NGO MANAGEMENT SYSTEM

DBMS PROJECT

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Contents

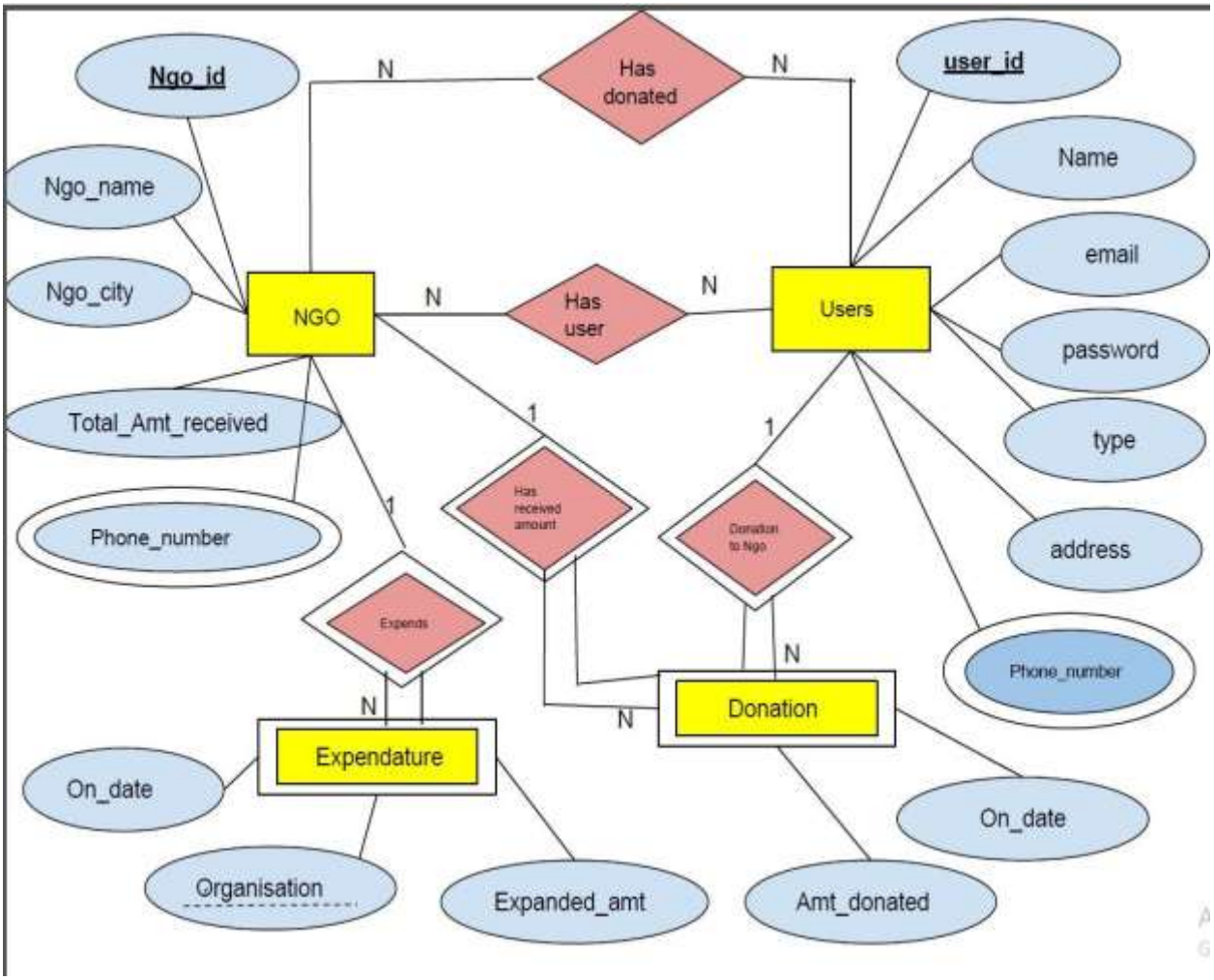
Introduction

This project was developed under the course(CO204). The main aim of the project was to implement various database concepts learned in the above-mentioned course.

Our project focuses on NGO management system. A user can register to donate to an NGO, the users will get to know about the expenditures of NGOs.
One can search how many N GOs and types of NGOs present in a particular city to be able to visit the NGO if he wishes to. This project also stores the data of a user, i.e username, password, email etc.

All the relations in the database have been normalised.

