

What is a data model computer science essay

[Technology](#), [Computer](#)



**ASSIGN
BUSTER**

First I like to offer my special thanks for my Data Analysis and Design lecturer, Mr. Deloosha Abeysooriya International College of Business and Technology southern campus in Matara. He is the guider of my. Also another 12 student of my M11 Batch. Also I thanks to my another lecturer's International College of Business and Technology southern campus in Matara. absultely I offer my faithful thanks for who help me to fulfill and success to this assignment's tasks.

I think this assignment will more helpful for my future targets. It will be easier to succeed because of this assignment's experience. As a good a faithful student of International College of Business and technology in Matara. I request forgive for my some mistakes of this assignment if it mentioned. As your faithful student I thank all of you.

Executive summary.

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Introduction

Task 1

Explain what is data model, Evaluate different data models explain why older data models are being replaced by new data models.

What is a Data Model?

“ Data model is a collection of concepts that can be used to describe the structure of a database”

And also we can define it as

“ When constructing any database it is compulsory to have the design of the database which provides a better mechanism for accessing the data in the database. The data model provides this facility and allows the DBA (Data Base Administrator) or the users to get the required information irrespective to the internal implementation of how the data is physically stored in the database”.

It can be broadly distinguished into 3 main categories:

High-level or conceptual data models

Low level or physical data models

performance or execution of model

There are so many data models use with data bases. As examples:

Hierarchical data modal.

Network data modal.

Relational data modal.

Object relational data model.

Object oriented data model.

Hierarchical data modal.

Organizers of hierarchical data in a data modal hierarchical tree structure, there is a segment of parent and child data. This structure implies that a record may be repetition of information, generally in a data segment child.

The serial data records, which have a set of join him sensation values.

Collect all records intense specific offer together it in record type. These record types are the same of the table in the relational data model, and individual records that are the similar of rows. To make links between these records users type the modal hierarchical parent-child relationship. This is a one-to-many mapping between the types of records. Here is a diagram for hierarchical data model.

Figure

Network data modal.

Network data model is looks like one of developed type of hierarchical data model. Because this also have parent and child connection. And also it is developed than hierarchical data model. Also network data model using many to much relationship in data . network data model is also greater than hierarchical data model. Also network data model is like a set. The network data model details of members or specification have categorizes as set. That set can be called as record. Network data model can have one or more records types. And also these have one to many relationships. Beside that it is permitted for use one to one relationship. When we consider about the diagram given below we can understand about the network data model.

Figure

Relational data modal.

Relational data model is one of another data model. All data and relations are organized in a table. Also there are so many different rules for table. A table is a collection of records and each record in a table contains the same fields.

Values Are Atomic.

The Sequence of Columns is Insignificant.

Each Row is Unique.

Column Values Are of the Same Kind.

Each Column Has a Unique Name.

The Sequence of Rows is Insignificant.

The relational data model is more complex than hierarchical and network data models. Also it covers large area by gathering data in to a table. There is a relation between each other records. Here is a relational data model diagram is given below. The all records are connecting with Sales facts table. Now we can see there have some connection of other record directly or indirectly to sales facts table.

Figure

Object relational data model.

This model is another complex and more successful one of than above data models. Also object relational data model add latest object storage abilities

to the relational systems at the core of modern information systems. So it is very useful for modern information systems. Because this object relational data model currently included various binary media like as music, video, pictures. a,¬A Object relational database management system's server can implement complexes analytical and data processing operations to search and turn things complex and other multimedia. a,¬A a,¬A Designers can work with database structures familiar spreadsheets and definition language, while absorbing new possibilities to manage the object easily and with more performance. Here is the example for object relational data models.

Figure (<http://www.joe-stevens.com>)

Object oriented data model.

This model developed by using C++, Java and smart talk object oriented programs. a,¬A A major benefit of this approach is to unite the application and development of the database to the data model smooth and linguistic environment. Because of that there are more results as like as Applications call for less code, use the more natural data modeling, and code bases easier to maintain. Because of this benefits object developers can easily write data bases with modest application without effort. a,¬A a,¬A Unlike an RDBMS a complex structure where data must be flattened to fit into tables or joined together from these tables to form the structure in memory, object oriented DBMS have no performance degradation to store or retrieve a web or a hierarchy of interrelated objects. a,¬A a,¬A This mapping one-to-one of the objects of the programming language objects to database objects has two advantages over storage approaches: it provides higher performance

management of objects, and allows better management of complex relationships between objects. a, →A This makes the most suitable object DBMS to support applications such as financial systems portfolio risk analysis, applications of telecommunications services, world wide web document structures, design and manufacturing systems and patient record systems of hospital, which have complex relationships between data.

Figure (<http://www.telerik.com>)