CS375-Databases and Information Retrieval

Project Proposal (Due: Oct. 24, 2022)

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Purpose

The purpose behind our database is to host and store the kind of data used in e-commerce sites such as Amazon or eBay, this is reflected in DBMS design where we have listed all entities and attributes required of such a site, as well as their relationships. This database has been designed to be organized, well-structured and efficient for the fluid transfer of data; both reading and writing.

Our secondary purpose for building this DBMS is for each of us to cultivate a better understanding and in-depth knowledge of the work that goes into the backend development of many company websites which are frequently used by clients and customers. Creating this project gives us invaluable experience in the sort of work that will be expected of us, going into our careers as developers, and we will be able to call upon this experience to create future database management systems that are up to industry standard.

Objectives

Our main objective is to design, construct and implement a database which tracks and stores data used in an e-commerce site. In order to achieve this there are a few obstacles we must overcome first. The most critical requirement of any e-commerce site is the ability to purchase items. Without this, the site would not be able to accomplish its main purpose. To begin this project we must first start with a conceptual schema.

Our conceptual schema (which is included in the proposal) concisely outlines the architecture and operation of this database. Within this schema, we have included primary keys for all entities as well as foreign keys for the relationships between said entities. This design will allow us to achieve all objectives set out for this database while maintaining a rigid structure to ensure an unadulterated flow of data. Upon acceptance of this proposal, work shall begin immediately on the physical and external schemas as well.

Our second objective is to design and implement a simple front-end GUI to allow querying of the database. The goal of this is to easily demonstrate the flow of data within the database in a concise and understandable way that does not require SQL querying to accomplish. This is not meant to replace SQL querying but act as an additional step to our project to help visualize how our DBMS functions

Stakeholders:

- Customers

Data requirements

Customers making purchases on the e-commerce website would have to provide some information which would be stored in the database for the purpose of customer identification, achieving business objects and data validation; The following are tables in the database and the customer data requirements they are supposed to capture.

Stakeholder	**Table Name**	**Description**
Customer	Customer	This table captures the identity information of each customer that makes a purchase on the e-commerce website. It helps with customer identification.
	Product	This captures the information of the products on the websites which will be displayed for the customers to make a purchase.
	Orders	This table has the order information of each customer. It stores the delivery date and the number of items.
	Items	This table has information on the items within an order.
	Ratings	Ratings capture the feedback of the customers on each of the products.
	Address	This stores the shipping address of the customer. This information is needed to facilitate the delivery of the order.
	Returns	This table stores information on orders the customer would like to return.

