**Insurance Brokers Database Management System**

SNPJ Associates is an insurance broker company which acts as a third party for people who need vehicle insurance. The broker maintains details of the insurance providers and the different kinds of policies they provide. The customer application details require the customer to fill in his details, vehicle, and payment details. The broker inputs the customer information and recommends an appropriate policy. The customer agrees to the offered policy and then a bill gets generated by the insurance provider. All tasks are done by the broker on a unit level.

**Background, Business Case**

Pain Points:

1. There is an information drain while logging in the requisite details of the customer and their vehicle information
2. The process is manual and there is a huge margin of human error
3. There is a lot of time wasted while dealing with one specific customer
4. Since there is no system, the broker cannot always recommend the right insurance policy

Solutions:

1. The Vehicle table keeps track of the coverage information and who the policy belongs to. It acts like a bridge between the insurance provider and the driver.
2. There is a Policy table that contains the general information about available policies. This can be used to make automated recommendations to the drivers.
3. The Driver table holds all the driver information in one place and ensures atomicity.
4. PaymentDetail and Bill tables ensure that all the information about payment processing is held with the broker

Current Process:

1. The driver approaches the broker to submit an application and request for an insurance plan.
2. Broker agent logs in customer details into the system
3. The broker pursues different policies to recommend the right suitable plan.
4. The insurance company relays the payment details according to policy chosen by customer

**AS-IS Process**

Chart, diagram

Description automatically generated

Enhancers/enablers: IT System

New Process:

1. The broker will now have a database setup
2. Each applicant’s details will be stored
3. Everything related to policy - dates, premium, coverage; all tables will be present
4. The applicant will follow the instructions on the portal and that will suggest some best plans to them
5. User will be notified of the acceptance/rejection of the file on the portal itself
6. Insurance companies will generate a policy and will send it to broker as well for the purpose of record keeping.

**TO-BE Process**

Chart, diagram

Description automatically generated

Benefits:

1. There will be less scope for logging errors
2. There is a huge reduction in time taken to process each driver.
3. Number of drivers tended to will increase in turn increasing the profits
4. Grievance redressal

**Detailed Description, Use Case**

**Business Rules:**

1. Document details such as License details, vehicle details etc will be verified first before submitting it.
2. Multiple plans will be suggested, the user will have the right to accept or reject the proposed plan.
3. Once Broker checks are done, one advance check will be performed by the Insurance company before generating the policy.

**User Requirements:**

1. Ease of procuring an insurance policy
2. Faster application and approval times
3. Payment with less hassle
4. Timely renewal notifications
5. Access to information about insurance procedures

