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Project 3

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Contents

Statement of Academic Honesty

My name is: Markenson Delkhaste, I declare that, except where fully referenced no aspect of this project has been copied from any other source. I understand that any act of Academic Dishonesty such as plagiarism or collusion may result in serious offense and punishments. I promise not to lie about my academic work, to cheat, or to steal the words or ideas of others, nor will I help fellow students to violate the Code of Academic Honesty.

Name: Markenson Delkhaste Date: 5/9/22

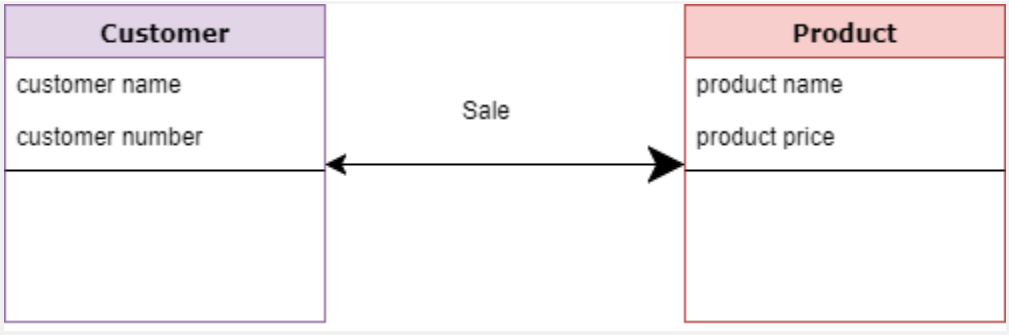
Signature: 

Introduction

This project will revolve around storing and querying Bitcoin blockchain using SQL Databases. It will go on to talk about incorporating this into Information Systems classes in the future. The subject will specifically be about how there are advantages and disadvantages to certain types of software. In a later part of this project, the subject will move away from Bitcoin. It will in turn focus more on SQL and different kinds of databases.

1. The paper talks about different methods concerning databases and their concern with SQL and Bitcoin. It goes on to talk about how to incorporate Bitcoin into Information Systems curriculum. In order to add the blockchain technology (which is central to Bitcoin) into Information Systems curriculum, one of the approaches is to put blockchain data in a SQL database. Another approach is through cloud computing whereby Bitcoin data is filtered and stored to facilitate analysis for different kinds of analytic problems. The third way is by using a third party web interface or by using Microsoft SQL Server with its many tables that comes along with many stored derived columns to improve performance.
2. A transaction puts Bitcoins' transfers from input to output accounts, along with related information such as authorization. Bitcoin transactions allow many inputs and outputs. The Bitcoin blockchain is pseudonymous since the transactions are publicly accessible. Though, in blockchain, the ownerships accounts are anonymous. One can also copy and paste Bitcoin addresses from here into the Blockchain.info.
3. SQL databases can be used to make examples and assignments for querying, accessing, and analyzing Bitcoin. If one stores the Bitcoin blockchain in a local SQL database, then that person would gain control and customization. Bitcoin Core uses Blocks which are stored in files that do not change for the most part. These are used to populate a SQL database. In addition, there are certain open source Bitcoin SQL database options, such as Abe.
4. Bitcoin's SQL Assignment is supposed to do several things. These include things such as executing SQL statements through a third party Web interface. It studies the relation schema of a new application. It also gains insight on stuff such as blockchain or other cryptocurrency type of software or programs. In addition, it gets exposure on Microsoft SQL Server.
5. There are many reasons to dislike Bitcoin but also some good side to bitcoin as well. For one, the amount of energy that is consumed and its carbon footprint would be a cause for concern for many. Secondly, it has been described by economists as an economic bubble which is bound to burst. Thirdly, the amount of electronic waste is massive as a result of using Bitcoin. Fourthly, It enables financial crimes to more easily take place.
6. I found the paper to be interesting. It led me to learn more about Bitcoin which I was previously unaware of since I'm skeptical of Bitcoin. That being said, I believe that there are certain steps to be taken in providing a comprehensive view on the matter. If Bitcoin has to be incorporated into Information Systems classes, then the advantages and disadvantages should be made clear to students. Though, I did like how the graphs presented gave the reader a visual representation of the subject.
7. Conceptual databases involve constructing a model of information given. Logical databases involve the construction of a model using given information but independent of a certain DBMS and other physical factors. A physical database involves transforming a data model into the physical data structure of a certain DBMS.

