# Difference Between SRAM and DRAM

SRAM and DRAM are the types of RAM. Candidates can also check the **difference between RAM and ROM** here. These topics are an important part of the **GATE CSE syllabus**. Now, let us discuss the difference between SRAM and DRAM provided in the table below.

| **SRAM VS DRAM** | |
|---|---|
| **SRAM** | **DRAM** |
| It can store data as long as electricity is available. | It saves data for as long as the power is on or for a few moments if the power is turned off. |
| Because capacitors aren't utilized, there's no need to refresh. | The contents of the capacitor must be updated on a regular basis in order to store information for a longer amount of time. |
| SRAM has a storage capacity of 1 MB to 16 MB in most cases. | DRAM, which is often found in tablets and smartphones, has a capacity of 1 GB to 2 GB. |
| The storage capacity of SRAM is low. | The storage capacity of DRAM is higher than SRAM. |
| SRAM is more expensive than DRAM. | DRAM is less expensive than SRAM. |
| It is comparatively faster. | It is comparatively slower. |
| The power consumption is minimal, and the access speed is quick. | The cost of production is low, and the memory capacity is higher. |
| SRAM is used in cache memories. | DRAM is used in main memories. |

## What is SRAM?

SRAM stands for static random-access memory. SRAM is a form of random-access memory (RAM) that stores each bit using latching circuitry (flip-flops). It is a volatile memory, which means that data is lost when the power is turned off.

SRAM must be updated on a regular basis. It is quicker and more costly than DRAM, and it is often used for a CPU's cache and internal registers. Transistors retain data and require a steady power supply. SRAM does not need to be updated to recall the data it stores because of the constant power. SRAM is named static because it does not require any changes or actions, such as refreshing, to keep the data intact. It's a type of memory that's employed in caches.

## What is DRAM?

DRAM stands for dynamic random-access memory. It is a form of RAM that allows each bit of data to be stored in its own capacitor within an integrated circuit. It is a kind of computer memory that may be found in any current desktop computer.

DRAM is named dynamic because it requires regular modification or activity, such as refreshing, to keep the data intact. It is employed in the implementation of main memory. Capacitors and a few transistors are used to make DRAM. The capacitor is used to store data in this form of RAM, with a bit value of 1 indicating that the capacitor is charged and a bit value of 0 indicating that the capacitor is discharged.

## Key Differences Between SRAM and DRAM

The key differences between SRAM and DRAM are given below.

- Transistors are used in SRAM to store the data. The data is kept in capacitors in DRAM.
- Transistors are used in SRAM to store the data. The data is kept in capacitors in DRAM.
- SRAM outperforms DRAM in terms of speed and cost.
- DRAM provides more storage capacity than SRAM.
- Cache memory uses SRAMs, whereas main memory uses DRAMs.