Experiment # 10

**Connecting and interacting with I/O devices attached to the system**

**Objective**

* + - 1. Connecting and installing drivers of I/O devices to be used with the system
      2. Using the device interface to operate them with the attached system

**Theory**

The device used for system input and output includes printer, scanner, fax machine, mouse, keyboard, speakers, camera, monitors, multimedia displays etc. Printer is an output device, which is used to print information on paper. There are two types of printers:

1. Impact Printers
2. Non-Impact Printers

**Impact Printers:** The impact printers print the characters by striking them on the ribbon, which is then pressed on the paper.

Characteristics of Impact Printers are the following:

* Very low consumable costs
* Very noisy
* Useful for bulk printing due to low cost
* There is physical contact with the paper to produce an image

These printers are of two types

* Character printers
* Line printers

**Character Printers**

Character printers are the printers which print one character at a time.

These are further divided into two types:

* Dot Matrix Printer(DMP)
* Daisy Wheel

**Dot Matrix Printer**

In the market one of the most popular printers is Dot Matrix Printer. These printers are popular because of their ease of printing and economical price. Each character printed is in form of pattern of dots and head consists of a Matrix of Pins of size (5\*7, 7\*9, 9\*7 or 9\*9) which comes out to form a character that is why it is called Dot Matrix Printer.

**Advantages**

* Inexpensive
* Widely Used
* Other language characters can be printed

**Disadvantages**

* Slow Speed
* Poor Quality

#### Daisy Wheel

Head is lying on a wheel and pins corresponding to characters are like petals of Daisy (flower name) that is why it is called Daisy Wheel Printer. These printers are generally used for word-processing in offices which require a few letters to be sent here and there with very nice quality.

**Advantages**

* More reliable than DMP
* Better quality
* The fonts of character can be easily changed

**Disadvantages**

* Slower than DMP
* Noisy
* More expensive than DMP

## Non-impact Printers

Non-impact printers print the characters without using ribbon. These printers print a complete page at a time so they are also called as Page Printers.

These printers are of two types

* Laser Printers
* Inkjet Printers

## Characteristics of Non-impact Printers

* Faster than impact printers.
* They are not noisy.
* High quality.
* Support many fonts and different character size.

### Laser Printers

These are non-impact page printers. They use laser lights to produce the dots needed to form the characters to be printed on a page.

**Advantages**

1. Very high speed
2. Very high quality output
3. Give good graphics quality
4. Support many fonts and different character size

**Disadvantages**

* Expensive
* Cannot be used to produce multiple copies of a document in a single printing

### Inkjet Printers

Inkjet printers are non-impact character printers based on a relatively new technology. They print characters by spraying small drops of ink onto paper. Inkjet printers produce high quality output with presentable features.

They make less noise because no hammering is done and these have many styles of printing modes available. Color printing is also possible. Some models of Inkjet printers can produce multiple copies of printing also.

**Advantages**

* High quality printing
* More reliable

**Disadvantages**

* Expensive as cost per page is high
* Slow as compared to laser printer

**Scanners**

The four common scanner types are: Flatbed, Sheet-fed, Handheld, and Drum scanners.

**Flatbed Scanners**

Flatbed scanners are some of the most commonly used scanners as it has both home and office functions. The way they scan documents is that a mechanism rolls under the document to obtain the image. For businesses that have a need for high processing abilities, the flatbed scanner can scan any number of documents with a click of a button.

**Sheet-Fed Scanners**

Sheet-fed is a type of scanner works like a flatbed scanner except that the image is fed through the scanner and moves along the beam to be read rather than the beam moving. This type is not useful for books, but only single sheets. The aforementioned scanner types are the most common types of scanners used in homes and small offices.

**Integrated Scanners**

Integrated scanners are becoming one of the most modern types of scanners when it comes to obtaining images. ATMs feature this type of built-in scanner for check-processing and approval.

**Drum Scanners**

These types of scanners are used mainly for capturing a picture and producing at a very high resolution rate. There are only a few companies that make these scanners, considering the high cost of producing a scanner such as this. It is considered a tremendous upgrade to a regular flatbed scanner.

**Portable Scanners**

Portable scanners are designed to capture text and other data while you are on the go. The scanner is powered by batteries and once you scan the text, the content is stored on the portable scanner. Once you get home, you can transfer the content to a computer. Transferring to your computer is done by using a cable or a wireless connection.

**Lab Tasks**

1. Install the drivers of a printer and a scanner.
2. Write all the steps to scan a document and then print that document with pics.
3. (Online Research)What is fragmentation? Write all steps to do fragmentation on your PC’s.

**Conclusion**

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