 | $52231 | 20 |
| 11 | 4 | 3 | 6/23/1992 | 12/25/2004 | $41163 | 25 |
| 12 | 3 | 8 | 7/28/2001 | NULL | $57903 | 40 |
| 13 | 1 | 1 | 2/5/1988 | 8/19/1992 | $32784 | 20 |
| 14 | 7 | 10 | 11/25/2005 | 5/2/2009 | $32739 | 40 |
| 15 | 2 | 4 | 10/17/1999 | 11/4/2004 | $37595 | 25 |
| 16 | 6 | 7 | 2/21/2000 | 2/3/2003 | $59928 | 40 |
| 17 | 6 | 1 | 12/25/2008 | NULL | $42702 | 20 |
| 18 | 5 | 7 | 11/25/1993 | 4/15/1998 | $59556 | 40 |
| 19 | 8 | 3 | 9/22/2002 | NULL | $43569 | 25 |
| 20 | 7 | 7 | 3/10/1981 | 5/16/2007 | $31520 | 40 |
| 21 | 6 | 2 | 10/22/1998 | 7/31/2013 | $39502 | 20 |
| 22 | 7 | 9 | 4/3/1994 | 11/17/2008 | $51457 | 40 |
| 23 | 10 | 8 | 11/3/1991 | 8/10/2007 | $44870 | 40 |
| 24 | 4 | 10 | 6/19/1980 | 11/22/1990 | $38845 | 40 |
| 25 | 8 | 3 | 7/16/1989 | 6/22/1995 | $35372 | 25 |
| 26 | 5 | 1 | 4/9/2006 | 7/26/2008 | $53691 | 20 |
| 27 | 6 | 3 | 4/1/1981 | 4/7/1993 | $31461 | 25 |
| 28 | 3 | 4 | 1/3/1990 | 10/13/1998 | $56989 | 25 |
| 29 | 6 | 8 | 9/1/2001 | NULL | $32100 | 40 |
| 30 | 5 | 6 | 12/1/1992 | 5/5/2005 | $46101 | 30 |
| 31 | 8 | 10 | 1/1/2002 | NULL | $45524 | 40 |
| 32 | 5 | 3 | 1/3/2006 | 9/5/2009 | $44259 | 25 |
| 33 | 5 | 3 | 11/28/1999 | 6/19/2003 | $56955 | 25 |
| 34 | 4 | 9 | 12/20/1998 | 3/5/2006 | $46970 | 40 |
| 35 | 1 | 10 | 3/12/1992 | 7/21/2009 | $43280 | 40 |
| 36 | 8 | 8 | 10/5/2003 | NULL | $54825 | 40 |
| 37 | 9 | 4 | 10/28/1989 | 11/25/2007 | $42363 | 25 |
| 38 | 7 | 7 | 9/28/2007 | NULL | $44839 | 40 |
| 39 | 9 | 2 | 3/14/2000 | 4/16/2005 | $44735 | 20 |
| 40 | 7 | 3 | 6/21/1992 | 4/6/1998 | $33782 | 25 |
| 41 | 9 | 10 | 5/30/2008 | 4/15/2011 | $37378 | 40 |
| 42 | 9 | 4 | 2/31/1981 | 7/4/1992 | $36255 | 25 |
| 43 | 5 | 2 | 10/16/2002 | 3/7/2004 | $38875 | 20 |
| 44 | 4 | 10 | 8/22/1992 | 6/10/2003 | $33791 | 40 |
| 45 | 2 | 5 | 6/8/2006 | 8/15/2007 | $44779 | 30 |
| 46 | 5 | 8 | 6/21/2005 | 10/18/2005 | $42472 | 40 |
| 47 | 10 | 9 | 12/19/1986 | 10/4/1994 | $56628 | 40 |
| 48 | 3 | 5 | 4/19/1992 | 4/27/1998 | $49242 | 30 |
| 49 | 1 | 6 | 4/20/1991 | 13/3/2007 | $46158 | 30 |
| 50 | 7 | 1 | 1/8/2007 | 4/26/2012 | $54820 | 20 |
| 51 | 9 | 4 | 5/23/2003 | NULL | $45321 | 25 |
| 52 | 10 | 7 | 12/21/2005 | NULL | $44731 | 40 |
| 53 | 3 | 2 | 3/4/1992 | 6/8/1997 | $47735 | 20 |
| 54 | 7 | 1 | 12/7/1995 | 8/23/2006 | $47529 | 20 |
| 55 | 7 | 7 | 9/11/1985 | 3/17/2013 | $57871 | 40 |
| 56 | 5 | 4 | 3/4/1986 | 9/23/2010 | $52195 | 25 |
| 57 | 10 | 3 | 3/19/1981 | 12/2/1987 | $31591 | 25 |
| 58 | 4 | 1 | 11/29/2005 | 12/3/2009 | $56795 | 20 |
| 59 | 7 | 7 | 4/4/2003 | 7/5/2003 | $45305 | 40 |
| 60 | 8 | 2 | 2/5/1983 | 5/7/1987 | $34344 | 20 |
| 61 | 6 | 6 | 5/30/1990 | 5/11/2000 | $40191 | 30 |
| 62 | 4 | 6 | 5/19/1989 | 5/6/1996 | $51100 | 30 |
| 63 | 6 | 5 | 7/2/2006 | NULL | $57159 | 30 |
| 64 | 7 | 8 | 8/6/1995 | 7/11/1999 | $51115 | 40 |
| 65 | 3 | 7 | 4/18/1987 | 7/7/2002 | $39970 | 40 |
| 66 | 10 | 6 | 9/16/1988 | 8/7/1997 | $57170 | 30 |
| 67 | 2 | 7 | 1/3/1999 | 11/20/2006 | $47293 | 40 |
| 68 | 3 | 10 | 5/6/1998 | 6/19/2001 | $36682 | 40 |
| 69 | 8 | 4 | 6/19/2006 | NULL | $46183 | 25 |
| 70 | 1 | 8 | 5/27/1993 | 9/5/2008 | $59211 | 40 |
| 71 | 10 | 5 | 1/14/1991 | NULL | $58329 | 30 |
| 72 | 4 | 6 | 10/15/1985 | 9/27/2006 | $32112 | 30 |
| 73 | 7 | 3 | 9/22/2005 | 8/27/2006 | $33367 | 25 |
| 74 | 1 | 6 | 12/22/1985 | 12/15/2011 | $30194 | 30 |
| 75 | 7 | 5 | 5/5/1980 | 2/24/1992 | $58301 | 30 |
| 76 | 3 | 8 | 7/5/1995 | 7/21/2003 | $40463 | 40 |
| 77 | 7 | 5 | 3/15/1999 | 14/8/2011 | $36770 | 30 |
| 78 | 2 | 5 | 3/18/1980 | 12/30/1986 | $38821 | 30 |
| 79 | 9 | 4 | 2/3/1981 | 10/17/1986 | $56320 | 25 |
| 80 | 8 | 1 | 5/22/1983 | 4/11/1999 | $31756 | 20 |
| 81 | 10 | 8 | 3/13/2005 | 12/30/2005 | $59579 | 40 |
| 82 | 3 | 9 | 4/2/2005 | 11/7/2007 | $44389 | 40 |
| 83 | 1 | 7 | 5/3/1987 | 12/6/1988 | $31439 | 40 |
| 84 | 3 | 9 | 11/25/1984 | 5/6/1996 | $43512 | 40 |
| 85 | 4 | 9 | 2/6/2003 | NULL | $44893 | 40 |
| 86 | 8 | 5 | 6/21/1984 | 10/7/2011 | $54289 | 30 |
| 87 | 6 | 4 | 5/7/1998 | 6/31/2003 | $47734 | 25 |
| 88 | 10 | 2 | 6/17/1993 | NULL | $33754 | 20 |
| 89 | 3 | 5 | 7/14/2004 | 6/14/2007 | $47913 | 30 |
| 90 | 3 | 10 | 10/4/1987 | 1/10/1988 | $39480 | 40 |
| 91 | 9 | 3 | 1/17/2003 | 4/18/2013 | $52997 | 25 |
| 92 | 10 | 1 | 12/22/1989 | 11/18/1992 | $47317 | 20 |
| 93 | 8 | 7 | 9/3/1991 | 12/28/1999 | $35921 | 40 |
| 94 | 4 | 9 | 12/25/1997 | 5/26/1999 | $54504 | 40 |
| 95 | 7 | 10 | 2/25/1995 | 11/31/2003 | $38877 | 40 |
| 96 | 2 | 3 | 4/24/1992 | 12/11/1992 | $59434 | 25 |
| 97 | 3 | 7 | 12/1/2000 | 4/19/2001 | $45799 | 40 |
| 98 | 10 | 7 | 10/19/1998 | 10/19/2013 | $38939 | 40 |
| 99 | 4 | 5 | 3/23/2008 | 2/19/2013 | $33601 | 30 |
| 100 | 2 | 10 | 4/25/1993 | NULL | $35002 | 25 |