Entity Relation Diagram



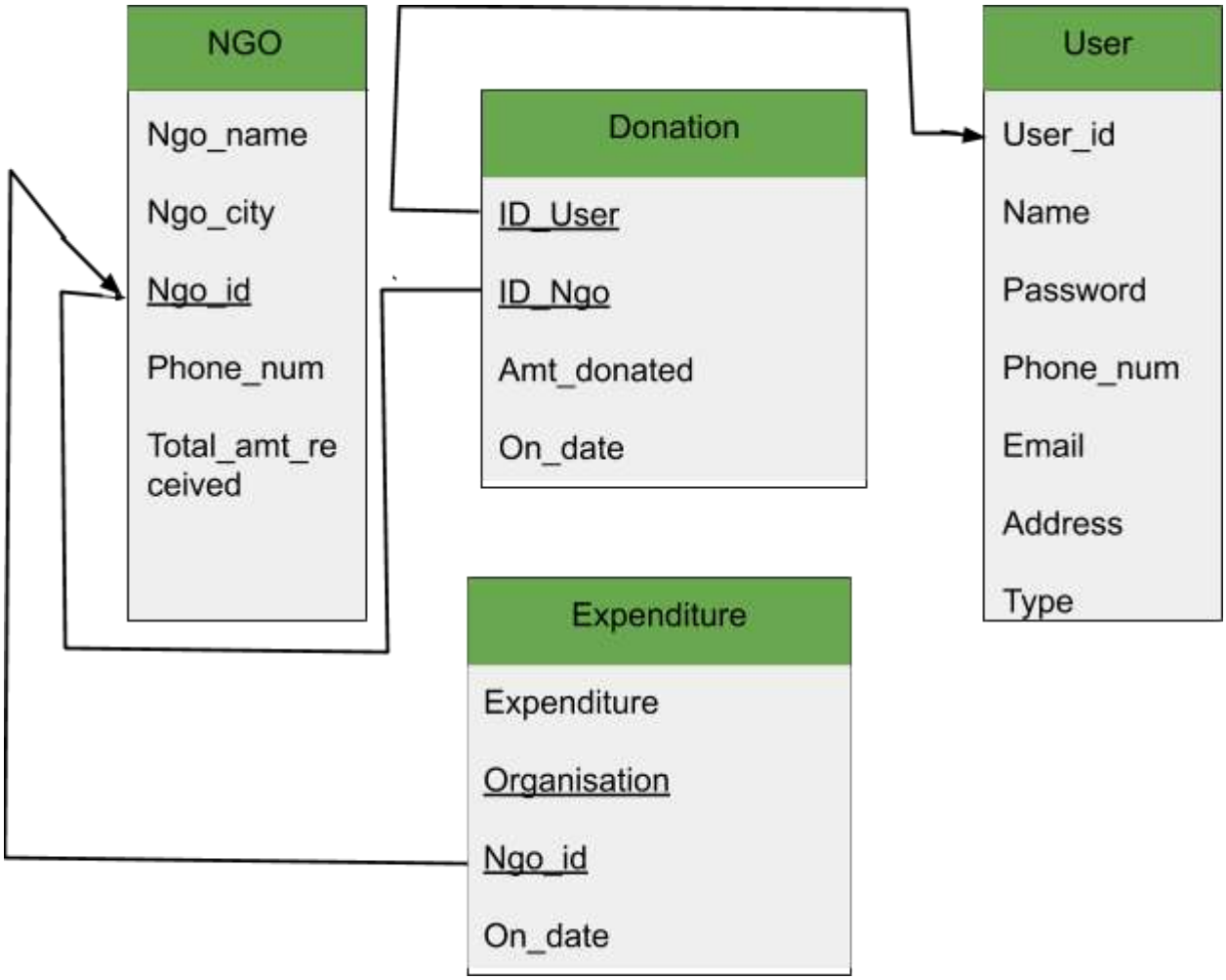
This Entity Relation diagram shows all the relations between the tables in our database

All the attributes that a particular table contains are shown here

Also, the nature of an attribute can be predicted from this diagram i.e whether it is a primary key, foreign key, partial key.

