LEARNER’S GUIDE
CARRY OUT DATA ENTRY AND RETRIEVAL PROCEDURES

Published by

HEART TRUST/NATIONAL TRAINING AGENCY

Produced by

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*** 2003***

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Element 9: Maintain Computer Equipment

Self-Assessment Checklist
INTRODUCTION

Welcome

Welcome to the Learner’s Guide for Unit of Competency “Carry Out Data Entry and Retrieval Procedures”. This is just one of a number of Learner’s Guides produced for the Information Technology and Communications stream of the Library and Information Services Industry, and it is designed to guide you, the learner, through a series of learning processes and activities that will enable you to achieve the specified learning outcomes for the competency unit.

The content of this guide was developed from the Competency Standard ITICOR0011A, which is one of the basic building blocks for the National Vocational Qualification of Jamaica (NVQ-J) certification within the industry. Please refer to your Learner’s Handbook for a thorough explanation of standards and competencies, and how these relate to the NVQ-J certification.

You are also advised to consult the Competency Standard and assessment instrument for a better understanding of what is required to master the competency.

This Competency Unit

“Carry Out Data Entry and Retrieval Procedures” addresses the knowledge and skills requirements for effectively carry out data entry and retrieval procedures. There are nine main areas or elements:

Element 1: Initiate Computer System
Element 2: Enter Data
Element 3: Retrieve Data
Element 4: Amend Data
Element 5: Use Document Layout and Data Format Facilities
Element 6: Monitor the Operation of Equipment
Element 7: Access and Transmit Information via the Internet

Element 8: Close Down Computer System

Element 9: Maintain Computer Equipment

As you go through each element, you will find critical information relating to each one. You are advised to study them carefully so that you will be able to develop the necessary knowledge, skills and attitudes for carrying out data entry and retrieval procedures.

**Before you start**

Before you start this Learner’s Guide, you need to:

a. Obtain a *Learner’s Logbook* that you will use to record evidence of your new skills/competence. As you demonstrate your new skills, record your activities and have your learning facilitator sign off on them. This will allow you to provide evidence of your competence when you are being assessed against the competency standard.

b. Ensure that you have access to the facilities and equipment necessary for learning.

c. Ensure that your learning resources are available.

d. Ensure that you are wearing suitable clothing, that tools and equipment are safe, and that the correct safety equipment is used.

e. Plan your learning programme (see below)

f. Understand how to use this Learner’s Guide (see below)

**Planning your learning programme**

The self-assessment checklist on the following page will assist you in planning your training programme as it will help you to think about the knowledge and skills needed to demonstrate competency in this unit. As you go through the checklist you will be able to find out what elements you have already mastered and which ones you will need to pay more attention to as you go through the learning process.

To complete the self-assessment checklist, simply read the statements and tick the ‘Yes’ or ‘No’ box. You should do this exercise now.
# Self-Assessment Checklist
## Carry Out Data Entry and Retrieval Procedures

### Element 1  Initiate Computer System

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>I can correctly check equipment and work environment for readiness to perform scheduled tasks</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>I can identify the hardware components of the computer and their functions correctly</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>I can power up equipment correctly</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>I can apply access codes correctly</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>I can select and load appropriate software from the menu</td>
<td></td>
</tr>
</tbody>
</table>

### Element 2  Enter Data

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>I can identify and collect types of data for entry correctly</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>I can select and use input devices, appropriate for the intended operations</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>I can ensure manipulative procedures of input device conform to established practices</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>I can ensure keyboard/mouse is operated within the designated speed and accuracy requirements</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>I can locate computer files or create, name and save new files correctly</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>I can enter data accurately in the appropriate files using specified procedure and format</td>
<td></td>
</tr>
</tbody>
</table>
7. I can validate entered data in accordance with specified procedures ( ) ( )
8. I can correct and report anomalous results in accordance with specified procedures ( ) ( )
9. I can make back-up in accordance with operating procedures ( ) ( )

<table>
<thead>
<tr>
<th>Element 3</th>
<th>Retrieve Data</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>I can establish the identity and source of information ( ) ( )</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>I can obtain authority to access data where required ( ) ( )</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>I can locate and access files and data correctly ( ) ( )</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>I can maintain integrity and confidentiality of data ( ) ( )</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>I can retrieve the relevant reports or information using approved procedure ( ) ( )</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>I can ensure that formats to retrieve report or information conform to that required ( ) ( )</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Element 4</th>
<th>Amend Data</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>I can establish sources of data/information for amendment ( ) ( )</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>I can locate data to be amended within the file correctly ( ) ( )</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>I can enter, change or delete the correct data/information using appropriate input device and approved procedures ( ) ( )</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>I can maintain the integrity of data ( ) ( )</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Element 5  Use Document Layout and Data Format Facilities

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>I can verify requirements for document where necessary</td>
<td>( )</td>
</tr>
<tr>
<td>2.</td>
<td>I can apply the given format and layout appropriately</td>
<td>( )</td>
</tr>
<tr>
<td>3.</td>
<td>I can identify, access and use facilities to achieve the desired format and layout correctly</td>
<td>( )</td>
</tr>
<tr>
<td>4.</td>
<td>I can use data manipulating facilities correctly</td>
<td>( )</td>
</tr>
<tr>
<td>5.</td>
<td>I can ensure format reflects accuracy and completeness</td>
<td>( )</td>
</tr>
</tbody>
</table>

### Element 6  Monitor the Operation of Equipment

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>I can monitor the system to ensure correct operation of tasks</td>
<td>( )</td>
</tr>
<tr>
<td>2.</td>
<td>I can deal with routine system messages promptly and correctly</td>
<td>( )</td>
</tr>
<tr>
<td>3.</td>
<td>I can refer to non-routine messages promptly in accordance with operating requirements</td>
<td>( )</td>
</tr>
<tr>
<td>4.</td>
<td>I can deal with error conditions within level of authority and report uncorrected errors promptly</td>
<td>( )</td>
</tr>
<tr>
<td>5.</td>
<td>I can monitor output devices and materials for quality</td>
<td>( )</td>
</tr>
</tbody>
</table>

### Element 7  Access and Transmit Information via the Internet

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>I can gain access to the Internet in accordance with the provider’s operating procedures</td>
<td>( )</td>
</tr>
<tr>
<td>2.</td>
<td>I can demonstrate evidence of the ability to negotiate web site to locate and access specified information and other services efficiently</td>
<td>( )</td>
</tr>
<tr>
<td>3.</td>
<td>I can send and retrieve e-mail competently</td>
<td>( )</td>
</tr>
</tbody>
</table>
### Element 8  Close Down Computer System

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I can follow the correct shut down sequence</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>2. I can report problem with shutting down computer promptly</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>3. I can observe all safety and protective procedures</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>4. I can preserve the system integrity and security</td>
<td>( )</td>
<td>( )</td>
</tr>
</tbody>
</table>

### Element 9  Maintain Computer Equipment

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I can ensure that cleaning materials and/or solutions used meet specified recommendation</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>2. I can clean the equipment as directed</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>3. I can identify and promptly report wear and faults to the appropriate personnel</td>
<td>( )</td>
<td>( )</td>
</tr>
</tbody>
</table>

How did you do?