# Counsels

Counsels(Counsels\_ID, Law\_ID, Client\_ID, SDate, EDate, Hours, Fees)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Counsels\_ID | Law\_ID | Client\_ID | sDate | eDate | Hours | Fees |
| 1 | 4 | 10 | 8/6/1983 | 9/8/1983 | 13 | $150/hour |
| 2 | 7 | 6 | 8/20/1983 | 9/22/1983 | 16 | $150/hour |
| 3 | 8 | 1 | 11/13/1998 | 12/15/1998 | 27 | $150/hour |
| 4 | 6 | 5 | 2/30/1998 | 3/32/1998 | 25 | $150/hour |
| 5 | 4 | 9 | 3/7/2008 | 4/9/2008 | 23 | $150/hour |
| 6 | 6 | 8 | 11/30/2005 | 12/32/2005 | 25 | $150/hour |
| 7 | 7 | 2 | 5/8/1987 | 6/10/1987 | 16 | $150/hour |
| 8 | 3 | 8 | 9/14/2000 | 10/16/2000 | 22 | $150/hour |
| 9 | 10 | 3 | 3/3/1985 | 4/5/1985 | 19 | $150/hour |
| 10 | 2 | 8 | 8/15/1982 | 9/17/1982 | 11 | $150/hour |
| 11 | 3 | 3 | 6/23/1992 | 7/25/1992 | 12 | $150/hour |
| 12 | 8 | 3 | 7/28/2001 | 8/30/2001 | 17 | $150/hour |
| 13 | 1 | 7 | 2/5/1988 | 3/7/1988 | 20 | $150/hour |
| 14 | 10 | 2 | 11/25/2005 | 12/27/2005 | 29 | $150/hour |
| 15 | 4 | 1 | 10/17/1999 | 11/19/1999 | 13 | $150/hour |
| 16 | 7 | 7 | 2/21/2000 | 3/23/2000 | 16 | $150/hour |
| 17 | 1 | 2 | 12/25/2008 | 1/27/2009 | 10 | $150/hour |
| 18 | 7 | 6 | 11/25/1993 | 12/27/1993 | 16 | $150/hour |
| 19 | 3 | 10 | 9/22/2002 | 10/24/2002 | 22 | $150/hour |
| 20 | 7 | 5 | 3/10/1981 | 4/12/1981 | 26 | $150/hour |
| 21 | 2 | 10 | 10/22/1998 | 11/24/1998 | 21 | $150/hour |
| 22 | 9 | 1 | 4/3/1994 | 5/5/1994 | 18 | $150/hour |
| 23 | 8 | 10 | 11/3/1991 | 12/5/1991 | 17 | $150/hour |
| 24 | 10 | 2 | 6/19/1980 | 7/21/1980 | 19 | $150/hour |
| 25 | 3 | 8 | 7/16/1989 | 8/18/1989 | 12 | $150/hour |
| 26 | 1 | 8 | 4/9/2006 | 5/11/2006 | 20 | $150/hour |
| 27 | 3 | 2 | 4/1/1981 | 5/3/1981 | 12 | $150/hour |
| 28 | 4 | 2 | 1/3/1990 | 2/5/1990 | 13 | $150/hour |
| 29 | 8 | 6 | 9/1/2001 | 10/3/2001 | 17 | $150/hour |
| 30 | 6 | 10 | 12/1/1992 | 1/3/1993 | 25 | $150/hour |
| 31 | 10 | 8 | 1/1/2002 | 2/3/2002 | 19 | $150/hour |
| 32 | 3 | 8 | 1/3/2006 | 2/5/2006 | 12 | $150/hour |
| 33 | 3 | 7 | 11/28/1999 | 12/30/1999 | 12 | $150/hour |
| 34 | 9 | 8 | 12/20/1998 | 1/22/1999 | 28 | $150/hour |
| 35 | 10 | 4 | 3/12/1992 | 4/14/1992 | 19 | $150/hour |
| 36 | 8 | 7 | 10/5/2003 | 11/7/2003 | 17 | $150/hour |
| 37 | 4 | 6 | 10/28/1989 | 11/30/1989 | 23 | $150/hour |
| 38 | 7 | 7 | 9/28/2007 | 10/30/2007 | 26 | $150/hour |
| 39 | 2 | 4 | 3/14/2000 | 4/16/2000 | 21 | $150/hour |
| 40 | 3 | 10 | 6/21/1992 | 7/23/1992 | 12 | $150/hour |
| 41 | 10 | 5 | 5/30/2008 | 6/32/2008 | 19 | $150/hour |
| 42 | 4 | 9 | 2/31/1981 | 3/33/1981 | 23 | $150/hour |
| 43 | 2 | 2 | 10/16/2002 | 11/18/2002 | 11 | $150/hour |
| 44 | 10 | 3 | 8/22/1992 | 9/24/1992 | 29 | $150/hour |
| 45 | 5 | 10 | 6/8/2006 | 7/10/2006 | 14 | $150/hour |
| 46 | 8 | 4 | 6/21/2005 | 7/23/2005 | 27 | $150/hour |
| 47 | 9 | 10 | 12/19/1986 | 1/21/1987 | 28 | $150/hour |
| 48 | 5 | 1 | 4/19/1992 | 5/21/1992 | 14 | $150/hour |
