

**Insurance Management System**

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We have made an insurance management system to manage data of one branch of an insurance company. The branch has many Admins and each admin can have many Agents. Admin can maintain records of agents and also check premiums of every customer. So, there is one to many relationship between “Admin” and “Agent”. To link both tables Admin\_id (Primary key of “Admin”) is a foreign key in “Agent”.

There is a separate table to maintain plan details “Plan”. Plan can have Maximum Maturity Age (MMA) means at which maximum age policy should be matured/finished ;

Minimum age (Min\_age) means The minimum age of eligibility to purchase a term insurance plan and Maximum age(Max\_age) means The maximum age of eligibility to purchase a term insurance plan; range or specific values of Term and Premium Paying Term (PPT) is the total number of years for the policy\_holder to pay the premium; Minimum valid sum assured (Min\_SA); Maximum valid sum assured (Max\_SA). Sum assured is the amount of money an insurance policy guarantees to pay before any bonuses are added; Mode which it can support like Yearly, Half-yearly, Quartely, Monthly or Single-Premium.

An agent is a person who represents an insurance firm and sells insurance policies on its behalf. An agent can sell many Policies and each policy must be on a particular plan. So, One to many relationship between “Plan” and “Policy”. And one to many relationships between “Agent” and “Policy”. For these to relations in “Policy” there is foreign key Agency\_code (Primary key of “Agent” ) and foreign key Plan\_no (Primary key of “Plan”).

Policy must satisfy these constraints according to Plan details :

$MMA \geq \text{Term} + \text{Holder's Age}$

$\text{Min\_SA} \leq \text{SA} \leq \text{Max\_SA}$

$\text{Min\_age} \leq \text{Holder's Age} \leq \text{Max\_age}$

Mode of policy = Available in the mode of plan

There is First Unpaid Premium (FUP) refers to the first default in paying the premium by the

policyholder. On payment of the due premium, a receipt is issued and this receipt indicates the date of next due. For FUP calculations we have made

function "SEL".

```
1 BEGIN
2
3     DECLARE N INT;
4     DECLARE FUPD DATE;
5     DECLARE DOCD DATE;
6     DECLARE T INT;
7     SELECT MODE+0,FUP,DOC,PPT FROM Policy WHERE Policy_no =
pno INTO N,FUPD,DOCD,T;
8     IF N = 1 AND (YEAR(FUPD)-YEAR(DOCD))< T THEN
9         RETURN DATE_ADD(FUPD,INTERVAL 1 YEAR);
10    ELSEIF N = 2 AND (YEAR(FUPD)-YEAR(DOCD))< T THEN
11        RETURN DATE_ADD(FUPD,INTERVAL 6 MONTH);
12    ELSEIF N = 4 AND (YEAR(FUPD)-YEAR(DOCD))< T THEN
13        RETURN DATE_ADD(FUPD,INTERVAL 1 QUARTER);
14    ELSEIF N = 3 AND (YEAR(FUPD)-YEAR(DOCD))< T THEN
15        RETURN DATE_ADD(FUPD,INTERVAL 1 MONTH);
16    ELSE
17        RETURN NULL;
18    END IF;
19    END
```

For Commission calculations we have made function “COM”.

```
1 BEGIN
2     IF t = 1 THEN
3         RETURN pre*2/100;
4     ELSE
5         RETURN (pre*25 + pre*(t-1)*5)/100;
6     END IF;
7 END
```

For payment record details there is Payment record which is multivalued attribute of “Policy”. So, we have made one weak entity “Payment\_record” which has foreign key Policy\_no (Primary key of “Policy”). And with discriminator Date\_time there is primary key (Policy\_no,Date\_time).

There is one constraint for "Payment\_record" :

Amount >= Premium