**Normalization Steps**

**\*NOTE – PK is highlighted in YELLOW and FK is highlighted in BLUE**

**1NF**

**Client Table:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **ClientID** | First Name | Last Name | ContactInformation | **AppointmentID** | AppointmentType | DateTime |
| 101 | Alice | Johnson | [alice@gmail.com](mailto:alice@gmail.com) | 301 | Regular Checkup | 2024-03-23 10:00 |
| 102 | Bob | Smith | [bob@gmail.com](mailto:bob@gmail.com) | 302 | Emergency | 2024-03-24 14:15 |
| 103 | Emily | Brown | [emily@gmail.com](mailto:emily@gmail.com) | 303 | Regular Checkup | 2024-04-25 15:00 |
| 104 | John | Doe | [john@yahoo.com](mailto:john@yahoo.com) | 304 | Braces Adjustment | 2024-10-28 11:00 |
| 105 | Sarah | Lee | [sarah@hotmail.com](mailto:sarah@hotmail.com) | 305 | Consultation | 2024-11-27 15:00 |

**Dentist Table:**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **DentistID** | Name | Specialization | ContactInformation | **VisitID** | DateTime | Diagnosis | TreatmentDetails | **AppointmentID** |
| 201 | Dr.Davis | Orthodontics | [dr.davis@hotmail.com](mailto:dr.davis@hotmail.com) | 401 | 2024-03-23 10:00 | Teeth cleaning | Checkup | 301 |
| 202 | Dr.Martinez | Pediatric Dentistry | [dr.martinez@yahoo.com](mailto:dr.martinez@yahoo.com) | 402 | 2024-03-24 14:15 | Toothache | Extraction | 302 |
| 203 | Dr.Lee | Endodontics | [dr.lee@gmail.com](mailto:dr.lee@gmail.com) | 403 | 2024-04-25 15:00 | Braces adjustment | Tightening | 303 |
| 204 | Dr.Wilson | Periodontics | [dr.wilson@hotmail.com](mailto:dr.wilson@hotmail.com) | 404 | 2024-03-26 11:00 | Checkup | Checkup | 304 |
| 205 | Dr.Rodriguez | Oral Surgery | [dr.rodriguez@yahoo.com](mailto:dr.rodriguez@yahoo.com) | 405 | 2024-03-27 15:00 | Wisdom tooth removal | Surgery | 305 |

**ClientPayment Table:**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CPaymentID** | **InsuranceID** | Installment  Amount | Installment Deductible | IsBasisFor Claim | **VisitID** | **PaymentID** | Amount | Date | PaymentMethod | NumOfInstallments | ClientID |
| 501 | 801 | 50.00 | 25.00 | Yes | 401 | 701 | 150.00 | 2024-03-26 11:00 | Credit Card | 1 | 101 |
| 502 | 802 | 75.00 | 30.00 | No | 402 | 702 | 300.00 | 2024-03-27 9:30 | Check | 1 | 102 |
| 503 | 803 | 100.00 | 40.00 | Yes | 403 | 703 | 200.00 | 2024-03-27 15:45 | Check | 2 | 103 |
| 504 | 804 | 80.00 | 35.00 | No | 404 | 704 | 250.00 | 2024-03-28 12:00 | Credit Card | 1 | 104 |
| 505 | 805 | 60.00 | 20.00 | Yes | 405 | 705 | 180.00 | 2024-03-29 10:30 | Cash | 1 | 105 |

**Insurance Company Payment Table:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **InsuranceID** | **ClientID** | isPaying | Name | ContactInformation | **VisitID** |
| 801 | 101 | Yes | Safety Insurance | [info@safetyfirstinsurance.com](mailto:info@safetyfirstinsurance.com) | 401 |
| 802 | 102 | Yes | Liberty Mutual | [contact@libertymutual.com](mailto:contact@libertymutual.com) | 402 |
| 803 | 103 | Yes | Acme Insurance Co | [support@acmeinsuranceco.com](mailto:support@acmeinsuranceco.com) | 403 |
| 804 | 104 | Yes | Guardian Insurance | [help@guardianinsurance.com](mailto:help@guardianinsurance.com) | 404 |
| 805 | 105 | Yes | Pioneer Insurance | [info@pioneerinsurance.com](mailto:info@pioneerinsurance.com) | 405 |

**2NF**

**Client Table:**

|  |  |  |  |
| --- | --- | --- | --- |
| **ClientID** | First Name | Last Name | ContactInformation |
| 101 | Alice | Johnson | [alice@gmail.com](mailto:alice@gmail.com) |
| 102 | Bob | Smith | [bob@gmail.com](mailto:bob@gmail.com) |
| 103 | Emily | Brown | [emily@gmail.com](mailto:emily@gmail.com) |
| 104 | John | Doe | [john@yahoo.com](mailto:john@yahoo.com) |
| 105 | Sarah | Lee | [sarah@hotmiail.com](mailto:sarah@hotmiail.com) |