If you ticked all or most of the ‘Yes’ boxes then you might not need to go through the entire guide. Ask your **learning facilitator** to assist you in determining the most appropriate action you should take.

If you ticked a few of the ‘Yes’ boxes or none at all then you should work through all of the guide, even though some of the material may be familiar to you.

Plan your learning based on your answers. Be sure to involve your **learning facilitator** in the planning process.
How to use this Learner’s Guide

This Learner’s Guide is designed to assist you in working and learning at your own pace.

We suggest that you:

• Go through the sections/elements as they are presented (starting at Section 1)
• Check your progress at each checkpoint to ensure that you have understood the material
• Observe the icons and special graphics used throughout this guide to remind you of what you have to do and to enhance your learning. The icons and their meanings are as follows:

  **Complete Assessment Exercise**
  This exercise requires you to think about the knowledge and skills that you have or will develop in this competency unit.

  **Definition Box**
  Words/phases are defined or explained in this box. The words/phases being explained are in bold print.

  **Checkpoint**
  This denotes a brain teaser and is used to check your understanding of the materials presented. No answers are provided for the questions asked.

  **Activity**
  This denotes something for you to do either alone or with the assistance of your learning facilitator.

  **Reference**
  Points you to the reference materials and other support documents or resources used in compiling the unit content.
• Ask your learning facilitator for help if you have any problems with the interpretation of the contents, the procedures, or the availability of resources.

• Complete each activity as you come to it. If the activity requires you perform an actual task, be sure to tell your learning facilitator when you get to that activity so that he/she can make any arrangements, if necessary.

• Get your learning facilitator to sign and date the Learner Logbook when you have completed an activity.

• Complete the self-assessment checklist at the end of each section or element.

When you have worked through all elements of the guide, and when you can tick every ‘Yes’ box, you are ready for assessment and should ask your learning facilitator to assist you in making the arrangements to have your performance assessed.

Using the Computer and Other Resources

Where your activities refer you to the library, computer and Internet resources, ask your learning facilitator to assist you with locating these resources. If you are getting your training in an institution, there may be a library and a computer laboratory. If this is not the case, visit the local library and find out what resources are available.

If you are new to the computer and the Internet, someone in the computer room should be able to show you how to use these resources.

Please note that in many of your activities you have been referred to information on the Internet. This is because the Internet has a vast amount of information that can help you in acquiring the particular competencies. We would like to advise you, however, that we cannot guarantee that all the sites will be available when you need them. If this happens, ask your learning facilitator to assist you with locating other sites that have the information you require.

Method of Assessment

Competency will be assessed while you are actually performing the tasks related to this competency, this may be in a real workplace or a simulated situation that accurately relates to the work situation. You are advised to consult the associated competency standard and assessment instrument for further details relating to the assessment strategies.

You may now start your learning. Have fun while you work!
ELEMENT 1: INITIATE COMPUTER SYSTEM

LEARNING OUTCOMES

As you go through this element it will provide you with the knowledge, skills and attitude required to initiate computer system. Your learning facilitator is there to assist you through the various activities so on completion you should be able to:

1. Check correctly if equipment and work environment are ready to perform tasks
2. Identify the hardware components of the computer and their functions
3. Apply access code correctly
4. Select or load appropriate menu from software

IDENTIFY COMPUTER HARDWARE CHECK READINESS TO PERFORM TASKS

Computers may be classified as dedicated or multi-purpose. A dedicated computer is designed to perform only one function repeatedly, for example – a computer that weighs packages on a production line. An example of a multi-purpose computer is the regular computer used in offices or in homes. Those machines are designed with the flexibility to perform a number of different functions at the same time.

The physical machine and all attached equipment are called hardware. The instructions that tell the computer what to do are called "software." A set of instructions that perform a particular task is called a "program" or "software program."

Peripheral: Any device connected to and under the control of the Central Processing Unit (CPU).

The manipulation of data in all computers or computer systems, regardless of size, can be divided into four stages. These are:

- Input – where data is accepted from outside the computer or computer system
- Process – inputted data is manipulated according to given instructions thus producing information
- Storage - data and information are stored for future use
- Output - information produced made available to the outside for use.

It is important that before turning on the computer you check to see if all the necessary peripheral devices are attached and powered-up (if needed).
The mouse

One of the most common and highly used input devices is the mouse. It is the pointing device that fits comfortably under the palm of your hand. It is the most widely used pointing device on desktop computers. Its invention represents one of the great breakthroughs in an area called computer ergonomics because it frees you the user to a large extent from using the keyboard. In particular, the mouse is important for graphical user interfaces because you can simply point to options and objects and click a mouse button. The mouse is also useful for graphics programs that allow you to draw pictures by using the mouse like a pen, pencil, or paintbrush.

CHECKPOINT

Define hardware.
Name four input devices.

ACTIVITY

Given that the four major stages in a computer or computer system are 1) Input, 2) Processing, 3) Storage, 4) Output, identify as many devices as possible that may be used in each stage. Prepare a presentation (pictures may be included) outlining this information.

REFERENCE

Equipment is powered up correctly

Depending on the computer you are using, what you have to type to get in to your computer may be different, but the basics are the same for most computers.

1. Switch on system by pressing the power button and the computer will then “Boot Up”
2. A login dialog box may prompt you to enter information such as user name and password.
3. You will now be at your desktop.

Most modern computers provide features or interfaces that make user interaction with the computer quite simple compared to the early days of computers when only computer specialists were able to use them. The computer is meant to simulate your working space or office and the desktop (Windows 95/98 desktop as shown in the diagram), being one of those metaphors, is meant to suggest that in the office environment you are currently located on the top of your desk. Other interfaces include dialog boxes, drop-down menus and overlapping windows. An example of a dialog box would be the login prompt referred to earlier. Other metaphors you will encounter include files, documents, spreadsheets, notepad, and recycle bin.

One of the main controls to become aware of on your desktop is the Start Button, which is usually in the left bottom corner of your screen. Familiarise yourself with the desktop and the various means to access your files and documents. There are a number of drop-down menus available on the desktop that provide access to the application software as well as other applications. Take some time to familiarize yourself with navigating the desktop and use the help feature provided.

**ACTIVITY**

Ask your learning facilitator to explain what happens during a cold boot on a personal computer using Windows Operating System.

**REFERENCE**

Research the various processes that take place when electrical power is applied to a computer or a computer system, resulting in the system(s) booting. Discuss your findings with your learning facilitator and classmates.