Database Schema

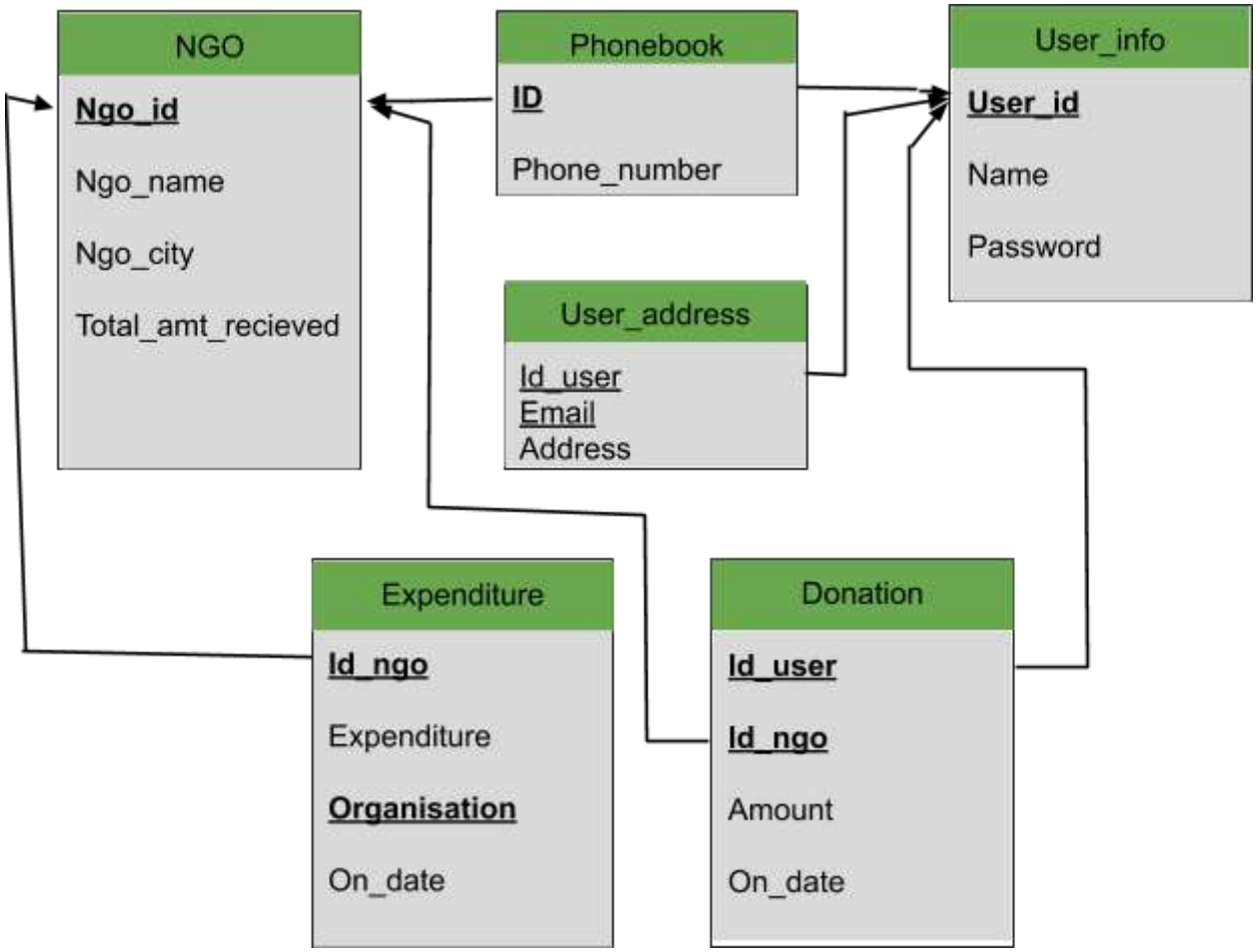
simple:-



Direct Interpretation of ER diagram without performing Normalization and optimization. This Schema shows how the tables are inter-related to each other.

Database Schema

Normalized:-



Normalized database schema to remove all types of databases errors like redundancy and dependency. Also searching and sorting becomes easier because functional dependency gets removed and the number of attributes per table reduces.

Normalisation Concepts

Table ngo(ngo_id, ngo_name, ngo_city, total_amt_received)

The table is in 1NF as there is no multivalued attribute.

The table is in 2NF as there is no partial dependencies.

The table is in 3NF as there is no transitive dependencies.

The table is in BCNF as the relation

A -> B

Is of the form where A is super key.

Example:

As in this table ngo_id is candidate key as it can uniquely identify every other attribute. Also, it is super key and prime attribute. Also since no single prime attribute can identify a non-prime attribute its in 2NF. Since no non-prime can derieve another non-prime so its in 3NF.