| 49 | 6 | 9 | 4/20/1991 | 5/22/1991 | 25 | $150/hour |
| 50 | 1 | 9 | 1/8/2007 | 2/10/2007 | 20 | $150/hour |
| 51 | 4 | 6 | 5/23/2003 | 6/25/2003 | 23 | $150/hour |
| 52 | 7 | 1 | 12/21/2005 | 1/23/2006 | 16 | $150/hour |
| 53 | 2 | 10 | 3/4/1992 | 4/6/1992 | 21 | $150/hour |
| 54 | 1 | 7 | 12/7/1995 | 1/9/1996 | 10 | $150/hour |
| 55 | 7 | 4 | 9/11/1985 | 10/13/1985 | 26 | $150/hour |
| 56 | 4 | 9 | 3/4/1986 | 4/6/1986 | 23 | $150/hour |
| 57 | 3 | 6 | 3/19/1981 | 4/21/1981 | 12 | $150/hour |
| 58 | 1 | 7 | 11/29/2005 | 12/31/2005 | 20 | $150/hour |
| 59 | 7 | 2 | 4/4/2003 | 5/6/2003 | 26 | $150/hour |
| 60 | 2 | 2 | 2/5/1983 | 3/7/1983 | 11 | $150/hour |
| 61 | 6 | 6 | 5/30/1990 | 6/32/1990 | 15 | $150/hour |
| 62 | 6 | 10 | 5/19/1989 | 6/21/1989 | 15 | $150/hour |
| 63 | 5 | 9 | 7/2/2006 | 8/4/2006 | 14 | $150/hour |
| 64 | 8 | 5 | 8/6/1995 | 9/8/1995 | 17 | $150/hour |
| 65 | 7 | 9 | 4/18/1987 | 5/20/1987 | 26 | $150/hour |
| 66 | 6 | 2 | 9/16/1988 | 10/18/1988 | 15 | $150/hour |
| 67 | 7 | 1 | 1/3/1999 | 2/5/1999 | 16 | $150/hour |
| 68 | 10 | 4 | 5/6/1998 | 6/8/1998 | 19 | $150/hour |
| 69 | 4 | 1 | 6/19/2006 | 7/21/2006 | 23 | $150/hour |
| 70 | 8 | 5 | 5/27/1993 | 6/29/1993 | 27 | $150/hour |
| 71 | 5 | 5 | 1/14/1991 | 2/16/1991 | 14 | $150/hour |
| 72 | 6 | 5 | 10/15/1985 | 11/17/1985 | 25 | $150/hour |
| 73 | 3 | 5 | 9/22/2005 | 10/24/2005 | 12 | $150/hour |
| 74 | 6 | 8 | 12/22/1985 | 11/24/1986 | 15 | $150/hour |
| 75 | 5 | 7 | 5/5/1980 | 6/7/1980 | 24 | $150/hour |
| 76 | 8 | 4 | 7/5/1995 | 8/7/1995 | 17 | $150/hour |
| 77 | 5 | 2 | 3/15/1999 | 4/17/1999 | 24 | $150/hour |
| 78 | 5 | 8 | 3/18/1980 | 4/20/1980 | 14 | $150/hour |
| 79 | 4 | 6 | 2/3/1981 | 3/5/1981 | 13 | $150/hour |
| 80 | 1 | 10 | 5/22/1983 | 6/24/1983 | 20 | $150/hour |
| 81 | 8 | 7 | 3/13/2005 | 4/15/2005 | 17 | $150/hour |
| 82 | 9 | 3 | 4/2/2005 | 5/4/2005 | 18 | $150/hour |
| 83 | 7 | 2 | 5/3/1987 | 6/5/1987 | 26 | $150/hour |
| 84 | 9 | 8 | 11/25/1984 | 12/27/1984 | 28 | $150/hour |
| 85 | 9 | 9 | 2/6/2003 | 3/8/2003 | 18 | $150/hour |
| 86 | 5 | 6 | 6/21/1984 | 7/23/1984 | 14 | $150/hour |
| 87 | 4 | 8 | 5/7/1998 | 6/9/1998 | 13 | $150/hour |
| 88 | 2 | 5 | 6/17/1993 | 7/19/1993 | 21 | $150/hour |
| 89 | 5 | 2 | 7/14/2004 | 8/16/2004 | 24 | $150/hour |
| 90 | 10 | 9 | 10/4/1987 | 11/6/1987 | 29 | $150/hour |
| 91 | 3 | 6 | 1/17/2003 | 2/19/2003 | 22 | $150/hour |
| 92 | 1 | 10 | 12/22/1989 | 1/24/1990 | 10 | $150/hour |
| 93 | 7 | 8 | 9/3/1991 | 10/5/1991 | 26 | $150/hour |
| 94 | 9 | 6 | 12/25/1997 | 1/27/1998 | 18 | $150/hour |
| 95 | 10 | 4 | 2/25/1995 | 3/27/1995 | 29 | $150/hour |
| 96 | 3 | 9 | 4/24/1992 | 5/26/1992 | 22 | $150/hour |
| 97 | 7 | 9 | 12/1/2000 | 13/3/2000 | 16 | $150/hour |
| 98 | 7 | 4 | 10/19/1998 | 11/21/1998 | 16 | $150/hour |
| 99 | 5 | 2 | 3/23/2008 | 4/25/2008 | 24 | $150/hour |
| 100 | 9 | 4 | 3/27/1999 | 4/29/1999 | 25 | $150/hour |