There are basically two types of software:

1. **System Software** including
   - Operating systems
   - Translators
   - Utilities
   - Operating environments

2. **Application Software**, including
   - User application
   - Application packages

You can appreciate that the system software are written in languages that the hardware can understand while the application software are written in languages that users can understand. It therefore means that intermediary language translators convert “higher level user” languages to “machine readable” languages that the hardware can respond to.

System software affect the control and performance of computer system. They have the following functions:

- To make the best use of the hardware
• To provide for such common functions as program language, translation, sorting and copying.

Operating Systems

Though it is one of the system software, the *operating system* is the most important program to run on a computer. Every general-purpose computer must have an operating system to run other programs. Operating systems perform basic tasks, such as:

• recognizing input from the keyboard
• sending output to the display screen
• keeping track of files and directories on the disk
• controlling peripheral devices such as disk drives and printers.

For large systems, the operating system has even greater responsibilities and powers. It is like a traffic cop -- it makes sure that different programs and users running at the same time do not interfere with each other. The operating system is also responsible for *security*, ensuring that unauthorized users do not access the system.

ACTIVITY

Research the following classifications of operating systems:
• Multi-user
• Multiprocessing
• Multitasking
• Multithreading
• Real time
Discuss your findings with your learning facilitator and classmates.

A very popular operating system is the Microsoft Windows Operating System, and it is very likely that your computer uses this software. If this is so your desktop should look similar to the diagram below:
Application Software

Applications software (also called *end-user programs*) include:

- word processors
- database programs
- Spreadsheet/accounting software
- presentation and graphics software

There is a sense in which application software sit on top of systems software because they are unable to run without the operating system and system utilities.

The set of programs you will be concerned about is the application software. Use the desktop to identify the application software that are available on the computer.

**CHECKPOINT**

What is the critical relationship between application software and system software?

**ACTIVITY**

Carry out a survey of the various application software that are being used in your establishment. Categorize them according to the particular application—such as, Microsoft Word for word processing. Discuss with your learning facilitator and present this information in tabular format.

**REFERENCE**

2. [http://www.webopedia.com/TERM/o/operating_system.html](http://www.webopedia.com/TERM/o/operating_system.html)
Computer Memory

- You have been learning about data and software that make the computer function effectively. You may have wondered just how the computer manages the storage of these for effective operations. The computer uses different types of memory to manage its various operations. There is a distinction between memory and storage - memory refers to data stored in the form of electronic chips while storage refers to memory on tapes or disks.

**ACTIVITY**

Prepare a presentation that provides information on the different types of memory and their application in a computer or computer system.

**CHECKPOINT**

1. Explain the abbreviations RAM and ROM
2. Highlight the difference between the two
3. How would you classify the following storage media:
   a. Floppy disks
   b. Hard drives
   c. CD-ROMs

**REFERENCE**

ARE YOU READY TO PROVE YOUR COMPETENCY?

Now that you have completed this element check if you have fully grasped all the components by doing the following self-assessment.

<table>
<thead>
<tr>
<th>Checklist 1</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I understand how to perform scheduled tasks.</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>2. I can identify the hardware components and their functions.</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>3. I understand how to power-up equipment</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>4. I can explain how to apply access codes</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>5. I can explain how to load or select appropriate software from menu</td>
<td>( )</td>
<td>( )</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Checklist 2</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Scheduled tasks are performed correctly</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>2. Hardware components and their functions are correctly identified</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>3. Equipment is powered up correctly</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>4. Access codes are applied correctly</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>5. Software is loaded correctly</td>
<td>( )</td>
<td>( )</td>
</tr>
</tbody>
</table>
ELEMENT 2: ENTER DATA

LEARNING OUTCOMES

As you go through this element it will provide you with the knowledge, skills and attitude required to enter data. Your learning facilitator is there to assist you through the various activities so on completion you should be able to:

1. Identify correctly the types of data for entry.
2. Select and use appropriate input devices for intended operations.
3. Manipulate procedures of input devices and ensure that they conform to established practices.
4. Ensure that keyboard/Mouse is operated within the designated speed and accuracy requirement.
5. Correctly locate or create new files and save.
6. Enter data accurately in appropriate files using specified procedures and format.
7. Validate data entered.
8. Correct or report anomalous results in accordance with specified procedures.
9. Make back-up in accordance with specified procedures.

Types of Data for Entry Correctly Identified and Collected

The aim of any method of data collection is to translate information created by people into a form usable by the computer. An effective data entry system must be fast, accurate, versatile, efficient, secure and cost-effective.

This usually entails:

- reducing the amount of data which needs manual preparation
- designing input to erase the task of preparation (using menus and simple boxed forms)
- using the minimum of stages from origin of the data to computer input.

**ACTIVITY**

Research the following methods of data entry:
- Online Data Entry
- Source Document Conversion
- Direct Data Capture

Create a chart that outlines which of the following devices or source documents are associated with the data entry methods you researched:
(a) Visual display units (VDU) (b) light pens, (c) voice input and shop-floor data collection devices, (d) order forms, (e) time sheets, (f) specially marked or printed documents (e.g. questionnaires, bank cheques), (g) tags attached to clothing and collected at the point of sale.
Name some methods of data entry.

Identify situations where the following data entry devices are used:
- Scanner
- Camera
- Microphone

**Application Software**

As was said earlier software must work with data to produce information. It is important therefore to discuss application software in more detail. Some of the more popular applications software packages fall into the following categories:

- word processors
- Spreadsheet/accounting software
- database programs
- presentation and graphics software

Most of these software cover common business functions and have widespread use in all types of enterprises.

Examples of software are: (i) Word processing- Word perfect, Wordstar, MS Word (ii) Spreadsheet – lotus 1-2-3, Supercede, MS Excel, (iii) Database management: FoxPro, MS Access, mySQL

**Word Processing**

Word processing software, sometimes called a word processor, allows users to create and manipulate documents that contain text and graphics.

Word processing software is used to develop documents such as letters, memos, reports, newsletters and web pages.

Word processing software has many features to make documents look professional and visually appealing. You can:-
- change the shape and size of characters in headings
- change the color of characters
- organize text into newspaper-style columns-incorporate audio clips, video clips, and many types of graphical images

(Element 5 will give more detail in this application)
Spreadsheets

Spreadsheets are designed to manipulate numeric data. They are easy to use and have many applications, particularly in accounting, statistics and mathematics. With spreadsheet software you can organize data in rows and columns and perform calculations on this data. The rows and columns are called worksheets.

Most spreadsheet software have basic features to help you create, edit, and format worksheets. (see diagram below.)

**CHECKPOINT**

What is a spreadsheet software? Give some types of jobs in which spreadsheets can be used.

**ACTIVITY**

Go to the following sites: [http://www.mdx.ac.uk/www/study/Spread.htm](http://www.mdx.ac.uk/www/study/Spread.htm); [http://www.school-resources.co.uk/FramesForKS3SpreadsheetQuiz.htm](http://www.school-resources.co.uk/FramesForKS3SpreadsheetQuiz.htm) and learn about spreadsheets. Ask your learning facilitator to provide you with practice exercises.

