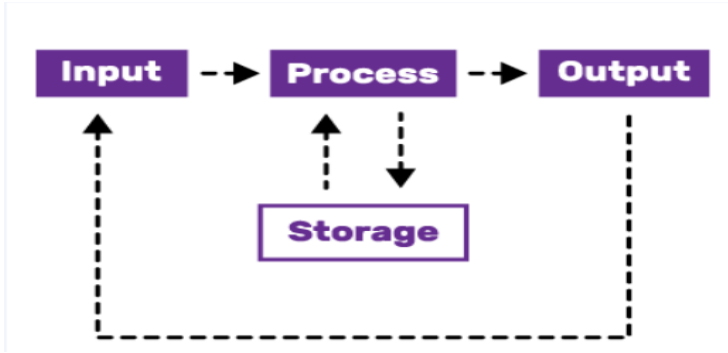
Kemnal Technology College – Computer Science Kemnal Key – Year 9 Term 2

General purpose computers	Devices that have a variety of uses, the user chooses the task for the computer to complete. **Mobile phone** – Lots of apps – Can make phone calls – App selected by the user
Embedded Systems	More specialised, they can only do a limited number of things, but they do them very well. **Coffee maker** – No apps – Very good at making coffee – User cannot change the task it completes.
Hard drive	The hard drive (sometimes called the hard disk) is the main storage device in your computer
ROM	Read-Only Memory ▪ ROM is read-only ▪ ROM is non-volatile memory, which means it does not need power to keep the data inside it ▪ It is also fast
RAM	Random Access Memory • RAM is both readable and writable. You can add, change, and delete data stored in RAM. • It is volatile. Without power all the data stored in RAM is lost.

What is a computer?

A programmable device that takes in data, processes it into useful information, and then outputs the information so it can be used.



What is the purpose of the CPU?

CPU: The CPU is often compared to the human brain. A CPU can be considered an "electronic brain." Unlike the human brain which is made of neurons, the CPU is made up transistors and other electronic component that perform arithmetic and logical calculations

Clock speed: The speed at which as CPU executes instruction is called clock speed. Clock Speed is a fundamental factor of CPU performance and is measured as the number fetch/execute cycle the processor can do in a second.

Cache: The size of the cache has a significant role in CPU performance. The larger the cache, the more space of quickly accessible memory the CPU can utilise

Registers: A processor register (CPU register) is one of a small set of data holding places that are part of the computer processor. A register may hold an instruction, a storage address, or any kind of data

KEMNAL KEY QUESTIONS

1. What is the purpose of the CPU?
2. Explain the difference between general purpose and embedded systems?
3. Explain how the FDE Cycle works?
4. What is the function of the OS?
5. Explain the purpose of the utility software ?

Von Neumann Architecture

- John von Neumann - Mathematician in the 1940s
- Identified that **data and programs** could be stored in the **same memory**
- Only **one set of RAM** required for both data and programs

What is Python programming?

- Python high-level programming language for general-purpose programming.
- Created by Guido van Rossum and first released in 1991.
- Python is friendly and easy to learn for coding