Terrific Tools

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1 Introduction

Our primary domains are:

1. Movies
2. Music
3. Tools
4. Recipes

For movies and music, we were going to create a command line application that orders the top media by what the critics think. We are also going to add additional metadata to each item such as downloads, money grossed, reviews, etc.

For recipes, we were going to create a command line application that gives recipe recommendations and analyze what ingredient the majority of the recipes share.

For tools, we were going to create a command line application that sorts the tools by the brand, their purpose of use and rating.

2 Design

2.1 Conceptual Model

We decided on a model that has a user, tools, category, and request ticket.

A user has basic information stored within them, such as login information and date they last accessed the system. The user has a generate unique identifier so that the system may query users distinctly. The user owns a tool and can make request tickets.

A request ticket is a request that a user can make to another user to ask if they can borrow that user's tool from their inventory. A request ticket contains information such as Date Needed, Duration and Status. The request ticket has a unique identifier in order for the system to search up unique request tickets. A request ticket is created by a user and requests a tool from another user.

A tool is a item that a user owns. A tool can have different Descriptions and Names and also have a boolean borrowed and unique identifying barcode. A user owns a tool and has a relationship with the category.

A category is a wrapper entity that only has a type. This is used by tools in order to figure out what type of tool a tool is.

2.2 Reduction to tables

We went through each entity and were able to reduce their properties and relationships to the attached tables.

We listed the UserID, ReqID, Barcode and Type as primary keys. You may use ReqID as a foreign key into the user table in order to find out which

requests a user has.

2.3 Data Requirements/Constraints

Key Constraint: Type, Barcode, ReqID, UserID.
Entity Integrity Constaint: Type, Barcode, ReqID, UserID.
Referential Integrity Constraint: ReqID.
Domain Constraint: UserID (Integer must be unique and positive), Create Date (DateTime),Last Offer (DateTime), User(String), Pass(unique string value bigger than zero), Email(it should be an email there has to be string values before and after the '@'), Req ID(Integer must be unique and positive), Data Needed(DateTime), Duration(Positive Integer), Statues(Boolean), Barcode(Positive Integer), Borrowed(Boolean), Desc.(String), Name(String), Type(String)

2.4 Sample Instance Data

Include 5 samples for every entity type and relationship type.

Request Ticket: 3, 2022-22-09, 5 , true
User: 1, 2021-22-09, 2022-13-06, user7364, 123456, user7364@gmail.com
Tools: 2, true, Crescent16 oz. Fiberglass General Purpose Hammer, I have had this tool for 3 years and it is in stellar condition and I have only used it a couple times!
Category: Hammer

Request Ticket: 4, 2022-22-10, 6 , false
User: 2, 2021-22-08, 2022-13-05, user2, 123457, user2@gmail.com
Tools: 3, false, Hammer2, Stiletto15 oz. TiBone 3 Milled Face and Curved Handle
Category: Hammer

Request Ticket: 5, 2022-22-07, 7 , true
User: 3, 2021-22-09, 2022-13-06, user3, 123458, user3@gmail.com
Tools: 4, true, Hammer3, Husky10 lb. Sledge Hammer with 34 in. Fiberglass Handle
Category: Hammer

Request Ticket: 3, 2022-22-09, 5 , true
User: 1, 2021-22-02, 2022-11-08, lola230, middlechild456, lola230@gmail.com
Tools: 4, true, DEWALT Adjustable Wrench, This wrench has worked with me through thick and thin and I highly recommend using it for your personal project
Category: Wrench

Request Ticket: 9, 2022-23-07, 10 , false
User: 1, 2021-22-09, 2022-13-06, JoeDonuts, Dunkinlove!, JoeDonuts@gmail.com
Tools: 6, false, Stanley 6 in. Slip Joint Pliers, They are kinda rusty but they work! I'll let you take em for fairly cheap.
Category: Pliers

3 Implementation

Use this section to describe the overall implementation of your database. Include samples of SQL statements to create the tables (DDL statements) and a description of the ETL process, including examples of the SQL insert statements used to populate each table initially.

Include also sample of the SQL insert statements used in your application program to insert new data in the database. Finally, add an appendix of all the SQL statements created in your application during Phase 4 and a description of the indexes created to boost the performance of your application.

4 Data Analysis

4.1 Hypothesis

Use this section to state the objectives of your data analysis; what are the observations you are expecting to find. Note that your final observations may end up differing from your proposal, that is also a valid result.

4.2 Data Preprocessing

Use this section to describe the preprocessing steps you have performed to prepare the data for the analytics. Preprocessing steps may include: data cleaning (e.g., filling missing values, fixing outliers), formatting the data (e.g., resolving issues like inconsistent abbreviations, multiples date format in the data), combining or splitting fields, add new information (data enrichness).

Explain how the data was extracted from the database for the analysis; if you used complex queries or views, or both.

4.3 Data Analytics & Visualization

Use this section to explain the process/techniques used to analyze the data, use data visualization to present the results, and explain them.

4.4 Conclusions

Use this section to explain the conclusions drawn from your data analysis.

5 Lessons Learned

Use this section to describe the issues you faced during the project and how you overcame them. Also, describe what you learned during this effort; this section, like the others, plays a critical component in determining your final grade.

The next subsection is meant to provide you with some help in dealing with figures, tables and references, as these are sometimes hard for folks new to LaTeX. Your figures and tables may be distributed all over your paper (not just here), as appropriate for your paper.

Please delete the following subsection before you make any submissions!

Table 1: Feelings about Issues

Flavor	Percentage	Comments
Issue 1	10%	Loved it a lot
Issue 2	20%	Disliked it immensely
Issue 3	30%	Didn't care one bit
Issue 4	40%	Duh?

5.1 Tables, Figures, and Citations/References

Tables, figures, and references in technical documents need to be presented correctly. As many students are not familiar with using these objects, here is a quick guide extracted from the ACM style guide.

First, note that figures in the report must be original, that is, created by the student: please do not cut-and-paste figures from any other paper or report you have read or website. Second, if you do need to include figures, they should be handled as demonstrated here. State that Figure 1 is a simple illustration used in the ACM Style sample document. Never refer to the figure below (or above) because figures may be placed by LaTeX at any appropriate location that can change when you recompile your source *.tex* file. Incidentally, in proper technical writing (for reasons beyond the scope of this discussion), table captions are above the table and figure captions are below the figure. So the truly junk information about flavors is shown in Table 1.

Figure 1: A sample black & white graphic (JPG).

6 Resources

Include in this section the resources you have used in your project beyond the normal code development such as data sets or data analytic tools (i.e. Weka, R).