**REFERENCE**

4. [http://www.connected.ac.ug/pdle/Intro_to_Computers/software.htm](http://www.connected.ac.ug/pdle/Intro_to_Computers/software.htm)
**ACTIVITY:**

Use a spreadsheet software to record the following information in the sheet below and calculate the count.

<table>
<thead>
<tr>
<th>Cheque</th>
<th>Coins</th>
<th>Credit card</th>
<th>Voucher</th>
<th>Notes</th>
<th>Debit Card</th>
</tr>
</thead>
<tbody>
<tr>
<td>$1104.65</td>
<td>$5 (30)</td>
<td>$3800.00</td>
<td>$150 (5)</td>
<td>$1000 (19)</td>
<td>$768.00</td>
</tr>
<tr>
<td>$2649.00</td>
<td>$10 (56)</td>
<td>$1910.23</td>
<td>$450 (9)</td>
<td>$500 (25)</td>
<td>$1500</td>
</tr>
<tr>
<td>$20 (80)</td>
<td></td>
<td>$480.00</td>
<td></td>
<td>$100 (15)</td>
<td></td>
</tr>
<tr>
<td>10c (50)</td>
<td></td>
<td></td>
<td></td>
<td>$50 (12)</td>
<td></td>
</tr>
</tbody>
</table>

(Numbers in bracket indicate the number of each kind)

Ask your learning facilitator to assist you complete this activity.

(The following is an example of a counting sheet that may be used in some establishments in the process of counting cash and calculating non-cash documents.)

**CASH/NON-CASH COUNTING SHEET**

<table>
<thead>
<tr>
<th>NOTES</th>
<th>NUMBER</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>COINS</th>
<th>NUMBER</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**NON-CASH DOCUMENT:**

<table>
<thead>
<tr>
<th>TYPE</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL</td>
<td></td>
</tr>
</tbody>
</table>

Total non-cash documents $
Discuss with your learning facilitator how a word processing software could be used in data entry activities.

**Using appropriate input devices for intended operations**

Input devices for operations include:

- Document readers
- Scanners
- Cameras
- Keyboards
- Direct input from other instruments
- Bar codes
- Light pens
- Tags
- Badges
- Key to storage systems

**CHECKPOINT**

Name 2 input devices and identify a scenario in which each of those devices is used.

**ACTIVITY**

Associate the following data entry devices with the data entry methods mentioned above. The data entry devices are:

- Keyboard
- Mouse
- Scanner
- Camera
- Microphone

Discuss your work with your learning facilitator.
**ACTIVITY**

Supermarkets have been equipping their checking stations with scanners as part of their business improvement strategy. Go to the following site: [http://www.klbschool.org.uk/ict/gcse/theory/hardware/input.htm](http://www.klbschool.org.uk/ict/gcse/theory/hardware/input.htm) and research the advantages and disadvantages of the various input devices. Based on the results of the research visit the supermarket and inquire as to the reasons for the changes made. Prepare a report for presentation to your learning facilitator.

**REFERENCE**


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**Manipulative procedures of input device conform to established practices.**  
**Keyboard/Mouse is operated within the designated speed and accuracy requirements**

**Operating the Mouse**

As you move the mouse, the pointer on the screen also moves. Note the movement of the pointer on the computer screen as you move the mouse. Do you observe synchronization between them? For example, when you move the mouse to the left, the pointer moves left on the screen. When you move the mouse to the right, the pointer moves right on the screen and so on.

You use the mouse to move the pointer on the screen to an object such as a button, menu, an icon, a link, text or picture. Then you press or click the mouse button to perform a certain action on that object.

In addition to clicking, you can perform other operations using the mouse. These include:

- Point
- click
- right click
- double click
- click and drag or drag and drop
**ACTIVITY**

1. Go to the following site: [http://scs.unl.edu/training/selfhelp/Mouse.pdf](http://scs.unl.edu/training/selfhelp/Mouse.pdf) and read about the use of the mouse. Use the table below to record your observations when you point to objects (indicated in brackets) in the various applications and perform the mouse actions. Discuss your findings with your learning facilitator.

2. Practise the manipulation of your fingers to execute the various mouse clicks

<table>
<thead>
<tr>
<th>Mouse Action</th>
<th>Software Application</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Word Processing</td>
</tr>
<tr>
<td></td>
<td>(text)</td>
</tr>
<tr>
<td></td>
<td>Spreadsheet</td>
</tr>
<tr>
<td></td>
<td>(worksheet)</td>
</tr>
<tr>
<td></td>
<td>Database management</td>
</tr>
<tr>
<td></td>
<td>(database)</td>
</tr>
<tr>
<td></td>
<td>Graphics</td>
</tr>
<tr>
<td></td>
<td>(picture)</td>
</tr>
</tbody>
</table>

- Click or left click
- Double click
- Right click
- Click and drag or drag and drop
CHECKPOINT

What is the most widely used pointing device on desktop computer?

Operating the Keyboard

A keyboard is an input device that contains keys that you press to enter data into the computer.

Desktop computer keyboards typically have from 101 to 105 keys. Keyboards for smaller computers such as notebook computers contain fewer keys.

A computer keyboard include keys that allow you to type letters of the alphabet, numbers, spaces, punctuation marks, and special symbols such as the dollar sign($), and asterisk(∗).

Many desktop computers also have a numeric keypad –keys that include numbers.

*Function keys*—special keys programmed to issue commands to a computer, for example-F1.

*Special keys*—used in combination with the function keys.—SHIFT, CTRL, ALT, and others.

*Arrow/cursor keys*—one pointing up, one pointing down, one left, one right.

*Toggle keys*—keys that switches between two different states. The NUM LOCK key, for example, is a toggle key. When you press it once it locks the numeric keypad.(TRY IT).

Most keyboards also contain keys such as HOME, END, PAGE UP, and PAGE DOWN that you can press to move the insertion point to the beginning or end of a line, page, or document.

*Windows key* – displays the start menu.

*Application key* – displays an item’s shortcut menu.

Using the keyboard involves

1. Locating the pointer on the computer screen at the exact position where the typing or insertion, by means of the mouse or by means of using the arrow/cursor keys on the keyboard

2. Entering the data by typing a combination of letters,
numbers and special characters as required.

The computer operating system also provides a number of very helpful features such as shortcut keys to execute a number of the formatting functions in the creating and editing of various documentations. Explore your keyboard by pressing the various keys and observe the effect on the document at hand. You can always press the “UNDO” icon to restore your document’s format.

**CHECKPOINT**

1. What strange keys do you observe on the keyboard you are using?
2. How do they fit into the typical keyboard layout?
3. Can you make a determination of their functions based on how they are labeled?