**Appointments Table:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **AppointmentID** | AppointmentType | DateTime | **ClientID** | **DentistID** |
| 301 | Regular Checkup | 2024-03-23 10:00 | 101 | 201 |
| 302 | Emergency | 2024-03-24 14:15 | 102 | 202 |
| 303 | Regular Checkup | 2024-04-25 15:00 | 104 | 203 |
| 304 | Braces Adjustment | 2024-10-28 11:00 | 105 | 204 |
| 305 | Consultation | 2024-11-27 15:00 | 103 | 205 |

**Dentist Table:**

|  |  |  |  |
| --- | --- | --- | --- |
| **DentistID** | Name | Specialization | ContactInformation |
| 201 | Dr.Davis | Orthodontics | [dr.davis@hotmail.com](mailto:dr.davis@hotmail.com) |
| 202 | Dr.Martinez | Pediatric Dentistry | [dr.martinez@yahoo.com](mailto:dr.martinez@yahoo.com) |
| 203 | Dr.Lee | Endodontics | [dr.lee@gmail.com](mailto:dr.lee@gmail.com) |
| 204 | Dr.Wilson | Periodontics | [dr.wilson@hotmail.com](mailto:dr.wilson@hotmail.com) |
| 205 | Dr.Rodriguez | Oral Surgery | [dr.rodriguez@yahoo.com](mailto:dr.rodriguez@yahoo.com) |

**Visit Table:**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **VisitID** | DateTime | Diagnosis | TreatmentDetails | **AppointmentID** | **ClientID** | **DentistID** | Bill  Amount | Bill Balance |
| 401 | 2024-03-23 10:00 | Teeth cleaning | Checkup | 301 | 101 | 201 | 200.00 | 0.00 |
| 402 | 2024-03-24 14:15 | Toothache | Extraction | 302 | 102 | 202 | 350.00 | 150.00 |
| 403 | 2024-04-25 15:00 | Braces adjustment | Tightening | 303 | 104 | 203 | 150.00 | 50.00 |
| 404 | 2024-03-26 11:00 | Checkup | Checkup | 304 | 105 | 204 | 100.00 | 0.00 |
| 405 | 2024-03-27 15:00 | Wisdom tooth removal | Surgery | 305 | 103 | 205 | 120.00 | 0.00 |

**ClientPayment Table:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **CPaymentID** | **InsuranceID** | Installment  Amount | Installment Deductible | IsBasisFor Claim | **VisitID** |
| 501 | 801 | 50.00 | 25.00 | Yes | 401 |
| 502 | 802 | 75.00 | 30.00 | No | 402 |
| 503 | 803 | 100.00 | 40.00 | Yes | 403 |
| 504 | 804 | 80.00 | 35.00 | No | 404 |
| 505 | 805 | 60.00 | 20.00 | Yes | 405 |

**Payment Table:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **PaymentID** | Amount | Date | **CPaymentID** | PaymentMethod | NumOfInstallments |
| 701 | 150.00 | 2024-03-26 11:00 | 501 | Credit Card | 1 |
| 702 | 300.00 | 2024-03-27 9:30 | 502 | Check | 1 |
| 703 | 200.00 | 2024-03-27 15:45 | 503 | Check | 2 |
| 704 | 250.00 | 2024-03-28 12:00 | 504 | Credit Card | 1 |
| 705 | 180.00 | 2024-03-29 10:30 | 505 | Cash | 1 |

**Insurance Company Payment Table:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **InsuranceID** | **ClientID** | isPaying | Name | ContactInformation | **VisitID** |
| 801 | 101 | Yes | Safety Insurance | [info@safetyfirstinsurance.com](mailto:info@safetyfirstinsurance.com) | 401 |
| 802 | 102 | Yes | Liberty Mutual | [contact@libertymutual.com](mailto:contact@libertymutual.com) | 402 |
| 803 | 103 | Yes | Acme Insurance Co | [support@acmeinsuranceco.com](mailto:support@acmeinsuranceco.com) | 403 |
| 804 | 104 | Yes | Guardian Insurance | [help@guardianinsurance.com](mailto:help@guardianinsurance.com) | 404 |
| 805 | 105 | Yes | Pioneer Insurance | [info@pioneerinsurance.com](mailto:info@pioneerinsurance.com) | 405 |

**3NF**

**Client Table:**

|  |  |  |  |
| --- | --- | --- | --- |
| **ClientID** | First Name | Last Name | ContactInformation |
| 101 | Alice | Johnson | [alice@gmail.com](mailto:alice@gmail.com) |
| 102 | Bob | Smith | [bob@gmail.com](mailto:bob@gmail.com) |
| 103 | Emily | Brown | [emily@gmail.com](mailto:emily@gmail.com) |
| 104 | John | Doe | [john@yahoo.com](mailto:john@yahoo.com) |
| 105 | Sarah | Lee | [sarah@hotmiail.com](mailto:sarah@hotmiail.com) |