Table user_info(user_id, name, password)

The table is in 1NF as there is no multivalued attribute.

The table is in 2NF as there is no partial dependencies.

The table is in 3NF as there is no transitive dependencies.

The table is in BCNF as the relation

A -> B

Is of the form where A is super key.

Example:

As in this table user_id is candidate key as it can uniquely

identify every other attribute. Also, it is super key and prime attribute. Also since no single prime attribute can identify a non-prime attribute its in 2NF. Since no non-prime can derive another non-prime so its in 3NF.

Table phonebook(id,phonenumber)

The table is in 1NF as there is no multivalued attribute.

The table is in 2NF as there is no partial dependencies.

The table is in 3NF as there is no transitive dependencies.

The table is in BCNF as the relation

A -> B

Is of the form where A is super key.

Example:

As in this table id is candidate key as it can uniquely identify every other attribute. Also, it is super key and prime attribute.

Also since no single prime attribute can identify a non-prime attribute its in 2NF. Since no non-prime can derieve another non-prime so its in 3NF.

Table address(id, email,address)

The table is in 1NF as there is no multivalued attribute.

The table is in 2NF as there is no partial dependencies.

The table is in 3NF as there is no transitive dependencies.

The table is in BCNF as the relation

A -> B

Is of the form where A is super key.

Example:

As in this table, id is a candidate key as it can uniquely identify every other attribute. Also, it is a super key and prime attribute.

Also since no single prime attribute can identify a non-prime attribute its in 2NF. Since no non-prime can derive another non-prime so its in 3NF.

Table donation(id_ngo, id_user, amount, on_date)

The table is in 1NF as there is no multivalued attribute.

The table is in 2NF as there is no partial dependencies.

The table is in 3NF as there is no transitive dependencies.

The table is in BCNF as the relation

A -> B

Is of the form where A is super key.

Example:

As in this table (id_ngo,id_user) is a candidate key as it can uniquely identify every other attribute. Also, it is super key and prime attribute.

Also since no single prime attribute can identify a non-prime attribute its in 2NF. Since no non-prime can derive another non-prime so its in 3NF.

Table expenditure(id_ngo, organisation, expenditure, on_date)

The table is in 1NF as there is no multivalued attribute.

The table is in 2NF as there is no partial dependencies.

The table is in 3NF as there is no transitive dependencies.

The table is in BCNF as the relation

A -> B

Is of the form where A is super key.

Example:

As in this table (id_ngo, organisation) is a candidate key as it can uniquely identify every other attribute. Also, it is a super key and prime attribute.

Also since no single prime attribute can identify a non-prime attribute it's in 2NF. Since no non-prime can derive another non-prime so its in 3NF.

Key Constraints

USER_INFO

Field	Type	Null	Key	Default	Extra
user_id	int(11)	NO	PRI	*NULL*	auto_increment
name	varchar(100)	NO		*NULL*	
password	varchar(100)	NO		*NULL*	
type	varchar(15)	NO		*NULL*	

DONATION

Field	Type	Null	Key	Default	Extra
id_user	int(11)	NO	PRI	*NULL*	
id_ngo	varchar(5)	NO	PRI	*NULL*	
amount	int(11)	NO		*NULL*	
on_date	timestamp	NO		CURRENT_TIMESTAMP	

EXPENDITURE

Field	Type	Null	Key	Default	Extra
id_ngo	varchar(5)	NO	PRI	*NULL*	
organisation	varchar(100)	NO	PRI	*NULL*	
expenditure	int(11)	NO		*NULL*	
on_date	date	NO		*NULL*	

NGO

Field	Type	Null	Key	Default	Extra
ngo_id	varchar(4)	NO	PRI	*NULL*	
ngo_name	varchar(100)	NO		*NULL*	
ngo_city	varchar(100)	NO		*NULL*	
total_amt_received	int(11)	NO		*NULL*	

PHONEBOOK

Field	Type	Null	Key	Default	Extra
id	int(11)	NO	PRI	*NULL*	
phone_number	varchar(10)	YES		*NULL*	

USER_ADDRESS

Field	Type	Null	Key	Default	Extra
id_user	int(11)	NO	PRI	*NULL*	
email	varchar(100)	NO	PRI	*NULL*	
address	varchar(150)	YES		*NULL*	

References

1. StackOverflow
2. Database System Concepts - by Korth
3. W3Schools