**ACTIVITY**

1. Based on the operating system that your computer is using and with the assistant of your learning facilitator research the short-cut key combinations, as well as the actions associated the keyboard function keys (F1 – F12) that you may use in entering data.

2. Practise using these features and you should notice increased efficiency in your work.

**REFERENCE**

CHECKPOINT

How well do you know your keyboard? Label the diagram below.

Computer Files are correctly created name and saved

Name and save computer files

You should be able to:

a) Create a file
b) Name a file
c) Save a file

In mastering this section you need to know the following terms:

Directory – An organizational unit, or container, used to organize folders and files into a hierarchical structure. You can think of a directory as a file cabinet that contains folders that contain files. Many graphical user interfaces use the term folder instead of directory.

File – A collection of data or information that has a name, called the filename. Almost all information stored in a computer must be in a file. Examples of various files are (i) data files, (ii) text files, (iii) program files, and (iv) directory files.
Create a File

Creating involves developing the document by entering text or numbers, inserting graphical images, and performing other tasks using an input device such as keyboard, mouse or microphone.

Naming and Saving Data Files

When you use a word processing package to produce a letter or memo, you need to be able to give the document a name. Most people develop their own naming conventions, but if you are using a computer at work, then you should find out if there are any rules or standards in use for naming data files. It is always very useful to develop a logical approach to the organization of data. Here are some guidelines to observe:

- Free up disk space by backing-up
- Create subdirectories on the hard drive or given network drive
- Give files sensible names
- Maintain a commitment to organization
- Compress your data
- Use color-coded floppy disks

ACTIVITY

Ask your learning facilitator to help you to create files.
Ask your facilitator to help you to work out what types of documents you are likely to use and see if you can device sensible naming system for them.

ACTIVITY

With the assistance of your learning facilitator implement a database that contains records (at least 6) on your friends. Such records should include:

- Names (first, middle initial, lastname)
- Address
- Age
- Nickname
- Name of parents

Two of the records must include the following fields: (a) first name – Rachel, (b) first name – Frank.
Name the database “BIRTHDAY”
What Happens When you Save a File?

When you give the command to save, you will first be asked to give your document a filename (unless it has one already). Then the filename that you have typed in will now become your means of contact with that particular document. You may copy, move, drag, rename this document by means of the filename.

There are a number of ways to save a document – by selecting the “Save” or “Save As” option on the File menu bar OR by clicking the “Save” icon on the Standard Toolbar. These methods have become almost universal in most application software.

It is advisable to save your document(s) as you proceed to develop them. This will prevent possible loss due to computer malfunction or loss of electricity.

ACTIVITY

Go to the following site http://home3.americanexpress.com/smallbusiness/resources/managing/organize.shtml#computer for details on the guidelines given above. Discuss with your learning facilitator the development of a standard to guide the organization of files for the members of your class. Work with your learning facilitator to implement this standard.

Data Validation

This is the process of checking data for input errors before being passed on for further processing. It compares data to a set of rules or values to find out if data is correct. Any errors will be printed out on to an error report. Errors can then be checked, corrected and re-entered.

Many programs perform a VALIDITY CHECK that analyzes entered data to help ensure that it is correct. If the entered data fails a validity check, the computer usually displays an error message and asks you to enter the data again.

Validating data enhances its integrity before the program writes the data on disk. Various types of validity checks include alphabetical checks, numerical checks, range checks.
CHECKPOINT

What is the process of comparing data to a set of rules or values to find out if the data is correct called?

ACTIVITY

Ask your facilitator to go through the types of validity checks. Discuss with your colleagues and learning facilitator validation procedures that could be implemented for a word processor, spreadsheet or a database.

Back-up Procedures

To prevent against data loss caused by a system failure, computer users should back up files regularly.

A backup is a duplicate of a file, program, or disk that can be used if the original is lost, damaged or destroyed.

To Backup a File Means to Make a Copy of it

If you are going to make major changes to a document it is important to keep a backup copy. The best way to do this is to call it a slightly different name. If you do make mistakes it means that you can get the original back.

If you are going to make major changes to a document it is important to keep a backup copy. The best way to do this is to call up the document and then save it using a slightly different name. If you do make mistakes it means that you can get the original back.

For example, if you have a document called NCCLET.doc and you want to make changes so:

1. Load the file NCCLET.doc
2. Save it as NCCLET2.doc
3. Make your changes
4. Those will be made to NCCLET2.doc leaving NCCLET.doc as it was when you started.

TIP: Save your backup copies on a media such as tapes, disks and/or CD-ROM
ACTIVITY

Ask your facilitator arrange a visit to the information technology (IT) section of your organization or to an independent IT entity in order to discuss backup procedures employed.

REFERENCE

**ARE YOU READY TO PROVE YOUR COMPETENCY?**

Now that you have completed this element check if you have fully grasped all the components by doing the following self-assessment.

<table>
<thead>
<tr>
<th>Checklist 1</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I can identify types of data for entry</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>2. I can explain the use of input devices for intended operations</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>3. I understand how to manipulate mouse/keyboard</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>4. I understand how to locate create, name and save new files</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>5. I understand how to enter data in appropriate files</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>6. I understand how to back up my files</td>
<td>( )</td>
<td>( )</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Checklist 2</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Data is collected and identified correctly</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>2. Input devices are selected correctly</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>3. Keyboard and mouse are manipulated to achieve specified outcomes</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>4. Files are saved, created, named according to guidelines</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>5. Data is validated according to given procedures</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>6. Back-up copies are made according to guidelines</td>
<td>( )</td>
<td>( )</td>
</tr>
</tbody>
</table>
ELEMENT 3: RETRIEVE DATA

LEARNING OUTCOMES

As you go through this element it will provide you with the knowledge, skills and attitude required to retrieve data. Your learning facilitator is there to assist you through the various activities so on completion you should be able to:

1. Establish the source and identity of the information
2. Obtain where required authority to access data.
3. Locate and access data files.
4. Maintain integrity and confidentially of data.
5. Use approved procedure to retrieve information or relevant reports.
6. Print data.

Many of the information retrieval systems in use are based on DATABASE MANAGEMENT SYSTEMS. These are sets of programs designed to help people to enter, store, and retrieve information. To retrieve or select data in a database, you query it.

Authority to Access Data and Approved Procedure to Retrieve Information or Relevant Reports

The issue of access to data and or information could seem to pertain immediately to situations involving databases. Access privileges may also be applied to a word-processed document as well as to a spreadsheet. One common feature used to limit access to documents is password protection. This may be applied to word-processed documents, spreadsheets and databases.

CHECKPOINT

What are some of the reasons why controlling access to documents may be necessary?
What some of the levels of access that a user could be granted by means of password.

Sometimes, users accidentally delete the data from a database, others misuse the data intentionally. Thus, a database Management System (DMS) provides means to make certain only authorized users can access data at permitted times.
Most Database Management System (DBMS) allow you to identify different levels of access privileges for each field in the database. These access privileges define the activities that a specific user or group of users can perform.