# Litigates

Litigates(Lit\_ID, AdLaw\_ID, Case\_ID, SDate, EDate, Results)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Lit\_ID | AdLaw\_ID | Case\_ID | sDate | eDate | Results |
| 1 | 2 | 4 | 8/6/1983 | 8/9/1983 | Land Rights Violated |
| 2 | 2 | 7 | 8/20/1983 | 8/23/1983 | Land Rights Violated |
| 3 | 6 | 8 | 11/13/1998 | 11/16/1998 | Land Rights Violated |
| 4 | 6 | 6 | 2/30/1998 | 1/3/1998 | Rights Awarded to Adverse Party |
| 5 | 5 | 4 | 3/7/2008 | 3/10/2008 | Rights Awarded to Adverse Party |
| 6 | 8 | 6 | 11/30/2005 | 12/3/2005 | Client must pay $2426 in fines |
| 7 | 7 | 7 | 5/8/1987 | 5/11/1987 | Client must pay $2211 in fines |
| 8 | 6 | 3 | 9/14/2000 | 9/17/2000 | Rights Awarded to Adverse Party |
| 9 | 7 | 10 | 3/3/1985 | 3/6/1985 | Client must pay $1862 in fines |
| 10 | 10 | 2 | 8/15/1982 | 8/18/1982 | Rights Awarded to Adverse Party |
| 11 | 4 | 3 | 6/23/1992 | 6/26/1992 | Received $23929 Settlement |
| 12 | 8 | 8 | 7/28/2001 | 7/31/2001 | Rights Awarded to Adverse Party |
| 13 | 5 | 1 | 2/5/1988 | 2/8/1988 | Rights Awarded to Adverse Party |
| 14 | 6 | 10 | 11/25/2005 | 11/28/2005 | Client must pay $2373 in fines |
| 15 | 3 | 4 | 10/17/1999 | 10/20/1999 | Received $14421 Settlement |
| 16 | 6 | 7 | 2/21/2000 | 2/24/2000 | Land Rights Violated |
| 17 | 5 | 1 | 12/25/2008 | 12/28/2008 | Rights Awarded to Adverse Party |
| 18 | 8 | 7 | 11/25/1993 | 11/28/1993 | Land Rights Violated |
| 19 | 5 | 3 | 9/22/2002 | 9/25/2002 | Rights Awarded to Adverse Party |
| 20 | 5 | 7 | 3/10/1981 | 3/13/1981 | Land Rights Violated |
| 21 | 4 | 2 | 10/22/1998 | 10/25/1998 | Client must pay $2084 in fines |
| 22 | 1 | 9 | 4/3/1994 | 4/6/1994 | Client must pay $1505 in fines |
| 23 | 8 | 8 | 11/3/1991 | 11/6/1991 | Client must pay $2313 in fines |
| 24 | 9 | 10 | 6/19/1980 | 6/22/1980 | Client must pay $2895 in fines |
| 25 | 7 | 3 | 7/16/1989 | 7/19/1989 | Client must pay $1814 in fines |
| 26 | 9 | 1 | 4/9/2006 | 4/12/2006 | Client must pay $1364 in fines |
| 27 | 9 | 3 | 4/1/1981 | 4/4/1981 | Rights Awarded to Adverse Party |
| 28 | 5 | 4 | 1/3/1990 | 1/6/1990 | Land Rights Violated |
| 29 | 4 | 8 | 9/1/2001 | 9/4/2001 | Land Rights Violated |
| 30 | 2 | 6 | 12/1/1992 | 12/4/1992 | Rights Awarded to Adverse Party |
| 31 | 5 | 10 | 1/1/2002 | 1/4/2002 | Rights Awarded to Adverse Party |
| 32 | 10 | 3 | 1/3/2006 | 1/6/2006 | Client must pay $1012 in fines |
| 33 | 3 | 3 | 11/28/1999 | 11/31/1999 | Land Rights Violated |
| 34 | 1 | 9 | 12/20/1998 | 12/23/1998 | Land Rights Violated |
| 35 | 7 | 10 | 3/12/1992 | 3/15/1992 | Land Rights Violated |
| 36 | 9 | 8 | 10/5/2003 | 10/8/2003 | Land Rights Violated |
| 37 | 10 | 4 | 10/28/1989 | 10/31/1989 | Land Rights Violated |
| 38 | 3 | 7 | 9/28/2007 | 9/31/2007 | Received $10756 Settlement |
| 39 | 7 | 2 | 3/14/2000 | 3/17/2000 | Client must pay $2865 in fines |
| 40 | 7 | 3 | 6/21/1992 | 6/24/1992 | Client must pay $1619 in fines |
| 41 | 5 | 10 | 5/30/2008 | 6/4/2008 | Client must pay $1031 in fines |
| 42 | 10 | 4 | 2/31/1981 | 3/6/1981 | Land Rights Violated |
| 43 | 6 | 2 | 10/16/2002 | 10/19/2002 | Land Rights Violated |
| 44 | 1 | 10 | 8/22/1992 | 8/25/1992 | Rights Awarded to Adverse Party |
| 45 | 5 | 5 | 6/8/2006 | 6/11/2006 | Rights Awarded to Adverse Party |
| 46 | 9 | 8 | 6/21/2005 | 6/24/2005 | Received $26965 Settlement |
| 47 | 8 | 9 | 12/19/1986 | 12/22/1986 | Client must pay $2528 in fines |
| 48 | 2 | 5 | 4/19/1992 | 4/22/1992 | Client must pay $1829 in fines |
| 49 | 8 | 6 | 4/20/1991 | 4/23/1991 | Received $19503 Settlement |
| 50 | 3 | 1 | 1/8/2007 | 1/11/2007 | Received $13368 Settlement |
| 51 | 8 | 4 | 5/23/2003 | 5/26/2003 | Rights Awarded to Adverse Party |
| 52 | 3 | 7 | 12/21/2005 | 12/24/2005 | Received $10723 Settlement |
| 53 | 3 | 2 | 3/4/1992 | 3/7/1992 | Rights Awarded to Adverse Party |
| 54 | 7 | 1 | 12/7/1995 | 12/10/1995 | Land Rights Violated |
| 55 | 2 | 7 | 9/11/1985 | 9/14/1985 | Client must pay $2841 in fines |
| 56 | 1 | 4 | 3/4/1986 | 3/7/1986 | Land Rights Violated |
| 57 | 7 | 3 | 3/19/1981 | 3/22/1981 | Rights Awarded to Adverse Party |
| 58 | 2 | 1 | 11/29/2005 | 11/32/2005 | Land Rights Violated |
| 59 | 6 | 7 | 4/4/2003 | 4/7/2003 | Land Rights Violated |
| 60 | 10 | 4 | 2/5/1983 | 2/8/1983 | Rights Awarded to Adverse Party |