**Enhanced Entity Relationship Diagram**

Graphical user interface, application

Description automatically generated

**Data Dictionary**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Bill – Contains all the policy billing information** | | | | |
| **Attribute** | **Constraint (Required/ Optional)** | **Data Type** | **Description** | **Examples** |
| Bill\_ID | Primary Key | Long | Auto incrementing ID of each new bill generated | 123,118,122,557,778 |
| PolicyID | Foreign Key | Long | Foreign key from Policy table | 88,42,33,35 |
| DueDate | NOT NULL | Date | Due date for the bill payment | 12/1/2021 |
| Minimum Payment | NOT NULL | Double | If its an annual policy coverage, minimum payment will be for one month. The amount is listed here in dollars. | 100, 100.173 |
| CreatedDate | NOT NULL | DateTime | Bill generation date | 10/12/2021 |
| Status | NOT NULL | Varchar (50) | Status of the bill – paid or unpaid | Paid, unpaid |
| Balance | NOT NULL | Double | Amount left to be paid after making the minimum payment in dollars | 50, 50.367 |
|  |
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| **PaymentDetail – Contains customer's payment details** | | | | |  |
| **Attribute** | **Constraint (Required/ Optional)** | **Data Type** | **Description** | **Examples** |  |
| PaymentID | Primary Key | Long | Auto incrementing unique payment id | 21, 22, 29 |  |
| Bill\_ID | Foreign Key | Long | Foreign Key from bill table | 123, 118 |  |
| PaidDate | NOT NULL | Date | Date on which payment was made | 12/1/2021 |  |
| Amount | NOT NULL | Int | Amount paid in dollars | 100, 200 |  |
| PaymentMethod | NOT NULL | varchar (100) | Payment via credit/debit cards, online banking or wallets | Paytm, online banking, credit card, debit card |  |
| PayerFirstName | NOT NULL | varchar (50) | Payer first name | Jesal, Sanjana |  |
| PayerLastName | NOT NULL | varchar (50) | Payer last name | Makwana, Argula |  |
| CardNumber | Can be NULL | varchar (50) | Credit or debit card number | 1100 2416 8859 2020 |  |
| ZipCode | Can be NULL | varchar (10) | Postal code | 06901 |  |
| CardExpiredDate | Can be NULL | Date | Card expiry date | 9/7/2021 |  |
| CardType | Can be NULL | varchar (20) | Type of card | Visa , Mastercard |  |
| BankName | Can be NULL | varchar (100) | Name of the bank | Bank of America |  |
| AccountNumber | Can be NULL | varchar (20) | Account number of the payer | 24689100 |  |
| RoutingNumber | Can be NULL | varchar (20) | Routing number of the payer's account | 218896 |  |
| CreatedDate | NOT NULL | DateTime | Date on which payment was made | 10/14/2021 |  |
| CheckNumber | Can be NULL | varchar (20) | Check number, if payment made through checks | 21465881 |  |
| CheckImage | Can be NULL |  | If paid by check, upload an image | Image of check |  |
| Comments | Can be NULL | Text | Any additional comments from the payer | Payment for June 2021' |  |
|  |  |  |  |  |  |
| **CustomerSupport – Contains customer's communication details with SNPJ Associates** | | | | |  |
| **Attribute** | **Constraint (Required/ Optional)** | **Data Type** | **Description** | **Examples** |  |
| SupportID | Primary Key | Long | Auto incrementing unique ID for each communication with the customer | 11, 12 , 13 |  |
| DriverID | Foreign Key | Long | Foreign key from the driver table | 21, 22 |  |
| Grievance | NOT NULL | Text | Customer complaints | "Cannot see policy renewed documents" |  |
| Review | NOT NULL | Text | Customer's reviews | " Best broker in town. Active customer support." |  |
| CreatedDate | NOT NULL | DateTime | Date on which grievance/reviews posted | 22-10-2021 |  |
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| **Vehicle – Contains all the vehicle information** | | | | |  |
| **Attribute** | **Constraint (Required/ Optional)** | **Data Type** | **Description** | **Examples** |  |
| VehicleID | Primary Key | Long | Unique ID of the vehicle | 9082, 9085 |  |
| Policy ID | Foreign Key | Long | Foreign key from Policy table | 88,42,33,35 |  |
| Trim | Can be NULL | Varchar | Trim level of the vehicle | X1, V3 |  |
| Color | Can be NULL | Varchar | Color of the vehicle | Red, Blue |  |
| Model | NOT NULL | Varchar | Model of the vehicle | Yukon |  |
| Make | NOT NULL | Varchar | Make of the vehicle | Ford |  |
| Mfg\_year | NOT NULL | Char | Manufacturing Year of the vehicle | 1995 |  |
| Mileage | NOT NULL | Integer | Mileage of the Year | 12000 |  |
| VINNumber | NOT NULL | Varchar | VIN Number of the Vehicle | 4Y1SL65848Z411439 |  |
| VehicleNumberPlate | NOT NULL | Varchar | Number mentioned on the number plate of the vehicle | DL 12 C AB 0496 |  |
| Vehicle RegisteredState | NOT NULL | Varchar | Registered State of the vehicle | Chicago |  |
| CreatedDate | NOT NULL | Datetime | Creation date of the vehicle | 10/25/2000 |  |
| Active | NOT NULL | Boolean | Indicates whether the vehicle is active or not | Yes, No |  |
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| **VehicleDriver – Contains all the vehicle driver's information** | | | | |  |
| **Attribute** | **Constraint (Required/ Optional)** | **Data Type** | **Description** | **Examples** |  |
| VehicleDriverID | Primary Key | long | Unique Id of the Vehicle Driver | 76 |  |
| VehicleID | Foreign Key | long | Unique ID of the Vehicle from Vehicle Table | 9082, 9085 |  |
| DriverID | NOT NULL | long | Unique ID of the Driver | 77 |  |
| IsPrimaryDriver | NOT NULL | bool | Indicates if the Driver is the Primary Driver | Yes, No |  |