Access privileges for data involve establishing who can enter new data, change existing data, delete unwanted data and retrieve data.

For example, in the movie database, a checkout clerk might have read-only-privileges for movie rating. The clerk could retrieve the movie rating data, but cannot change it. The store manager by contrast would have full-update privileges to movie data, meaning they can retrieve and change the data.

**DBMS**-software that allows you to create, access, and manage a database.

**Maintain Integrity and Confidentiality of Data**

**Data Integrity**

For a computer to produce correct information, the data that is inputted into a database must have integrity. Data integrity is the degree to which data is correct. A misspelled movie title in a movie database is an example of incorrect data. When a data contains these types of errors, it loses integrity.

Garbage in, garbage out (GIGO) is a computer phrase that states you cannot create information from data that is incorrect. If you enter incorrect data into a computer (Garbage in), the computer will produce incorrect information (garbage out). Data integrity is important because computers generate the information that people use to make decisions and take actions.

A good database system includes validation rules and validation text that will alert the user to incorrect data, as well as prevent the addition of such data.

**Confidentiality**

To some extent, protection of data will always be dependent on trustworthiness of the employees, and therefore companies need to be as careful as possible about who they employ. It is important to be informed about laws relating to confidentiality, so that you do not unintentionally disclose information that should be confidential.
CHECKPOINT

Why is data integrity important?
What is GIGO?

REFERENCE


Relevant Reports are Retrieved Using Approved Procedure

A report generator, also called a report writer, allows you to design a report on the screen, retrieve data into report design, and then display or print the report. Report generators are used only to retrieve data. Report generators allow you to format page, numbers, and dates; titles and column headings; fonts, font sizes, color etc.

One of the most popular application software used to generate reports is Microsoft Word.

Printing Data

When you sort or search through a database file you can usually have your results either shown on the screen or printed out.

Printing is the process of sending a file to a printer to generate output on a medium such as paper.

There will be those instances when you only need to look at an individual record, and seeing this on the screen is sufficient. You may need things sorted in a particular way in order or you want a list of particular records, and the output on the screen is satisfactory.

You will also need to produce a hard copy or print-out of the results and so will use the output on the screen to “preview” the results before final printing.

Make sure that, just as for the word processing package, the printer is set up and can understand the commands being sent to it from the database software.
ACTIVITY

Ask your facilitator to assist you with preparing and printing out documents using the different application software.

ARE YOU READY TO PROVE YOUR COMPETENCY?

Now that you have completed this element check if you have fully grasped all the components by doing the following self-assessment.

Checklist 1

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I understand how to retrieve data from established source</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>2. I understand how to obtain data</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>3. I understand how to access and locate data</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>4. I know how to maintain data integrity and confidentiality</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>5. I understand how to print data.</td>
<td>( )</td>
<td>( )</td>
</tr>
</tbody>
</table>

Checklist 2

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Data from established source is retrieved correctly.</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>2. Data is obtained correctly</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>3. Data is accessed and located correctly</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>4. Reports and other documents are printed correctly.</td>
<td>( )</td>
<td>( )</td>
</tr>
</tbody>
</table>
ELEMENT 4: AMEND DATA

LEARNING OUTCOMES

As you go through this element it will provide you with the knowledge, skills and attitude required to amend data. Your learning facilitator is there to assist you through the various activities so on completion you should be able to:

1. Establish source of data/information for amendment.
2. Locate data to be amended in the file
3. Change and delete data entered using appropriate input device
4. Maintain data integrity.

Amending Data

Quite often the details of one or more fields in a database record need to be changed. For example, if you are using the database to store names for your birthday party you will want to alter the names periodically. You will need to locate the data and make the appropriate alterations. Remember to save any changes made.

Make the following alterations to your database file BIRTHDAY (created earlier).

ACTIVITY

- Add ‘Mark A. Barker’ to the list of invitees; make up the details for the address, parents, birthday, nickname records
- Change ‘Rachel’ to ‘Racquel’
- Delete FRANK

REFERENCE

ARE YOU READY TO PROVE YOUR COMPETENCY?

Now that you have completed this element check if you have fully grasped all the components by doing the following self-assessment.

<table>
<thead>
<tr>
<th>Checklist 1</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I know how locate data to be amended</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>2. I know how to enter change and delete data using appropriate</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>3. I know how to use an appropriate input device to change or add data</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>4. I know how to maintain data integrity</td>
<td>( )</td>
<td>( )</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Checklist 2</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Data is located and amended correctly</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>2. Input device used is appropriate</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>3. Data integrity is maintained</td>
<td>( )</td>
<td>( )</td>
</tr>
</tbody>
</table>
ELEMENT 5: USE DOCUMENT LAYOUT AND DATA FORMAT FACILITIES

LEARNING OUTCOMES

As you go through this element it will provide you with the knowledge, skills and attitude required to use document layout and data format facilities. Your learning facilitator is there to assist you through the various activities so on completion you should be able to:

1. Interpret document layout and format
2. Format and layout documents according to specifications given
3. Identify, access and use the facilities to achieve format and layout
4. Manipulate data facilities
5. Identify an accurate and complete document

The format and layout of a given document is dependent upon the specifications that should be met. You may use a host of tools, features and templates in one or a number of applications to prepare a document. Common formatting features include:

- Fonts (size, style, family, colour)
- Paragraph
- Text direction
- Borders and shading
- Tables
- Lettering (uppercase, lowercase)
- Tabs
- Columns
- Bullets and numberings
- Text indents

Most application software provide a number of templates that may also be used to format documents. Desktop publishing software usually carry the greatest number of templates designed for formatting purposes.

ACTIVITY

With the assistance of your learning facilitator explore the templates provided in the application software you have been using. Choose a template from two applications and create two formatted documents. Discuss the formatting features that were applied in the templates.
**ACTIVITY**

Ask your learning facilitator to provide you with either format specifications for a word-processed document as well as for a spreadsheet OR samples of each. Recreate these documents on your computer and discuss your work with your facilitator.

Proficiency in formatting documents will increase over time and so it requires you to practise, learn about the features of the software, researching formatting work done by others and applying your creativity.

**REFERENCE**

3. [http://www.depts.drew.edu/acadtech/docs/desktop/microsoft/Office/Word/XP/editing.htm](http://www.depts.drew.edu/acadtech/docs/desktop/microsoft/Office/Word/XP/editing.htm)
ARE YOU READY TO PROVE YOUR COMPETENCY?

Now that you have completed this element check if you have fully grasped all the components by doing the following self-assessment.