# Court Appearance

Court Appearance(CA\_ID, Case\_ID, Client\_ID, Law\_ID, AdLaw\_ID, Date, Time, Results)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| CA\_ID | Case\_ID | Client\_ID | Law\_ID | AdLaw\_ID | Date | Results |
| 1 | 6 | 5 | 2 | 7 | 8/9/1983 8:00:00 | Found Not Guilty |
| 2 | 10 | 10 | 6 | 2 | 6/22/1980 1:00:00 | Acquitted |
| 3 | 7 | 1 | 6 | 9 | 10/26/1997 8:00:00 | Found Not Guilty |
| 4 | 3 | 10 | 5 | 8 | 3/10/2008 11:00:00 | Acquitted |
| 5 | 2 | 2 | 8 | 10 | 1/3/1995 5:00:00 | Guilty |
| 6 | 8 | 8 | 7 | 3 | 12/5/1994 10:00:00 | Found Not Guilty |
| 7 | 9 | 8 | 6 | 1 | 3/6/1985 8:00:00 | Guilty |
| 8 | 6 | 2 | 7 | 3 | 8/4/2007 7:00:00 | Found Not Guilty |
| 9 | 8 | 2 | 10 | 4 | 7/17/1984 4:00:00 | Post Trial |
| 10 | 5 | 6 | 4 | 8 | 2/8/1988 11:00:00 | Acquitted |
| 11 | 2 | 10 | 8 | 6 | 10/3/2004 12:00:00 | Found Not Guilty |
| 12 | 9 | 8 | 5 | 10 | 9/30/2005 9:00:00 | Found Not Guilty |
| 13 | 6 | 8 | 6 | 3 | 12/28/2008 11:00:00 | Guilty |
| 14 | 10 | 7 | 3 | 3 | 8/24/1983 10:00:00 | Acquitted |
| 15 | 8 | 8 | 6 | 9 | 3/4/2000 2:00:00 | Acquitted |
| 16 | 6 | 4 | 5 | 10 | 10/25/1998 4:00:00 | Guilty |
| 17 | 4 | 7 | 8 | 8 | 9/22/2007 10:00:00 | Guilty |
| 18 | 9 | 6 | 5 | 4 | 2/29/1987 4:00:00 | Acquitted |
| 19 | 9 | 7 | 5 | 7 | 7/19/1989 4:00:00 | Found Not Guilty |
| 20 | 4 | 4 | 4 | 2 | 3/19/2006 3:00:00 | Guilty |
| 21 | 2 | 10 | 1 | 3 | 8/5/2006 3:00:00 | Acquitted |
| 22 | 9 | 5 | 8 | 10 | 9/4/2001 12:00:00 | Found Not Guilty |
| 23 | 10 | 9 | 9 | 4 | 3/8/2005 1:00:00 | Guilty |
| 24 | 7 | 2 | 7 | 2 | 9/5/1981 5:00:00 | Found Not Guilty |
| 25 | 5 | 3 | 9 | 10 | 11/31/1999 12:00:00 | Found Not Guilty |
| 26 | 4 | 10 | 9 | 5 | 4/8/2004 11:00:00 | Post Trial |
| 27 | 4 | 4 | 5 | 8 | 12/19/2008 3:00:00 | Acquitted |
| 28 | 4 | 10 | 4 | 9 | 10/31/1989 9:00:00 | Acquitted |
| 29 | 9 | 1 | 2 | 5 | 2/30/1990 2:00:00 | Guilty |
| 30 | 7 | 9 | 5 | 6 | 10/23/1995 12:00:00 | Found Not Guilty |
| 31 | 1 | 9 | 10 | 1 | 5/9/2008 2:00:00 | Post Trial |
| 32 | 5 | 6 | 3 | 4 | 10/2/1998 12:00:00 | Found Not Guilty |
| 33 | 9 | 1 | 1 | 7 | 10/6/1983 5:00:00 | Found Not Guilty |
| 34 | 9 | 10 | 7 | 2 | 6/11/2006 6:00:00 | Acquitted |
| 35 | 9 | 7 | 9 | 1 | 11/25/1997 9:00:00 | Guilty |
| 36 | 10 | 4 | 10 | 7 | 5/16/2004 6:00:00 | Found Not Guilty |
| 37 | 8 | 9 | 3 | 4 | 4/23/1991 1:00:00 | Post Trial |
| 38 | 8 | 6 | 7 | 3 | 5/19/1992 10:00:00 | Guilty |
| 39 | 7 | 7 | 7 | 1 | 1/23/1987 2:00:00 | Post Trial |
| 40 | 5 | 2 | 5 | 7 | 3/7/1992 12:00:00 | Acquitted |
| 41 | 4 | 2 | 10 | 5 | 12/18/2003 9:00:00 | Found Not Guilty |
| 42 | 1 | 6 | 6 | 4 | 2/3/1981 5:00:00 | Acquitted |
| 43 | 4 | 10 | 1 | 4 | 3/22/1981 11:00:00 | Found Not Guilty |
| 44 | 1 | 9 | 5 | 4 | 12/18/2007 4:00:00 | Found Not Guilty |
| 45 | 10 | 5 | 9 | 9 | 12/11/2003 5:00:00 | Post Trial |
| 46 | 3 | 9 | 8 | 7 | 5/7/1990 5:00:00 | Guilty |
| 47 | 6 | 2 | 2 | 1 | 12/19/1991 2:00:00 | Acquitted |
| 48 | 5 | 1 | 8 | 5 | 3/6/1989 2:00:00 | Found Not Guilty |
| 49 | 1 | 4 | 3 | 9 | 4/21/1987 9:00:00 | Post Trial |
| 50 | 6 | 1 | 8 | 9 | 4/9/1984 10:00:00 | Found Not Guilty |
| 51 | 10 | 5 | 3 | 9 | 9/9/1998 8:00:00 | Found Not Guilty |
| 52 | 5 | 5 | 3 | 10 | 6/22/2006 5:00:00 | Acquitted |
| 53 | 7 | 5 | 7 | 8 | 5/29/1984 1:00:00 | Guilty |
| 54 | 10 | 5 | 2 | 8 | 10/23/1988 1:00:00 | Found Not Guilty |
| 55 | 3 | 8 | 1 | 7 | 9/25/2005 12:00:00 | Found Not Guilty |
| 56 | 3 | 7 | 7 | 5 | 3/17/2000 6:00:00 | Post Trial |
| 57 | 5 | 4 | 2 | 4 | 5/19/1997 12:00:00 | Guilty |
| 58 | 8 | 2 | 6 | 1 | 3/18/1999 3:00:00 | Found Not Guilty |
| 59 | 8 | 8 | 10 | 4 | 7/20/2000 4:00:00 | Acquitted |
| 60 | 4 | 10 | 2 | 1 | 4/25/2000 12:00:00 | Found Not Guilty |