**Dentist Table:**

|  |  |  |  |
| --- | --- | --- | --- |
| **DentistID** | Name | Specialization | ContactInformation |
| 201 | Dr.Davis | Orthodontics | [dr.davis@hotmail.com](mailto:dr.davis@hotmail.com) |
| 202 | Dr.Martinez | Pediatric Dentistry | [dr.martinez@yahoo.com](mailto:dr.martinez@yahoo.com) |
| 203 | Dr.Lee | Endodontics | [dr.lee@gmail.com](mailto:dr.lee@gmail.com) |
| 204 | Dr.Wilson | Periodontics | [dr.wilson@hotmail.com](mailto:dr.wilson@hotmail.com) |
| 205 | Dr.Rodriguez | Oral Surgery | [dr.rodriguez@yahoo.com](mailto:dr.rodriguez@yahoo.com) |

**Appointments Table:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **AppointmentID** | AppointmentType | DateTime | **ClientID** | **DentistID** |
| 301 | Regular Checkup | 2024-03-23 10:00 | 101 | 201 |
| 302 | Emergency | 2024-03-24 14:15 | 102 | 202 |
| 303 | Regular Checkup | 2024-04-25 15:00 | 104 | 203 |
| 304 | Braces Adjustment | 2024-10-28 11:00 | 105 | 204 |
| 305 | Consultation | 2024-11-27 15:00 | 103 | 205 |

**Visit Table:**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **VisitID** | DateTime | Diagnosis | TreatmentDetails | **AppointmentID** | **ClientID** | **DentistID** | Bill  Amount | Bill Balance |
| 401 | 2024-03-23 10:00 | Teeth cleaning | Checkup | 301 | 101 | 201 | 200.00 | 0.00 |
| 402 | 2024-03-24 14:15 | Toothache | Extraction | 302 | 102 | 202 | 350.00 | 150.00 |
| 403 | 2024-04-25 15:00 | Braces adjustment | Tightening | 303 | 104 | 203 | 150.00 | 50.00 |
| 404 | 2024-03-26 11:00 | Checkup | Checkup | 304 | 105 | 204 | 100.00 | 0.00 |
| 405 | 2024-03-27 15:00 | Wisdom tooth removal | Surgery | 305 | 103 | 205 | 120.00 | 0.00 |

**ClientPayment Table:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **CPaymentID** | **InsuranceID** | Installment  Amount | Installment Deductible | IsBasisFor Claim | **VisitID** |  |
| 501 | 801 | 50.00 | 25.00 | Yes | 401 |  |
| 502 | 802 | 75.00 | 30.00 | No | 402 |  |
| 503 | 803 | 100.00 | 40.00 | Yes | 403 |  |
| 504 | 804 | 80.00 | 35.00 | No | 404 |  |
| 505 | 805 | 60.00 | 20.00 | Yes | 405 |  |

**Payment Table:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **PaymentID** | Amount | Date | **CPaymentID** | PaymentMethod | NumOfInstallments |
| 701 | 150.00 | 2024-03-26 11:00 | 501 | Credit Card | 1 |
| 702 | 300.00 | 2024-03-27 9:30 | 502 | Check | 1 |
| 703 | 200.00 | 2024-03-27 15:45 | 503 | Check | 2 |
| 704 | 250.00 | 2024-03-28 12:00 | 504 | Credit Card | 1 |
| 705 | 180.00 | 2024-03-29 10:30 | 505 | Cash | 1 |

**Insurance Company Payment Table:**

|  |  |  |
| --- | --- | --- |
| **InsuranceID** | **ClientID** | isPaying |
| 801 | 101 | Yes |
| 802 | 102 | Yes |
| 803 | 103 | Yes |
| 804 | 104 | Yes |
| 805 | 105 | Yes |

**Insurance Company Table:**

|  |  |  |  |
| --- | --- | --- | --- |
| **InsuranceCompanyID** | Name | ContactInformation | **VisitID** |
| 601 | Safety Insurance | [info@safetyfirstinsurance.com](mailto:info@safetyfirstinsurance.com) | 401 |
| 602 | Liberty Mutual | [contact@libertymutual.com](mailto:contact@libertymutual.com) | 402 |
| 603 | Acme Insurance Co | [support@acmeinsuranceco.com](mailto:support@acmeinsuranceco.com) | 403 |
| 604 | Guardian Insurance | [help@guardianinsurance.com](mailto:help@guardianinsurance.com) | 404 |
| 605 | Pioneer Insurance | [info@pioneerinsurance.com](mailto:info@pioneerinsurance.com) | 405 |