Lab#1

**Lab Tasks:**

Q1 Discuss different types of storage mediums?

Q2 What are intel processor generations? Explain the difference between Intel Core i3, i5 and i7 in terms of CPU speed and other difference? (Hint: Use intel website for knowledge)

PERSONAL DESKTOP COMPUTER, HARDWARE COMPONENTS, INSIDE THE CPU CASING

**LAB # 01**



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**CSE102L Computer Programming Lab**

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“On my honor, as student of University of Engineering and Technology, I have neither given nor received unauthorized assistance on this academic work.”

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Q#1: Discuss different types of storage medium?

ANS:

**Storage Definition:**

A storage device is a piece of hardware that is primarily used for storing data. Every desktop computer, laptop, tablet, and smartphone will have some kind of storage device within it, and you can also get attach, external storage drives that can be used across multiple devices.

Importance:

Storage is necessary not just for saving files, but also for running tasks and applications. Any file you create or save on your computer is saved to your computer’s storage device, as are any applications you use, as well as the operating system your computer runs on. As technology has advanced over time, data storage devices have also evolved in a major way. Nowadays, storage devices come in many shapes and sizes, and there are a few different types of storage device that cater to different devices and functions.

TYPES OF STORAGE DEVICES:

1. Random Access Memory (RAM)
2. Hard Disk Drives (HDD) & Solid-State Drives (SSD)
3. Flash memory devices
4. Optical Storage Devices
5. Floppy Disks
6. Cloud storage

1)RAM:

Random Access Memory, or RAM, is the primary storage of a computer. When you’re working on a file on your computer, it will temporarily store data in your RAM. RAM allows you to perform everyday tasks like opening applications, loading webpages, editing a document or playing games, and allows you to quickly jump from one task to another without losing your progress. In essence, the larger the RAM of your computer, the smoother and quicker it is for you to multitask. RAM is a volatile memory, meaning it cannot hold onto information once the system is turned off.

For example, if you copy a block of text, restart your computer, and then attempt to paste that block of text into a document, you’ll find that your computer has forgotten the copied text. This is because it was stored only temporarily in your RAM.

2)HDD AND SDD:

* The hard disk drive (HDD) is the original [hard drive](https://www.dropbox.com/business/resources/what-is-a-hard-drive). These are magnetic storage devices that have been around since the 1950s, though they’ve evolved greatly over time. A hard disk drive is comprised of a stack of spinning metal disks known as platters. Each spinning disk has trillions of tiny fragments that can be magnetized in order to represent bits (1s and 0s in binary code). An actuator arm with a read/write head scans the spinning platters and magnetizes fragments in order to write digital information onto the HDD, or detects magnetic charges to read information from it.
* Solid-state drives emerged far more recently, in the ‘90s. SSDs don’t rely on magnets and disks, instead they use a type of flash memory called NAND. In an SSD, semiconductors store information by changing the electrical current of circuits contained within the drive. This means that unlike HDDs, SSDs don’t require moving parts to operate. Because of this, SSDs not only work faster and smoother than HDDs (HDDs take longer to gather information due to the mechanical nature of their platters and heads), they also generally last longer than HDDs (with so many intricate moving parts, HDDs are vulnerable to damage and wear).

##### 3) Flash memory devices:

##### A flash memory device contains trillions of interconnected flash memory cells that store data. These cells hold millions of transistors that when switched on or off represent 1s and 0s in binary code, allowing a computer to read and write information based on the electrical current of the transistors. Perhaps the most recognizable type of flash memory device is the USB flash drive. Also known as a thumb drive or simply a ”USB," these small, portable storage devices have long been a popular choice for extra computer storage. Before it was quick and easy to share files online, USB-flash drives were basically essential for easily moving files from one device to another.

4) Optical Storage Devices:

CDs, DVDs, and Blu-Ray disks are used for a lot more than just playing music and videos—they also act as storage devices, collectively they’re known as optical storage devices or optical disk media.

CD-ROM, DVD-ROM, and BD-ROM refer to optical storage disks that are read-only, meaning the data written on them is permanent and cannot be removed or overwritten. These are commonly used for software installation programs, but cannot be used as a personal storage device.CD-R, DVD-R, and BD-R format disks are recordable, but cannot be overwritten. Whatever data you save on a blank recordable disk will then be permanently stored on that disk. So, they can store data, but they’re not quite as flexible as other storage devices.

5)FLOPPY DISKS:

While they may mostly obsolete at this point, we can’t discuss storage devices without at least mentioning the humble floppy disk. Floppy disks were the first widely-available portable, removable storage devices. They work in the same way as hard disk drives, although at a much smaller scale. The storage capacity of floppy disks never exceeded 200 MB before CD-RW and flash drives became the favored storage media. The iMac was the first personal computer released without a floppy disk drive, in 1998, and from here the over 30-year reign of the floppy disk very quickly declined.

6)CLOUD STORAGE:

While not exactly a device per se, [cloud storage](https://www.dropbox.com/features/cloud-storage) is the newest and most versatile type of storage for computers. “The cloud” is not one place or object, but rather a huge collection of servers housed in data centers around the world. When you save a document to the cloud, you’re storing it on these servers. Because everything is stored online, cloud storage doesn’t use any of your computer’s secondary storage, allowing you to space. Cloud offers significantly higher storage capacities than USB flash drives and other physical options, saving you from having to sift through each device to get to the file you’re looking for.

Q#2: What are intel processor generations? Explain the difference between Intel Core i3, i5 and i7 in terms of CPU speed and other difference?

ANS: The generation of the processor is the first number after **i9**, **i7**, **i5**, or **i3**. Here are some examples: **Intel Core** Processor **i7**-10710U Processor is 10th generation because the number 10 is listed after **i7**. **Intel Core** Processor **i9**-9900 Processor is 9th generation because the number 9 is listed after **i9**.

Difference between i3, i5 and i7: Typically, the Core i3 series has only dual-core processors, while the Core i5 and Core i7 series have both dual-core and quad-core processors. Intel releases "families" of chipsets, called generations. The current one is the 8th-generation series called Kaby Lake Refresh. Each family, in turn, has its own line of Core i3, Core i5, and Core i7 series of processors.

You can spot which generation a processor belongs to by **the first digit in its four-digit model name**. For example, the Intel Core i3-**8**250 belongs to the **8th** generation. There’s one more complication when picking a processor. The first digit after the dash tells you which generation your processor is from. The higher the number, the newer it is. As of 2018, the latest generation is 8th gen.

For example:

* Core i5-7200U: two cores, maximum speed of 3.1GHz
* Core i5-8250U:  four cores, maximum speed of 3.4GHz.

This makes a difference when choosing a laptop processor, because from the 8th generation onwards, ‘U’ chips now come with four cores instead of two. If you have the choice between a 7th and 8th gen and there’s only a small price difference, picking the newer model is a good choice.