**Sample Queries**

1. **Select staff that has set an appointment for each client.**
2. **Select all staff that started before October 17, 2001 and that works for John Law.**
3. **Select all appointments between James Public and John Law.**
4. **Select staff with highest salary.**
5. **Select clients with the at least one court appearance and one appointment.**
6. **Select all appointments at CSUB between October and November 2004.**
7. **Select all clients who have never appeared in court.**
8. **Select all clients that have been counseled for a total of more than 40 hours.**
9. **List the cases litigated by each Adverse Lawyer and the lawyer’s first and last name.**
10. **Select all clients that are counseled by John Law and have more than one case.**

**Sample Query Expressions**

**1. Select staff that has set an appointment for each client.**

Relational Algebra

a         c

allClientApt < ----- πaptID(σa.clientID = c.clientID(Appointment ⨉ Client))

               se                       st

πst.fName, st.lName((Sets ÷ allClientApt) ⨝ se.staffID = st.staffID Staff)

Tuple Relational Calculus

{ t.fName, t.lName | (∀c) ( c⋲Client → (∃s⋲Staff)(∃st⋲Sets)(∃a⋲Appointment)

    ( a.clientID = c.clientID ⋀ st.aptID = a.aptID ⋀

      st.staffID = s.staffID ⋀ c.clientID = t.clientID ) ) }

Domain Relational Calculus

{ <f, l> | (∀c)( Client(c, \_, \_, \_, \_, \_, \_) → (∃a)(∃s)(∃st)( Staff( s, f, l, \_ ) ^

Appointment( a, \_, \_, c, \_, \_, \_ ) ^

Sets( st, s, a, \_ ) ) ) }

**2. Select all staff that started before October 17, 2001 and that works for John Law.**

Relational Algebra

         w                             s            l

πs.fName, s.lName (WorksFor ⨝ w.staffID = s.staffID ^ w.lawID = l.lawID ^ (Staff ⨉ Lawyer))

l.fName = “John” ^ l.lName = “Law” ^

w.sDate < “10/17/2001”

Tuple Relational Calculus

{t.fName, t.lName | t ⋲ Staff ⋀ (∃w ⋲WorksFor)(∃s ⋲ Staff)(∃l⋲Lawyer)

