

CS - 461

Database Systems

Assignment 1

Week 3

Draw E-R diagram for the given project.
Describe all assumptions.

Good luck!

Project One : The Global Insurance Agency

General Description

Global is an independent insurance agency that sells policies from several different companies. It has only one location and five agents, one of whom is the owner. They each have about 3000 customers. The agency sells only individual homeowner's, automobile and life insurance policies.

A basic homeowner's policy covers a client's home and its contents against fire, theft, lightning and similar dangers. The policy lists the specific dangers included and those excluded, and the client pays more for policies that are more inclusive. There is usually a deductible, a fixed amount that the client must pay before the insurance company pays.

Automobile insurance is designed to provide coverage for damage caused by use of a car. Policies provide varying limits for liability, which is damage of driver clauses, medical payments, personal injury protection, protection from uninsured motorists, collision and comprehensive coverage. Collision covers damage to the insured's own car from colliding with an object or another car, while comprehensive covers damage to the insured's car by fire, theft or other clauses not including collision. Both collision and comprehensive have associated deductibles.

There are several types of life insurance, including term, whole life, limited payment life, endowment, and combination plans.

Basic Operations

Names, addresses and telephone numbers of prospective customers are obtained from various sources. Agents contact potential clients by mail or phone and try to set up appointments. At these meetings, the agent reviews the client's present insurance coverage and tries to identify the policy or policies that will best meet the client's insurance needs. To buy insurance, the client fills out an application for coverage and the agent draws up a tentative contract furnished by the appropriate insurance company. The application is signed by both the client and the agent, and forwarded to the insurance company. The insurance company may conduct an investigation, the nature and scope of which are terminated by type of insurance, the characteristics of the policy, and the identity of the client. If the outcome of the investigation is positive, the company sends a policy to the agent, who signs it and meets with the client for his or her signature. Both the agent and the client keep copies of the contract. If the outcome is negative, the agent is informed of the problem and he or she meets with the client to discuss alternatives. The policy is in effect once the client signs it and makes the first insurance premium payment.

Every policy carries with it a schedule of premiums, which varies with the type and coverage. Each policy also provides a commission for the agency. The commission varies with the insurance company, policy type and coverage. However, a given insurance company will always pay the same commission for the same policy, regardless of the agency or the seniority of the agent. The Global Agency works on a strict commission system and does not pay a salary to any of its agents. It splits the commission received for each policy with the agent who sold it.

Once a policy has been sold, the agency submits premium bills to the client, collects payment, and sends the payment, minus its commission to the insurance company. If a client fails to pay premiums, the agent who sold the policy is informed so that he or she can contact the client. There is a short "grace period" once a payment is missed, during which coverage continues and the agent attempts to resolve the problem. If the grace period expires without payment, the policy is dropped by the insurance company. Some life insurance policies pay dividends at the end of the year. The client may choose to receive dividends in cash or to use them as credit towards premium payment.

Claims can be made on insurance policies as specified in the policy itself. Clients or their beneficiaries contact the agent to file such claims. For an automobile insurance policy, claims are

- = entities - = weak entity
- = attributes * = key
- = relations - = subtype entity

made when the car is involved in an accident, damaged or stolen. Homeowner's policy claims are made when property is damaged or lost. Life insurance claims can be made by the beneficiaries of the dead, or by the insured, if the policy has a cash value. Once the insurance company receives a claim, it assigns an adjuster who investigates the legitimacy of the claim and handles payment, if any. The agency is not involved in the following up on the claim.

Information Needs

The agency now handles all records manually, using an office staff of two clerical workers. The owners wishes to computerise all data relating to insurance policies and has hired you to design a database for this purpose. You are to design a system that can be maintained by the clerical staff and accessed by the agents. The following reports, documents and transactions will be used:

1. Application for Life Insurance: This form is filled out by the client and the agent during the initial visit. It contains: Agent name, Client name, Address, Years Living There, Phone, Date of Birth, Sex, Previous Address, Years at Previous Address, Employer Name, Employer Address, Years there, Previous Employer, Previous Employer Address, Years at previous Employment, Marital Status, Number of Children, Height, Weight, Smoker, High Risk Employment, High Risk Hobby, History of Mental Illness, History of Heart Disease, History of Cancer, Date of most Recent Physical, Physician Name, Physician Address, Physician Telephone, General Condition.

The client provides information on previous address only if he or she has been at the present address less than five years. The same rule applies to previous employment. The applications contains a few questions designed to help the insurance company assess the health of the applicant. Some of these, such as Smoker, are flags, that contain only true or false values. The form contains a printed statement verifying that all answers are complete and truthful, and agreeing that the company has the right to contact the client's physician for additional health information. The company also reserves the right to request a physical examination. The client's signature signifies agreement to these conditions.

2. Application for Automobile Insurance: This form contains: Agent Name, Client Name, Address, Phone, Liability, Medical Payments, Personal Injury, Uninsured Motorist. For each driver it lists: Lic State, Lic No, Date of Birth, Sex, Number of Points. For each car it lists: Make, Model, Style, Year, Mileage, Primary Driver, Used For Work, Collision, Comprehensive, Collision Deductible, Comprehensive Deductible.

The application lists up to four drivers to be covered by the policy and up to three cars. The coverage for liability, Medical Payments, Personal Injury and Uninsured Motorist is the same for all drivers and all cars covered by the policy, but the collision and the Comprehensive deductibles may be different for each of the three cars covered. The amount of collision and comprehensive coverage is always the actual cash value less any deductible.

3. Premium Invoice: This form contains: Insured Name, Address, Insurance company Name, Policy Number, Policy Type, Policy Coverage, Amount Due, Date Due, Agent Name. The invoice is generated by the agency, which receives the payment and sends the appropriate portion to the insurance company.

4. Monthly Activity by agent: This report is generated each month to track the sales activity of each of the agents. It contains: Agent Name, Number of First Appointments, Number of Auto Policies sold, Annual Total New Auto Premiums, Number of Homeowner's Policies sold, Annual Total New Homeowner's Premiums, Number of Life Policies Sold, Annual Total New Life Premiums.

5. Automobile Insurance Policy: Most of this document is preprinted, with the insurance company's name and address, and the terms and condition of the insurance. It contains: Policy Number, Insured Name, Insured Address, Liability Coverage, Medical Payments Coverage, Personal Injury Coverage, Uninsured Motorist Coverage, Premiums, Valid Until. For each driver it lists: Make, Model, Style, Year, Collision, Collision Deductible, Comprehensive, Comprehensive Deductible.

6. Policies by Agent <name>: This report lists all the policies, new or old, that the named agent has sold and is responsible for. It appears in order of customer's name. The items are: Customer Name, Address, Telephone. For each policy belonging to the customer, the following data appears: Insurance company, Policy Number, Insurance Type, Type of policy, Coverage, Annual Premiums, Annual Commission. At the bottom of the report, the following summary appears: Number of customers, Number of Policies, Total Annual Premiums, Total Annual Commission.

There are similar applications and policies for other types of insurance, transactions to calculate agent's commissions, to record payments, and other reports that would be useful.