| Active | NOT NULL | bool | Indicates if the driver is still associated with the vehicle | Yes, No |  |
| CreatedDate | NOT NULL | datetime | Indicates the date the driver's name was added to the vehicle | 10/25/2000 |  |
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| **VehicleCoverage – Contains all the vehicle coverage information** | | | | |  |
| **Attribute** | **Constraint (Required/ Optional)** | **Data Type** | **Description** | **Examples** |  |
| VehicleCoverageID | Primary Key | long | Unique Id of the Vehicle 's Coverage | 16763 |  |
| VehicleID | NOT NULL | long | Unique Id of the Vehicle | 9082, 9085 |  |
| CoverageID | NOT NULL | long | Coverage ID of the vehicle coverage | 99 |  |
| Active | NOT NULL | bool | Indicates if the coverage is active or not | Yes, No |  |
| CreatedDate | NOT NULL | datetime | Creation date of Coverage | 10/25/2000 |  |
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| **Policy – Contains all the Policy details** | | | | |  |
| **Attribute** | **Constraint (Required/ Optional)** | **Data Type** | **Description** | **Examples** |  |
| PolicyID | Primary Key | Long | Auto incrementing ID of each new Policy generated | 115020, 115023 |  |
| PolicyEffectiveDate | NOT NULL | Date | The Starting date of policy | 08/30/2021, 12/31/2021 |  |
| PolicyExpireDate | NOT NULL | Date | The ending date of policy | 08/29/2022, 12/30/2022 |  |
| PaymentOption | NOT NULL | varchar | Types of payment option | Credit card, debit card, internet banking |  |
| TotalAmount | NOT NULL | double | Amount to be paid | 55,201 , 23,589 |  |
| AdditionalInfo | NOT NULL | text | For internal purpose this will never display to coustomer |  |  |
| Active | NOT NULL | Boolean | Policy status; it is acitive or expired | Active, expired |  |
| CreatedDate | NOT NULL | datetime | The date and time policy created | 5/12/2021 12:30 |  |
|  |  |  |  |  |  |
| **Driver - Contains driver details** | | | | |  |
| **Attribute** | **Constraint (Required/ Optional)** | **Data Type** | **Description** | **Examples** |  |
| PolicyID | Required | long | PolicyID generated | 78274828 |  |
| FirstName | Required | varchar(50) | First Name of the driver | Shaun |  |
| LastName | Required | varchar(50) | Last name of the driver | Michael |  |
| EmailAddress | Required | varchar(100) | email address of the driver | [its\_me@gmail.com](mailto:its_me@gmail.com) |  |
| SSN | Required | varchar(12) | SSN of the driver | 832838 |  |
| Phone Number | Required | varchar(50) | Contact number of the driver | 243-231-0000 |  |
| DOB | Required | date | Date of birth | 11/2/1987 |  |
| LicenseIssueDate | Required | date | License issue date | 9/11/2008 |  |
| LicenseIssueState | Required | varchar(50) | License issue state | Connecticut |  |
| LicenseNumber | Required | varchar(20) | License Number | 28381839 |  |
| IsPrimaryPolicyHolder | Required | bool | Is the driver primary holder or dependent | Primary |  |
| RelationWithPrimaryPolicyHolder | Required | varchar(50) | If dependent, the relation with primary holder | NA, son, daughter |  |
| Gender | Optional | varchar(10) | Gender | Female,Male |  |
| MaritalStatus | Optional | varchar(20) | Marital Status | Single |  |
| CreatedDate | Required | datetime | Profile created date | 8/9/2010 |  |
| Active | Required | bool | Status of profile | Active, Inactive |  |
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| **Coverage – Contains vehicle coverage information** | | | | |  |
| **Attribute** | **Constraint (Required/ Optional)** | **Data Type** | **Description** | **Examples** |  |
| CoverageID | Primary Key | long | unique ID for different type of coverage plan | 011, 012, 013 |  |
| CoverageName | NOT NULL | long | The name of the coverage plan | liability with 40,000 |  |
| CovergaeGroup | NOT NULL | char | The name of the coverage group | MED, rental, GAP |  |
| Code | NOT NULL | varchar | Group have different option we can give code to simplify business logic | 12,013,014 |  |
| IsPolicyCovergae | NOT NULL | boolean | Is it apply only for Policy Coverage only | YES, NO |  |
| IsVehicleCovergae | NOT NULL | boolean | Is it apply only for Vehicle Coverage only | YES, NO |  |
| Description | Can be NULL | text |  |  |  |
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| **PolicyCoverage – Contains Policy Coverage information** | | | | |  |
| **Attribute** | **Constraint (Required/ Optional)** | **Data Type** | **Description** | **Examples** |  |
| PolicyCoverageID | Primary Key | long | Unique ID for every policy covergae | 12012, 12013 |  |
| PolicyID | NOT NULL | long | From the Policy table | 115020, 115023 |  |
| CoverageID | NOT NULL | long | From the Coverage table | 011, 012, 013 |  |
| Active | NOT NULL | boolean | Policy status; it is acitive or expired | Active, Expired |  |
| CreatedDate | NOT NULL | datetime | The date and time policy created | 5/12/2021 12:30 |  |
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| **Driver Address - Contains driver's address details** | | | | |  |
| **Attribute** | **Constraint (Required/ Optional)** | **Data Type** | **Description** | **Examples** |  |
| DriverID | Required | long | ID of the driver generated by the system | CU837H0 |  |
| Address | Required | varchar(100) | Street Address of the driver | 5th Ave |  |
| City | Required | varchar(50) | City | Manhattan |  |
| State | Required | varchar(50) | Stats | NY |  |
| Zipcode | Required | varchar(50) | Zipcode | 7902 |  |
| Country | Required | varchar(50) | Country | United States |  |