

# 9

## ICT 9 Activity Sheet Quarter 3 | Week 2

### Database Management



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# ***Introductory Message***

Welcome to ICT 9!

The **Learning Activity Sheet** is self-directed instructional materials aimed to guide the learners in accomplishing activities at their own pace and time using the contextualized resources in the community. This will also assist the learners in acquiring the lifelong learning skills, knowledge and attitudes for productivity and employment.



## **For learning facilitator:**

The **ICT 9 Activity Sheet** will help you facilitate the leaching-learning activities specified in each Most Essential Learning Competency (MELC) with minimal or no face-to-face encounter between you and learner. This will be made available to the learners with the references/links to ease the independent learning.



## **For the learner:**

The **ICT 9 Activity Sheet** is developed to help you continue learning even if you are not in school. This learning material provides you with meaningful and engaging activities for independent learning. Being an active learner, carefully read and understand the instructions then perform the activities and answer the assessments. This will be returned to your facilitator on the agreed schedule.

Name of Learner: \_\_\_\_\_ Grade and Section: \_\_\_\_\_  
 School: \_\_\_\_\_ Date: \_\_\_\_\_

## ICT-9 ACTIVITY SHEET Database Management

### Learning Competency:

Discuss how different data are stored through a program.

Support Competencies:

1. Differentiate data and information.
2. Differentiate Manual Filing System, File-based System and Database System.
3. Explain what is a Database Management System.

### Background information for the learners

The data that every organization creates is a very valuable resource, that is why data management is very important.

With proper data management, an organization will be more organized and productive. For example, it will be easier for employees to find and understand the information that they need to do their job. Information will be easily shared, stored and retrieved.

In this lesson, you will learn how data are kept or stored from a manual system, file-based system, and to a more reliable, efficient and secured way storing data in a program using a database management system.

### Activity Proper Activity 1.

DATA VS. INFORMATION	
Examples of Data	Examples of information
130/80 blood pressure reading	Maria Makiling's blood pressure reading on 05/01/21
Date on an employee application	Employee application record
Number of heart surgery in June	Medical Hospital heart surgery for June
Vendor address	Vendor record

**Data.** Is referred to as facts concerning objects and events that could be recorded and stored on computer media.  
**Information.** Is referred to as data that has been processed in such a way as to increase knowledge of the person who uses the data. Information reveals meaning.  
 Good, timely, relevant information is a key to decision making.

Manual Filing System	File-Base System	Database System
<ul style="list-style-type: none"> <li>Involve storing of documents by hand in a filing cabinet. These files kept in cabinets are locked to ensure security.</li> <li>It works well when the data or number of items to be stored is small.</li> <li>Works well on a large number of items which only require storage and retrieval.</li> <li>Limited processing of data.</li> </ul>	<ul style="list-style-type: none"> <li>The systems that are used to organize and maintain data files are known as file-based data systems. These file systems are used to handle a single or multiple files and are not very efficient.</li> </ul> <p><b>Some limitations of File-Based system:</b></p> <ul style="list-style-type: none"> <li>limited to a smaller size and cannot store large amounts of data</li> <li>it cannot support complicated queries, data recovery etc.</li> <li>the data is difficult to share with multiple users</li> <li>redundancy of data</li> </ul>	<p>Databases were developed as a solution for the limitations of file-based systems for data storage and management.</p> <p><b>The Essence of a Database:</b></p> <ul style="list-style-type: none"> <li>Organization of data</li> <li>Efficient retrieval of data</li> <li>Reliable storage of data</li> <li>Maintaining the consistency of the data</li> <li>Sharing and Structuring of data</li> </ul>

Databases have become an integral part of the day-to-day life in the business world. Banks, airlines, hospitals, and other businesses and agencies are using this to maintain an efficient and secured flow of information in their daily transactions.

Database system is a combination of software, data and computer hardware that implements a collection of data models and applications. A database system uses a DBMS together with application programs to create an information system for a specific purpose.

## Database Management System (DBMS)

- A Database Management Systems (DBMS) is software that facilitates the definition, creation, storing, maintenance or and access control to the database.
- It allows users to insert, update, and retrieve data from the database.
- It has features such as security (preventing unauthorized users from accessing the database), transaction management, backup, and recovery.