    (w.staffID = t.staffID ⋀ w.lawID = l.lawID ⋀ l.fname = “John” ⋀

l.lName = “Law” ⋀ w.sDate < “10/17/2001”)}

Domain Relational Calculus

{<g, h> | (∃x)(∃y)(Staff(x, g, h, \_, \_) ⋀ Lawyer(y, ‘John’, ‘Law’, \_) ⋀

WorksFor(\_, x, y, <10/17/2001’, \_, \_)}

**3. Select all appointments between James Public and John Law.**

Relational Algebra

a                               c              l

πa.\* (Appointments ⨝ a.clientID = c.clientID ^ a.lawID = l.lawID ^ (Client ⨉ Lawyer))

l.fName = “John” ^ l.lName = “Law” ^

c.fName = “James” ^ c.lName = “Public”

Tuple Relational Calculus

{ t.\* | t ⋲ Appointment ⋀ (∃c)(∃l)(Client(c) ⋀ Lawyer(l)

    t.clientID = c.clientID ⋀ t.lawID = l.lawID ⋀ l.FName = ‘John’ ⋀ l.LName = ‘Law’ ⋀

    c.FName = ‘James’ ⋀ c.LName = ‘Public’)}

Domain Relational Calculus

{<x,y,z> | (∃c)(∃l)(Client(c, \_, \_, \_, \_, \_, \_) ⋀ Lawyer(l, \_, \_, \_, ) ⋀

    Appointment(\_, l, \_, c, x, y, z))}

**4. Select staff with highest salary.**

Relational Algebra

             mSal              s

πs.fName, s.lName((StaffID 𝕵 MAXSalaryWorksFor) \*Staff)

Tuple Calculus

{ t.fName, t.lName | t ⋲ Staff ⋀

(∀x)( ( x ⋲ WorksFor )→ (∃r ⋲ Staff)(∃w ⋲ WorksFor)( r.staffID = w.staffID ⋀

w.salary >= x.salary ) ) }

Domain Calculus

{ <f, l> | (∀x)( WorksFor( \_ , \_ , \_ , \_ , \_ , x , \_ ) → (∃r)( ( Staff( r , f , l , \_ ) ⋀

WorksFor ( \_ , =r , \_ , \_ , \_ , >=x , \_ ) ) ) }

**5. Select clients with at least one court appearance and one appointment.**

Relational Algebra

πfName, lName ( Client \* (σ clientID CourtAppearance ⨝ ca.clientID = ap.clientID Appointment ) )

Tuple Relational Calculus

{ t.fName, t.lName | t ⋲ Client ⋀ ( ∃r ⋲ CourtAppearance )( ∃s ⋲ Appointment )

( r.clientID = t.clientID ⋀ s.clientID = t.clientID ) }

Domain Relational Calculus

{<f, l> | (∃c)( CourtAppearance( \_ , \_ , \_ , \_ , \_ , \_ , \_ ) ⋀ Client( c , f , l , \_ , \_ , \_ , \_ ) ⋀

Appointment( a, \_, \_, =c, \_, \_, \_ ) ) }

**6. Select all appointments at CSUB between October and November 2004.**

Relational Algebra

a

πa.Date, a.Location, a.Description (σ a.location = “CSUB” ^ (Appointment))

a.Date <12/2004 ^ a.Date > 9/2004

Tuple Relational Calculus

{a.Date, a.Location, a.Description | Appointment(a) ⋀ a.location = "CSUB" ⋀

a.Date < 12/2004 ⋀ a.Date > 9/2004 ) }

Domain Relational Calculus

{<d, l, de> | Appointment( \_, \_, \_, \_, d, l, de) }

**7. Select all clients who have never appeared in court.**

Relational Algebra

πfName, lName ( Client - (πClient\_ID (CourtAppearance) )

Tuple Relational Calculus

{ t.fName, t.lName | t ⋲ Client ⋀ (∀ca ⋲ CourtAppearance)( t.clientID != ca.clientID ) }

Domain Relational Calculus

{ <f, l> | (∀ca)(∃c)( CourtAppearance( \_ , \_ , ca , \_ , \_ , \_ , \_ ) ⋀

Client( c , f , l , \_ , \_ , \_ , \_ ) ⋀ ca != c ) }

**8. Select all clients that have been counseled for a total of more than 40 hours.**

Relational Algebra

              co c

πc.fname, c.lname(Counsels ⨝ co.clientID = c.clientID ^ hours > 40 Client)

Tuple Relational Calculus

{c.fName, c.lName | c ⋲ Client ⋀ (∃co ⋲ Counsels)( co.clientID = c.clientID ⋀ co.hours > 40 )

Domain Relational Calculus

{<f, l> | (∃i)( Client( i , f , l , \_ , \_ , \_ , \_ ) ⋀ Counsels( \_ , \_ , i , \_ , \_ ,> ‘40’ , \_ ) ) }

**9. List the cases litigated by each Adverse Lawyer and the lawyer’s first and last name.**

Relational Algebra

π c.\*, al.fName, al.lName (Case ⨝ c.caseID = l.caseID (AdverseLawyer \* Litigates))

Tuple Relational Calculus

{ c.\*, a.fName, a.lName | c ⋲ Case ⋀ a ⋲ AdverseLawyer ⋀

(∃l ⋲ Litigates)( l.AdLawID = a.AdLawID ⋀ ad.L ⋀ l.caseID = c.caseID ) }

Domain Relational Calculus

{ <c, d, s, e, v, ca, l, n, fn, ln > | (∃ci)(∃ld)( Case( ci , d , s , e , v , ca , l , n) ⋀

AdverseLawyer( ld , fn , ln , \_ , \_ , \_ ) ⋀

Litigates( \_ , ld , ci , \_ , \_ , \_ ) ⋀ ci = c}

**10. Select all clients that are counseled by John Law and have more than one case.**

Relational Algebra

                  c1                       c2

mCa < ----- πc1.clientID (Case ⨝ c1.clientID = c2.clientID ^ Case)

c1.caseID != c2.caseID

c                             l

𝞹cl.fName (Counsels ⨝ c.clientID = mCa.clientID ^ (mCa ⨉ Lawyer)) ⨝mCa.clientID = cl.clientID Client

cl.lName                 c.lawID = l.lawID ^

l.fName = ‘John’ ^

l.lName = ‘Law’

