Answer the following questions:

1. Define each of the following terms:

a) Data - Raw facts and figures without context.

b) Field - A single piece of data, like a name or a number, within a record.

c) Record - A complete set of fields, representing one entity, like a person’s details.

d) File - A collection of records, forming a dataset.

1. What is a DBMS and what are its advantages?

A Database Management System (DBMS) is an assembly of software tools that oversee the organization of a database and regulate the retrieval of stored data. It acts as a mediator between the database and the end-user. The DBMS processes all incoming requests from applications and converts them into the intricate commands needed to execute those requests efficiently.

The Advantages are:

* **Enhanced Data Sharing**: The DBMS streamlines database management and regulates data access, allowing users to retrieve well-organized data more effectively.
* **Better Data Integration**: It enables diverse users to access data smoothly, offering a more unified and transparent view of the organization’s activities.
* **Reduced Data Inconsistency**: By implementing data normalization, which minimizes duplication and bolsters data integrity, the DBMS significantly lowers the chances of encountering discrepancies in data across various locations.
* **Improved Data Accessibility**: Users can swiftly obtain specific data manipulations, such as reading or updating, thanks to the DBMS’s ability to quickly process queries.
* **Enhanced Decision-Making**: The DBMS’s superior data management and accessibility lead to higher-quality information, which supports better decision-making.
* **Boosted User Productivity**: The ready availability of data and the facility to convert it into actionable information prompt users to make faster, more informed choices.

1. Explain the difference between data and information.

The difference between data and information is primarily in their level of processing and usefulness:

* **Data**: It refers to raw, unprocessed facts and figures without any context. Data on its own may not have meaning beyond its existence and can be numbers, characters, or any other unfiltered inputs.
* **Information**: This is processed data that has been organized or structured in a way that adds context and meaning, making it useful for decision-making. Information is derived from data by organizing it in a way that provides clarity and purpose.

In essence, data is the raw input that needs to be processed and interpreted to become information, which is meaningful and can guide actions or decisions.

1. What is metadata?

Metadata is essentially data about data. It provides information about other data, such as how, when, and by whom it was collected, its format, and its purpose. Metadata helps organize, find, and understand data, making it easier to manage, use, and maintain the integrity of data over time

5. Given the file below, answer the following questions:

e) How many records does the file contain?

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f) How many fields are there per record?

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