## Components of DBMS Environment

- **Hardware.** Physical device on which the DBMS resides. The particular hardware depends of the organization's requirements and the DBMS used  
Example: disk drives, printers, cables, etc.
- **Software.** The software component comprises of the DBMS software itself and the application programs together with the operating system.
- **Data.** It contains both the operational data and meta data. (a data that describes or gives information on another data.) It acts as a bridge between the machine components and human components.
- **Procedures.** Refers to the instructions and rules that govern the design and use of the database. The user of the system and the staff that manage the database requires require documented procedure on how to use or run the system.
- **Users.** People who interact with the database.  
Example: application programmers, end-users, data administrators

## Answer the following questions

1. Give 3 examples of data and information in a Banking industry.

**Data:**

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**Information:**

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## Activity 2.

Study the figures below and answer the following questions.

The figures below are examples of DMBS.

StudentID	CourseCode	Maths	English	Biology	Computing	Chemistry	Physics	Add Maths	Business	TotalScore	Average	Ranking
554365	C98123	87	78	44	74	57	88	75	72	578	72	2i
554365	C98123	87	78	44	74	57	88	75	72	578	72	2i
765487	C98124	76	85	78	45	43	65	87	86	483	82	34i
765477	C98124	87	87	45	67	89	96	90	89	652	81	2i
875595	C98145	86	67	54	76	65	79	82	89	578	72	26i
49533	C98124	76	89	98	89	90	95	93	95	725	91	14i

Figure 1

ID	BookID	Book Title	Author	RRP	Selling Price	Title	First Name	Last Name	Address1	Address2	Post Code	Date
1	C2367	Excel Made Easy	James	12.99	4.75	Ms	Heena	Shah	127 Lonner Street	Molden	BD3 6AZ	11/01/11
2	C2367	Digital Photography	Henry	16.99	6.99	Ms	Mark	Pharney	26 Fallow Street	Hagcliffe	BD4 2HF	16/12/11
3	C2367	Downloading Music	Campbell	16.99	12.75	Ms	Thomas	Pharney	56 Parsona Way	Molden	BD3 5TH	05/01/11
4	C2367	Decorative Painting	Land	12.99	3.99	Ms	David	Pharney	121 Nether Road	Hagcliffe	BD4 8LS	09/01/11

Figure 2

1. What do you think the application of each DBMS was designed for?
2. If you are a user of the DBMS, what information can you derive from it?

### Activity 3.

Multiple choice. Select the **letter** of your choice.

1. Which one of the following is an example of data?  
a. name      b. number of days late      c. grade level      d. all of the above
2. Where are the files kept in a manual filing system?  
a. computer      b. database      c. filing cabinet      d. none of the above
3. What component of DBMS environment that refers to the instructions and rules that govern the design and use of the database?  
a. user      b. procedure      c. data      d. software
4. The following are the functions of DBMS, except  
a. creating      c. updating  
b. back-up and recovery      d. data isolation
5. Which one of the following is an example of information?  
a. patient's name      c. date of admission  
b. Medical Hospital total cases of Covid-19      d. diagnosis result
6. The following are the limitations of file-based system, except  
a. time consuming      c. accurate result  
b. data duplication      d. large data cannot be shared easily

**True or false.** Write **T** if the statement is true and **F** if the statement false.

1. One of the important components in a DBMS are the users.
2. The software component act as a bridge between the machine components and human components.
3. One of the limitations of a database system is the efficiency of retrieving data.
4. Files that are kept in a filing cabinet are safe from theft or robbery.
5. Information helps human beings in their decision makings.
6. The DBMS itself is an example of a software.

### Reflection.

**Complete the statements below.**

I understand \_\_\_\_\_

I don't understand \_\_\_\_\_

I need more information about \_\_\_\_\_



### **Links and/or Other References**

[https://www.slideshare.net/nishant\\_munjali/database-management-system-71946828](https://www.slideshare.net/nishant_munjali/database-management-system-71946828)  
<https://www.slideshare.net/NILESHX/database-management-system-28774171>  
<https://taxation88.blogspot.com/2019/11/difference-data-information.html>  
<https://slideplayer.com/slide/6078784/>  
<https://www.google.com/search?q=metadata+meaning>  
<https://www.google.com/search?q=example+of+student>  
<https://www.google.com/search?q=example+of+library>  
<https://www.tutorialspoint.com/File-based-Data-Management-System>