<table>
<thead>
<tr>
<th>Checklist 1</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I can interpret document layout and format</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. I know how to identify, access and use the facilities to achieve format and layout</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. I understand how to manipulate data facilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. I know when document reflects accuracy and completeness</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Checklist 2</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Document layout and format are correctly applied</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Facilities to achieve format and layout are correct</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Data facilities are manipulated correctly</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Document is checked for completeness and accuracy</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
ELEMENT 6: MONITOR THE OPERATION OF EQUIPMENT

LEARNING OUTCOMES

As you go through this element it will provide you with the knowledge, skills and attitude required to monitor the operation of equipment. Your learning facilitator is there to assist you through the various activities so on completion you should be able to:

1. Monitor the system to ensure correct operation of tasks.
2. Interpret routine system messages and refer non-routine messages to appropriate personnel
3. Interpret procedures for dealing with error conditions
4. Monitor output devices and materials

Interpret routine messages that system provides

Any computer system will provide routine messages to the user(s) from time to time as part of the protection mechanism built into the computer system. Routine messages are quite prevalent on network systems because there is a greater level of risk in such an environment as compared to a stand alone system, such as a single computer that is not connected to another. Routine messages are primarily meant to assure the security of the computer system. They may include

- information on printing of documents
- virus protection software updates
- password details update notification
- archiving of files notification

These messages usually appear in dialog boxes and so demand a response from you, after which the system will continue to function.

Other non-routine messages may also be generated by the computer. These include:

- Virus detection notification
- Software malfunction notification
- Disk storage notification
- Read/write privilege notification
- Incorrect password details notification
- Software connectivity notification

These may require the input of persons with higher access privileges as well as more knowledge of the system to make the necessary connections. Increasingly ordinary users are being trained to carry out minor maintenance activities as part of the strategy to lighten the workload of information technology personnel in an organization.
Undertake minor maintenance activities

Some minor maintenance activities that you may undertake include:

- Dust inside your computer
- Do all work on the local hard drive. Copy work that originated on network drives and removable disks onto your hard drive and work on them there; copy back to the source when you are done.
- Shut down properly
- Organize data files
- Archive old things and delete temporary or outdated files for the hard drive
- Check for disk errors
- Empty the following subdirectories frequently:
  - C:\temp;
  - C:\windows\temp;
  - C:\program files\netscape\users\(your name)\cache

CHECKPOINT

Can you think of any other routine messages the computer system generates?

ACTIVITY

Ask your facilitator arrange a visit to the information technology (IT) section of your organization or to an independent IT entity in order to discuss minor maintenance activities that you may undertake.

REFERENCE

http://www.gsd.harvard.edu/inside/computer_resources/manual/your_computer/maintain.htm
ARE YOU READY TO PROVE YOUR COMPETENCY?

Now that you have completed this element check if you have fully grasped all the components by doing the following self-assessment.

### Checklist 1

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I know how to monitor the system to ensure correct operation of tasks.</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>2. I can interpret routine system messages</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>3. I understand how to refer non-routine messages</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>4. I understand the procedures for dealing with error conditions</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>5. I know how to monitor output devices and materials</td>
<td>( )</td>
<td>( )</td>
</tr>
</tbody>
</table>

### Checklist 2

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The system is monitored to ensure correct operation of tasks.</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>2. Routine system messages are promptly and correctly dealt with.</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>3. Non-routine messages are promptly referred in accordance with operating requirements</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>4. Error conditions within level of authority are dealt with promptly, and uncorrected errors are promptly reported</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>5. Output devices and materials are monitored for quality.</td>
<td>( )</td>
<td>( )</td>
</tr>
</tbody>
</table>
ELEMENT 7: ACCESS AND TRANSMIT INFORMATION VIA THE INTERNET

LEARNING OUTCOMES

As you go through this element it will provide you with the knowledge, skills and attitude required to access and transmit information via the Internet. Your learning facilitator is there to assist you through the various activities so on completion you should be able to:

1. Access to the Internet is gained in accordance with the provider’s operating procedures.
2. Evidence of the ability to negotiate web sites to locate and access specified information and other services is efficiently demonstrated.
3. E-Mail is sent and retrieved competently.

INTERNET ACCESS

Network: a collection of computers and devices connected together by communications devices and media.

The world’s largest network is the Internet. The Internet is a worldwide collection of networks that links together millions of business, government agencies, educational institutions and individuals. You can access the Internet for a variety of reasons:

- to send messages to other connected users
- to access wealth of information
- to shop for goods and services
- to meet and converse with people around the world
- for entertainment

Most users connect to the Internet in one of two ways:

a. through an Internet Service Provider, which is a company that supplies connections to the Internet as well as website hosting services.

b. through an On line Service Provider, which also provides internet access, as well as a variety of other specialised content and services such as financial data, hardware and software guides, news and other similar commodities.

How the Internet works

Information sent over the Internet travels by networks and communications channels owned and operated by many companies. Home or small business users often connect to the Internet through a dial-up access. With dial-up-access you can use either a computer or a modem and a regular telephone line to dial into an Internet Service Provider or Online service Provider.
Name two reasons for accessing an Internet.

Research the various methods of connecting to the Internet. Ask the personnel in information technology unit of your organization about the method used to connect to and distribute the Internet. Ask your facilitator to assist you practise gaining access to the Internet.

Access to Internet is gained in accordance with the provider’s operating procedures.

Two of the most popular services provided by the Internet are

Information access:

Accessing information on the Internet, also known as *surfing the Internet*, is achieved use of an application software called a browser as shown in the diagram). This software comes as a part of operating system and the icon that represents it is usually found on the desktop. Among the many Internet browsers available, the two most popular ones are 1) Microsoft Internet Explorer, 2) Netscape Navigator. The icons look like the following:
Go to your desktop and look for one of these icons, and if necessary ask your learning facilitator for assistance.

Double click on the icon – this should open the browser and your desktop should look somewhat like the browser diagram above. NB There may be something other than the site designated http://www.yahoo.com on display.

The browser has now ushered you into what is known as cyberspace. All documents in this space are located at websites and each website has a unique address called a Universal Resource Locator (URL). The Yahoo site, for example, in the browser diagram above has URL http://www.yahoo.com. The browser provides an Address bar in which you can type the particular URL and the browser will seek to locate the site wherever it is in cyberspace.

What if you do not know the particular website that has the information you need but just has a strong suspicion that it exists?

Search engines exist to assist you to search for such websites and Yahoo is one of such search engines. Some of the popular search engines are:

- Yahoo
- Google
- Alta Vista
- AOL
- MSN
- Hotbot

**CHECKPOINT**

What is cyberspace? I what ways does it seem similar to a spider’s web.

**ACTIVITY**

Open the browser and spend some time exploring the toolbars and pull-down menus provided. Discuss with your learning facilitator the application of these functions. Type http://yahoo.com in the Address bar and press the “ENTER” key on the keyboard.

Ask your learning facilitator to assist you to conduct a search on “search engines” using Yahoo. Apply search techniques to make the search results more meaningful.
Email—Electronic Mail

**Email** - is the transmission of messages and files via a computer network.

You can create, send, receive, forward, store, print and delete messages using an e-mail program. Most search engines and Internet Service Providers provide email service.