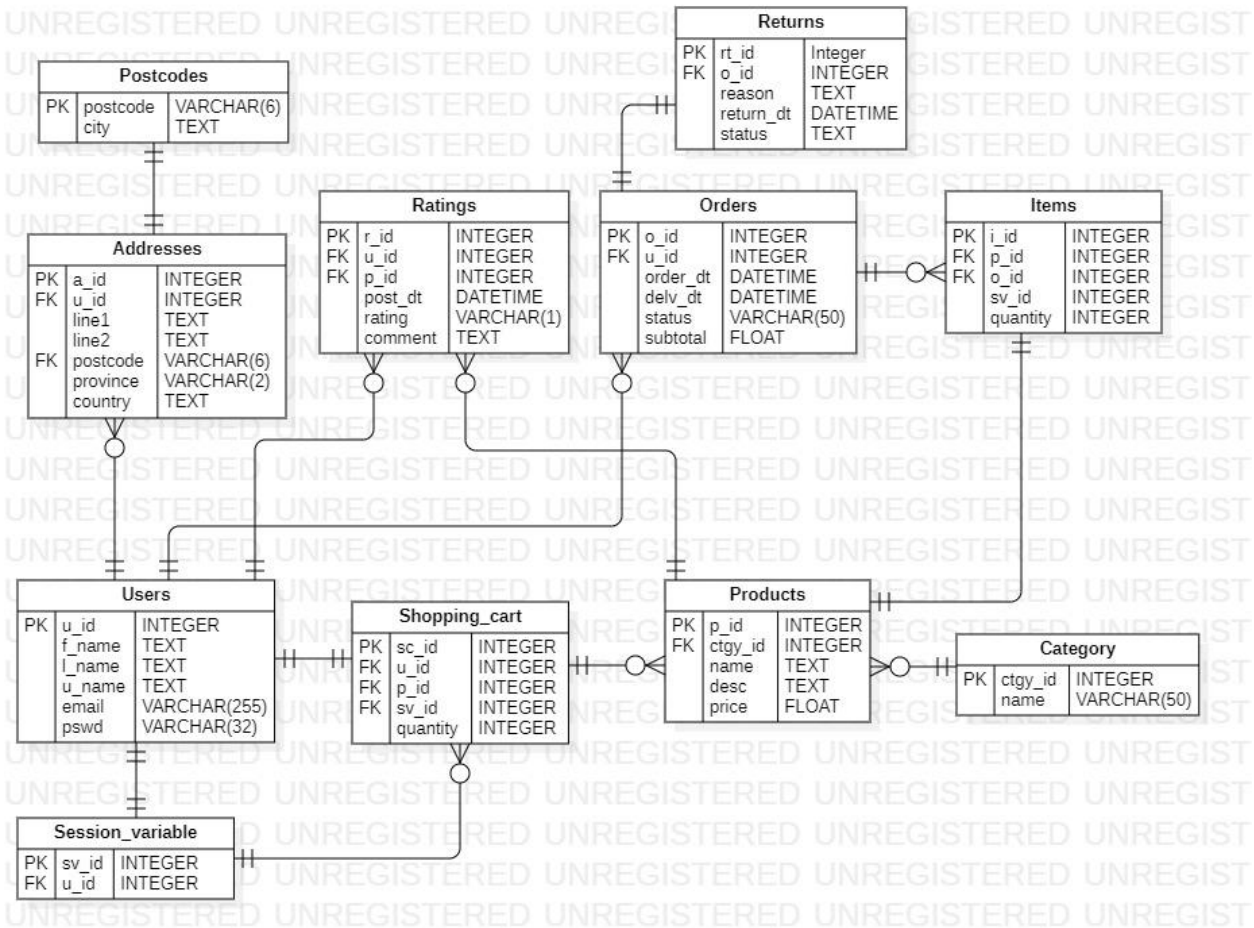
Tools and Technologies

Building a Database utilizes several tools and technologies that allow an individual to store, manage and retrieve the data. There are several options available when it comes down to selecting a DBMS (Database Management System), and DQL (Database Query Language).

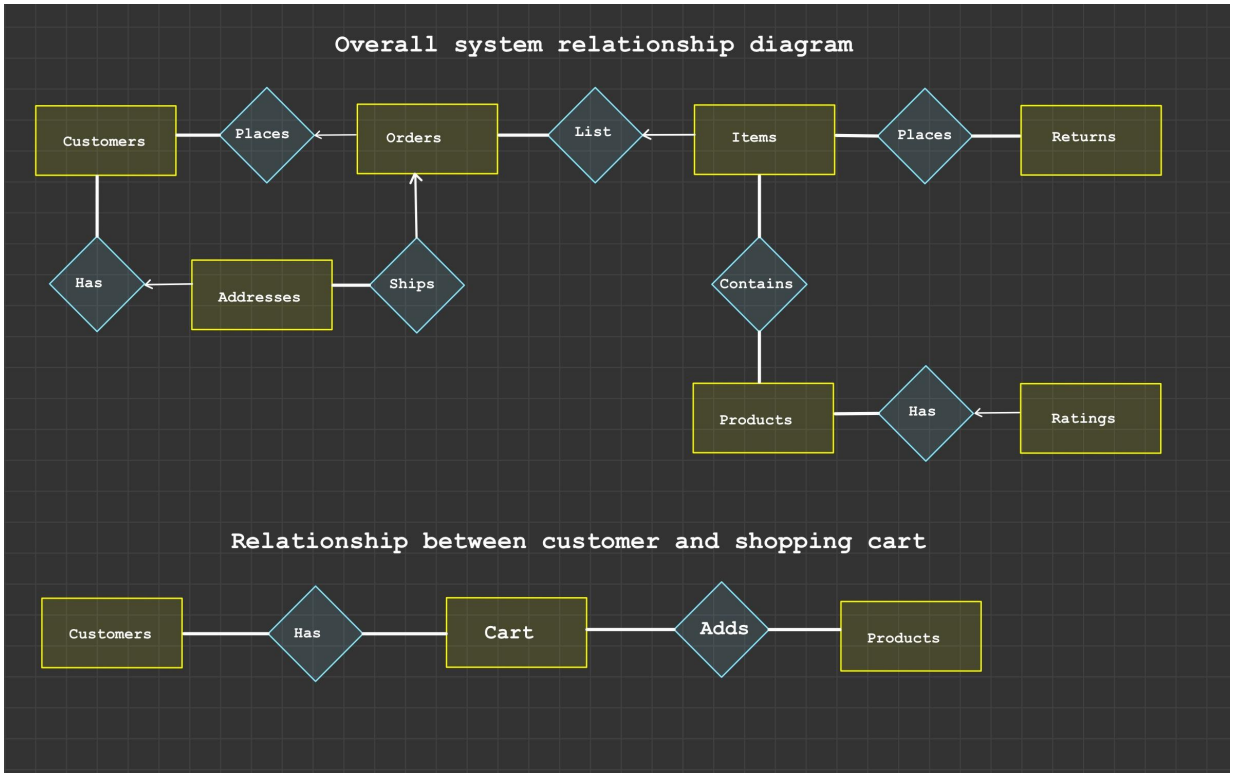
Since our group has experience using MySQL Database from CS215 - Web and Database Programming, we will be using MySQL Database hosted on Amazon RDS (Relational Database Service).

GitHub would act as a central repository that would hold ER Diagram, source code (queries), project proposal and the group presentation video.

Conceptual Schema



> ER Diagram



Contributors:

Name	Contribution
Andrew Petrie	- Front-end interface for the database. - Creating conceptual schema. - Writing test queries. - Documentation
Onimoe Wilfred Chidera	- Creating conceptual schema. - Crash recovery - Writing test queries - Documentation
Raj Wadia	- Creating conceptual schema. - Normalization - DBMS Setup - Writing and implementing of source code - Writing test queries. - Documentation