Conceptual:



Logical:

Physical:

8. CREATE VIEW lnvoice_View

AS SELECT Customer_T.CustomerlD, CustomerAddress, Order_T.OrderlD,

Product_T.ProductlD,ProductStandardPrice,

OrderedQuantity, and other columns as required

FROM Customer_T, Order_T, OrderLine_T, Product_T

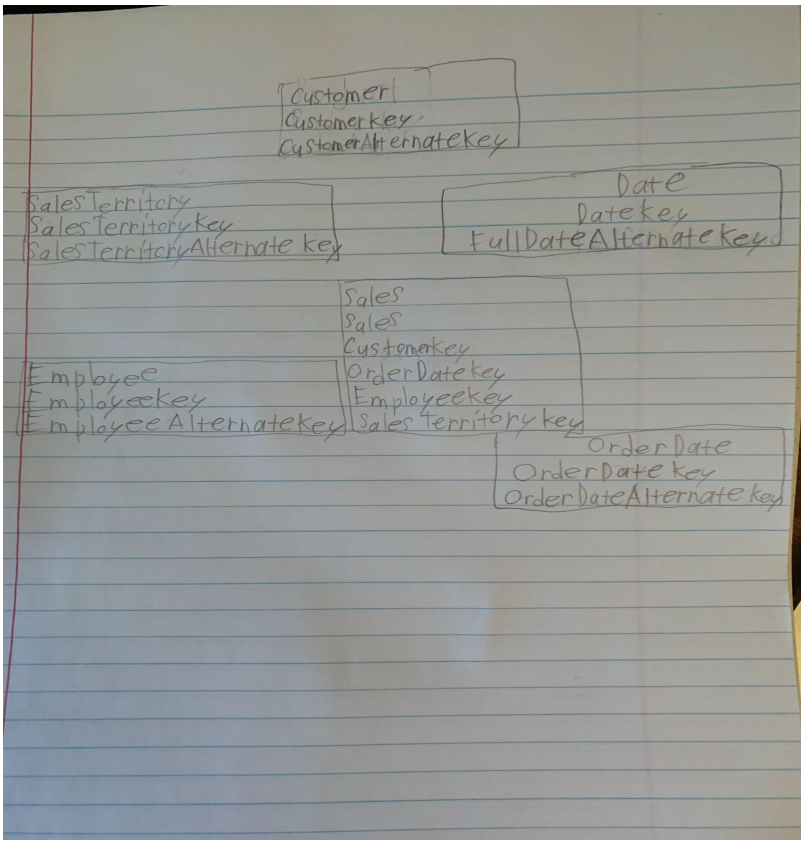
WHERE Customer_T.CustomerlD = Order_T.CustomerlD

AND Order_T.OrderlD = OrderLine_T.OrderD

AND Product_T.ProductlD = OrderLine_T.ProductlD;

9. **CREATE INDEX NameJDX ON Customer_T {CustomerName);**
10. I would make sure the software is running smoothly for the current user of the software or program. Data redundancy shouldn't be there. A modification to a database should be done after data processing. The system tolerates a potential power failure. Modifying the

database by one of the branch offices should be visible to all branch offices so as to help ensure transparency and communication.

11. Query optimizers make query plans for each query, each of which may be a mechanism used to run a query. SQL statements require minimal use of valuable resources. Query optimizers ensure this, in addition to expedited execution of each SQL query. For instance, a query optimizer may generate a series of query plans based on resource costs. SQL queries, though, may be simple or complex statements.
12. 

13. Data warehousing gives analyses on past organizations' performances to inform decision-making. It also serves as a historical archive of data. In addition, it can be shared across key departments for maximum usefulness. DataMart benefits include things such as transient analysis and agile and scalable data management. If these can be used, then they would probably be used on client solutions for better management.
14. The data quality might be able to be improved. One should look at the identity uniqueness, accuracy, consistency, completeness, timeliness, currency, conformance, and referential integrity. For improving data quality, specify integrity constraints that are enforced by the DBMS. Also, clean the operational data before they are placed within a data warehouse. Derived attributes can be calculated from related attribute values.
15. Rollback might be preferred. An application can be made to execute a ROLLBACK when the DBMS delivers an error message performing an UPDATE or INSERT command. It is the backout of unwanted changes. Before images of the records that have

been changed are applied, and the database is returned, to a previous state. The Rollback reverses the changes made by transactions that have been aborted.

16. Cloud computing involves using the delivery of different services via the Internet. These resources include tools and applications. Instead of keeping files on a proprietary hard drive or local storage device, cloud-based storage enables saving them to a remote database. An electronic device has access to the data and the software programs to run it. This might be beneficial in case one needs a backup for this project.

Analysis

My analysis as of now is that the topics concerning Bitcoin and the advantages and disadvantages associated with it is that it is all interesting. Intertwining cryptocurrency into an Information Systems course would be enlightening in a sense. Learning about the pros and cons concerning the likes of Bitcoin would serve investors and scientists well. As far as making databases for businesses, it was also enlightening. The different types of databases (e.g. physical) all serve their own purposes.

Lessons

The things that I learned about concepts such as data and cloud computing are valuable for certain professions. For instance, cloud computing is useful as a backup for information. Learning about the different types of databases and their examples helped visually for understanding their purposes or goals. For instance, conceptual database can be viewed as the outline of a project. Also, the recovery techniques that could be used in the project were useful for undoing errors.

Conclusions

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