

CITIZEN RECORD MANAGEMENT SYSTEM

Database Specification: Purpose, Business Problems Addressed and Business Rules

Amulya Rao Ravindra, Krishna Ravichandran, Sanjeev Kumar Sugumar,
Sneha Ravichandran, Sriram Ravindran, Vaishnavi Gadve



Database Purpose: The purpose of this database is to create a central repository to capture and maintain information about the country's citizens. It can only be accessed by the government and its agencies to maintain secrecy and confidentiality of the citizen's information, and no other authority or individual will be allowed to access this database.

Business Problems Addressed:

- The database consists of a criminal record registry that contains profiles of the suspects and those convicted of serious criminal offenses. This can be shared with Interpol to help maintain security compliance and also helps in enforcing the law.
- The database allows us to calculate the percentage of homeless people. It can be used by the housing care division of the government to provide shelters to the homeless people.
- Through its various registries, it enhances the decision-making process of the government thereby taking the country a step closer to being a utopian nation.
- It allows the government to maintain public health. By going through health records, information about communicable diseases can be found. This will help the government to bring in health plans for the general public.
- The database consists of good deeds contributed to the nation by the people, which will help the government recognize the better civilian.

Business Rules:

- Each citizen will have only one Phone Number entered.
- For the first travel of a citizen, the country of exit will not be recorded.
- A property can be owned by only one citizen.
- Joint bank accounts are not allowed for two citizens.
- For each citizen, a new utility record will be created.
- A citizen can have only one address.

Design Requirements (Credits to Professor Simon Wang):

- Use Crow's Foot Notation
- Specify the primary key fields in each table by specifying PK besides the fields.
- Draw a line between the fields of each table to show the relationships between each table. This line should be pointed directly to the fields in each table that are used to form the relationship.
- Specify which table is on the one side of the relationship by placing a one next to the field where the line starts.
- Specify which table is on the many sides of the relationship by placing a crow's feet symbol next to the field where the line ends.

Design Decisions:

| Entity name | Why Entity included | How an entity is related to other |
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| GeneralRecord | The purpose of this database is to create a central repository to capture and maintain information about the country's citizens. This entity consists of essential information of the citizen like name, address, contact details, Pan number, and passport number | As one of the core entities in the database, the GeneralRecord's primary key is NationalID, relates it to BankDetails, HealthRecord, GeneralSchoolRecord, GeneralCollegeRecord, GoodSamaritanRecord, TravelRecord, CriminalRecord, CompanyRecord, VehicleRecord, PropertyRecord, UtilityRecord, and AddressRecord, so that it is convenient to fetch all the records related to a citizen. As there are many to many relationships with these entities several associate entities are created as described for each entity. |
| HealthRecord | Since the purpose of this database is to collect all records about a citizen, this entity is included to record and track data about the citizens' health. The medical history of the citizen and their health insurance will be available in this entity. The data from this entity will help the Government to make health policies according to the current need of the citizens. | This Entity is directly connected to the General Record through the Nation ID and it has an identifying relationship |
| GeneralCompanyRecord | This tracks the details about the citizen's employment details. This includes the details about the company and the citizen's work-related details like their date of joining and salary details. | The CompanyRecord entity is directly linked with the GeneralRecord entity and also linked with CompanyID. |
| CompanyRecord | This is the child entity of the GeneralCompanyRecord. It contains the details of all the company names pertaining to the NationalIDs. | It is linked to GeneralRecord through an associate entity named GeneralCompanyRecord due to many to many relationship. |
| TravelRecord | This entity gives detail about the citizen's travel history and their travel insurance details. These details will help the government and their agencies to have a track of the citizen's entry and exit to a country. | This Entity is directly connected to the General Record through the Nation ID and it has an identifying relationship. |
| GeneralSchoolRecord | The government can use this record to make sure people who are being recruited in the positions held by the government don't fake their educational qualifications and don't forge any documents. It can be used by the government in implementing various educational plans and to ensure whether the basic qualification criteria is met. | This entity is directly linked to the General Record entity via the NationID, and it is linked to the SchoolRecord via the SchoolID. |
| SchoolRecord | This is a child entity to the GeneralSchoolRecord. It is used to capture all the different schools pertaining to a single NationID. | It is linked to the General Record through an associative entity GeneralSchoolRecord by one-to-many relationship. One SchoolID can be mapped to one or more NationIDs. |
| GeneralCollegeRecord | The government can use this record to make sure people who are being recruited in the positions held by the government don't fake their educational qualifications and don't forge any documents. It can be used by the government in implementing various educational plans | The GeneralCollegeRecord entity is linked to the general record through the NationID, and it is linked to the CollegeRecord via the CollegeID. |

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| CollegeRecord | This is a child entity to the GeneralCollegeRecord. It is used to capture all the different colleges pertaining to a single NationID. | It is linked to the General Record through an associative entity GeneralCollegeRecord by one-to-many relationship. One CollegeID can be mapped to one or more NationIDs. |
| CriminalRecord | The Criminal Record holds a person's criminal history. A criminal record can be used by potential employers in the government to assess a person's trustworthiness. This can also be used in cases of international travel to stop the convicts or law offenders from leaving the country. | The Criminal Record Entity is connected to the General record via the NationID using a one-to-many relationship. Multiple Criminal records can be traced to an individual. |
| PropertyRecord | All vital information about the legal ownership of a property is included in this record. It will help the government settle property disputes if there are any. It will also give the government a clear picture of the property tax paid by every citizen and if there are any defaulters. | The Property entity is directly related to the GeneralRecord via NationID of a citizen through a one-to-many relationship. |
| GeneralBankRecord | The financial transactions of every citizen can be monitored using their respective bank records. This will help keep a tab on all the unwarranted transactions made by a citizen which the government can then use to track down unauthorized activities. | The NationID connects this entity with the general record of the database through a one-to-many relationship. |
| BankRecord | This entity is a child entity to the General Bank Record. It is used to hold information about the multiple bank accounts a citizen has. | The BankRecord entity is connected to the General Record via an associative GeneralBankRecord entity through a one-to-many relationship. |
| UtilityRecord | This Entity stores the water, gas, and electricity monthly consumption for all the citizens. This gives the government a general idea of the consumption in a particular locality and can also be used to verify against the bills submitted by an individual as address proof. | This Record is directly connected to the General Record through the Nation Id. |
| VehicleRecord | the purpose of this entity is to keep track of the vehicles owned by an individual. Through this, the government would be able to track lost, stolen vehicles and to get a count of the number of vehicles present in a city. This can be also used by the government to keep a check on the number of vehicles owned by a person to control pollution levels. | This Entity is directly connected to the General Record through the Nation ID. |
| GoodSamaritanRecord | This is a unique entity of the database that stores the good deeds contributed by the citizens in the environment, national and international aspects. This adds value to a person when they attend government job interviews. This record could also help the government provide scholarships to individuals who have contributed a lot to the country. | This table is directly connected to the General record though the NationId. |
| AchievementRecord | This entity stores the different achievements that a person can accomplish to increase their good Samaritan value. Each time a person performs a good deed, this table lets you choose it from a list of options. | This record is connected to the Good Samaritan record. This record is indirectly connected to the general record through the Good Samaritan record. |

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