Tuple Relational Calculus

{ c.fName, c.lName | c ⋲ Client ⋀(∃d ⋲ Case) (∃e ⋲ Case)(d.caseID != e.caseID ⋀

d.clientID = e.clientID ⋀ ( (∃f ⋲ Counsels)(∃g ⋲ Lawyer)(f.clientID = d.clientID ⋀ f.lawID = g.lawID ⋀ g.fName = ‘John’ ⋀g.lName = ‘Law’⋀ f.clientID = c.clientID)))}

Domain Relational Calculus

{<f, l> | (∃x)(∃y)(∃q)(∃s) Case(q, x, \_, \_, \_, \_, \_, \_) ⋀ Case(s, x, \_, \_, \_, \_, \_, \_) ⋀

    Counsels(\_, y, x, \_, \_, \_, \_) ⋀ Lawyer(\_, ‘John’, ‘Law’, \_) ⋀ Client(x, f, l, \_, \_, \_, \_) ⋀ q!=s}

Phase III

Normalization of Relations

Normalization is the process of sanitizing relation schemas in the database design. This process aims to reduce the number of spurious (unnecessary) tuples created on join, update and insertion operations. Normalization also ensures that no extra data will be lost on update and deletion operations. Invalid data generated due to NULL values is also eliminated by the normalization process, and wasted storage space is also reduced or eliminated by performing normalization.

**First Normal Form –** defined as removing any multiple, composite or complex valued attributes from relations. This is important as there are no DMBS that support these types of attributes in a database implementation.

**Second Normal Form –** defined as a relation in which every non-prime attribute is fully-functionally dependent on the primary key of that relation. This means that every tuple selected by a primary key will resolve to a unique set of values.

**Third Normal Form –** defined as a relation satisfying the conditions of the second normal form, and having no non-prime attributes transitively dependent on the primary key. This means that all attributes that are not members of a candidate/primary key are not determined by an attribute which is determined by the primary key.

**Boyce-Codd Normal Form –** defined as a relation that meets the conditions of the third normal form, and satisfies the condition that all functional dependencies in a relation have a superkey on the determining side of the dependency, i.e. W 🡪 S and W is a superkey in relation R.

**SQL\*PLUS -** SQL\*PLUS, formerly known as UFI and Advanced UFI, is a general purpose utility to run SQL commands and perform database administration. It is used with Oracle Database Management Systems and supports SQL, pl/sql, and other script files. SQL\*PLUS can also create and manage schema tables and indexes as well as query and manipulate data.

**SCHEMA OBJECTS IN ORACLE**

Schema objects are logical data storage structures that do not have a one-to-one correspondence to physical files on disk that stores their information. The database stores the schema object in the table space of the database.

**Tables**

Tables are sets of data elements that are organized using a model of vertical columns and horizontal rows. They store data in a RDBMS and are equivalent to relations in a relational model. Tables are also associated with some metadata such as constraints on the table or on the values within particular columns. There are very few differences between tables and relations such as a relation is an unordered set of tuples and a table is ordered.

The following partial example syntax can be used to create a table in Oracle:

CREATE TABLE *tableName*

(

*columnName1 datatype1 defaultExpression1 constraintsOnColumn1,*

*columnName2 datatype2 defaultExpression3 constraintsOnColumn2,*

*… … … …*

*columnNameN datatypeN defaultExpressionN constraintsOnColumnN,*

*tableConstraints*

);

Tables In This Database:

nrbm\_Lawyer

nrbm\_Client

nrbm\_Appointment

nrbm\_Case

nrbm\_Staff

nrbm\_Phone

nrbm\_AdverseLawyer

nrbm\_Sets

nrbm\_WorksFor

nrbm\_Counsels

nrbm\_Litigates

nrbm\_CourtAppearance

**View**

A view is the result set of a stored query on the data. Views are used to limit the result set to a certain subset of data, join and simplify multiple tables into a single virtual table, act as aggregated tables, hide the complexity of data, and they take very little space to store.

The following partial example syntax can be used to create a view in Oracle:

CREATE OR REPLACE VIEW *viewName* AS *selectStatement*;

**Indexes**

A database index is a data structure that can improve the speed of the data retrieval operations. They are used to locate data without having to search row by row. They give the exact location of the corresponding data. Indexes can be unique or contain duplicate values and they can either be clustered or non-clustered.

The following partial example syntax can be used to create an index in Oracle:

CREATE INDEX *indexName* ON *tableName* TABLESPACE *tablespace*;

Indexes In This Database:

None

**Sequences**

A Sequence is used to make a sequence of numbers in oracle and can be used in multiple tables. An oracle sequence is also an object used to generate incrementing or decrementing numbers.

The following partial example syntax can be used to create a sequence in Oracle:

CREATE SEQUENCE *seqName*

MINVALUE *minimumValue*

MAXVALUE *maximumValue*

START WITH *initialValue*

INCREMENT BY *incrementValue*

CACHE *numberOfValuesToCache;*

Lawyer (Law\_ID, FName, LName, Position)

Client (Client\_ID, FName, LName, BusName, Email, Address, DOB)

Appointment (Apt\_ID, Law\_ID, Case\_ID, Client\_ID, Date, Location, Description)

Case (Case\_ID, Client\_ID, SDate, EDate, Evidence, Category, Litigation, Notes)

Staff (Staff\_ID, FName, LName, Title)

Phone (Phone\_ID, Client\_ID, Home, Cell, Business)

Adverse Lawyer (AdLaw\_ID, FName, LName, Address, Email, PhoneNumber)

Sets (Set\_ID, Staff\_ID, Apt\_ID, Date\_Set)

Works For (Work\_ID, Staff\_ID, Law\_ID, sDate, eDate, Salary, Hours)

Counsels (Counsels\_ID, Law\_ID, Client\_ID, SDate, EDate, Hours, Fees)

Litigates (Lit\_ID, AdLaw\_ID, Case\_ID, SDate, EDate, Results)

Court Appearance (CA\_ID, Case\_ID, Client\_ID, Law\_ID, AdLaw\_ID, Date, Time, Results)