**How to send an e-mail message**

1. Start an email program and point to the New Mail Message button.
2. Click the New Mail Message button to display the Message window.
3. Enter the recipient’s e-mail address, the subject, and the message in the Message window.
4. Click the insert file button to attach a JPEG file containing a picture to the message. Locate the file on your hard disk and click its name. An icon for the file displays the message. Click the Send button to send the message.
5. When Sally receives the e-mail message, she opens the JPEG file to view the picture. (Illustration below-diagram C)

NB. The steps may be somewhat different with your email provider. You are being advised to consult the help feature in the software, as well as your colleagues and learning facilitator to master the steps in composing, sending and receiving mail.

In addition to the actual messages there are also
- techniques in managing address of contacts to improve their accessibility for use.
- techniques in protecting your account from unwanted messages, also known as *spam* mail.

**ACTIVITY**

Ask your learning facilitator to give you more practice in sending e-mail.

**REFERENCE**

ARE YOU READY TO PROVE YOUR COMPETENCY?

Now that you have completed this element check if you have fully grasped all the components by doing the following self-assessment.

<table>
<thead>
<tr>
<th>Checklist 1</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I understand how to access the Internet</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>2. I understand how locate websites</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>3. I understand how to send and retrieve email</td>
<td>( )</td>
<td>( )</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Checklist 2</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Internet is accessed correctly.</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>2. Websites are located correctly and as quickly as possible</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>3. Email is sent and retrieved competently.</td>
<td>( )</td>
<td>( )</td>
</tr>
</tbody>
</table>
ELEMENT 8:  CLOSE DOWN COMPUTER SYSTEM

LEARNING OUTCOMES

As you go through this element it will provide you with the knowledge, skills and attitude required to close down computer system. Your learning facilitator is there to assist you through the various activities so on completion you should be able to:

1. Shut down the computer following the correct sequence
2. Demonstrate safety and protective procedures in shutting down
3. Identify and report problems in shutting down

Shut Down Computer

Using the mouse

An important thing to remember when working with computers, you should NEVER just switch your computer off by pressing the power button. Doing so can not only damage the computer, you may also loose any work you have just done. As with switching on, the way to close down the computer is very similar for most machines.

CHECKPOINT

What is meant by “closing down” a computer or computer system?

ACTIVITY

1. Research and the steps you take to close down your computer when using the mouse; discuss these with your learning facilitator.
2. Prepare a chart could be used by a user to properly close down the computer using the mouse.
Using the keyboard

If you are using the keys on the keyboard to move around your computer instead of the mouse, you follow the same procedure but in a slightly different way.

**ACTIVITY**

1. Research and the steps you take to close down your computer when using the keyboard; discuss these with your learning facilitator.
2. Prepare a chart could be used by a user to properly close down the computer using the keyboard.

**Turning Your Computer Off**

Always follow the closing down procedure

1. Save any files you have open to the hard disk, save any important files also to a floppy keep backups; if your hard disk fails you have absolutely no recourse if you do no have on floppy disk.
2. Make sure to quite any programs that you may have open, exit each program correctly.
3. Make sure there is a message telling you that it is safe to turn off your computer
4. Then turn it off and then turn off all the peripherals, e.g. Printer, modem, and screen., speakers.

**If your computer “Crashes” or Freezes up**

Usually, you realize that your system has crashed when you cannot move the mouse or you do not get a response from your keyboard. When this happens, only turn off your computer as a very last resort.

1. First try pressing down the Ctrl, Alt and Del keys at the same time, this will bring up an or it will warn you that the computer is busy and to wait.
2. If this does not work then press the Reset button on the front of the computer.
3. If you do not have a reset button then you will have to turn off your computer. However, completely wind down, you will hear it power down, then wait 60 seconds.

**ACTIVITY**

Allow your learning facilitator to give you practice in closing down your computer.
CHECKPOINT

What is an important thing that you should never do in shutting down your computer and why?

ARE YOU READY TO PROVE YOUR COMPETENCY?

Now that you have completed this element check if you have fully grasped all the components by doing the following self-assessment.

<table>
<thead>
<tr>
<th>Checklist 1</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I know how to shut down the computer</td>
<td>(   )</td>
<td>(   )</td>
</tr>
<tr>
<td>2. I know when there is a problem in shutting down</td>
<td>(   )</td>
<td>(   )</td>
</tr>
<tr>
<td>3. I am aware of safety and protective procedures</td>
<td>(   )</td>
<td>(   )</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Checklist 2</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Computer is shut down correctly</td>
<td>(   )</td>
<td>(   )</td>
</tr>
<tr>
<td>2. Aware of computer problems</td>
<td>(   )</td>
<td>(   )</td>
</tr>
<tr>
<td>3. Safety and protective procedures are consistently observed</td>
<td>(   )</td>
<td>(   )</td>
</tr>
</tbody>
</table>
ELEMENT 9: MAINTAIN COMPUTER EQUIPMENT

LEARNING OUTCOMES

As you go through this element it will provide you with the knowledge, skills and attitude required to maintain computer equipment. Your learning facilitator is there to assist you through the various activities so on completion you should be able to:

1. Cleaning materials/solutions used meet specified recommendation
2. You clean equipment as directed
3. You report wear and faults promptly to appropriate personnel.

MAINTAINING YOUR COMPUTER

Keeping your computer in the best condition does more than give you room for more files. Unfortunately just deleting unused files isn’t enough to keep your computer happy.

With routine and simple maintenance, your computer will be faster and more reliable. To keep your computer in prime condition regular maintenance is required. Regular scanning and defragmenting of your computer is good for your hard drive.

Dusting inside your computer

If you have a computer, you have dust. Some computers have more dust than others; this depends on the environment. Computers used by smokers tend to have more dust as well. Below is a picture that shows just how dirty your computer can get.

The best way to keep your computer free of dust is to get a can of compressed air, open your computer’s case, and start spraying. We recommend that you do this outside if possible. You may want to pick out any larger “clumps” before you start spraying. Doing this once or twice a year can prolong the life of your computer.

Make sure you pay special attention to various fans in the computer as these are to cool the computer. You should not need to remove or disassemble anything. If you need help and would like someone to show you how to do this, feel free to ask your learning facilitator.
ARE YOU READY TO PROVE YOUR COMPETENCY?

Now that you have completed this element check if you have fully grasped all the components by doing the following self-assessment.

<table>
<thead>
<tr>
<th>Checklist 1</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I know how to maintain computer equipment</td>
<td>(  )</td>
<td>(  )</td>
</tr>
<tr>
<td>2. I know how to clean the computer equipment</td>
<td>(  )</td>
<td>(  )</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Checklist 2</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Equipment is correctly maintained</td>
<td>(  )</td>
<td>(  )</td>
</tr>
<tr>
<td>2. Equipment is correctly cleaned</td>
<td>(  )</td>
<td>(  )</td>
</tr>
</tbody>
</table>