EEPROMs generally have one-byte erase capability whereas flash memories only have block-erase capability. Flash memories have much faster write latency than EEPROMs, but take much longer erase times than EEPROMs. Flash memories have higher memory density than EEPROMs. But EEPROMs have much higher endurance (write cycles that it can withstand before going kaput) than flash memories. Flash memories are typically much cheaper than EEPROMs.

Note that, flash memory is, in strict technical sense, just a type of EEPROM. So what is in the previous paragraph is merely what people mean by “EEPROM”, “flash”.

SD cards also use flash memory. But the flash memories used in microcontrollers (like SPI flash chips) use NOR flash whereas SD cards use NAND flash. NOR flash allows byte/word addressing, but NAND flash allows only block reads. Reading from NOR flash is also faster than from NAND flash. On the other hand, writing to NOR can only be done in blocks whereas NAND allows byte/word wise writing. And writing to NOR is slower than writing to NAND. So overall, NOR flashes are meant for program execution, where it is only written to (firmware updates) rarely, whereas NAND flash is used for storage. Note that, when microcontroller uses code from SD card (like Rpi), they typically read entire blocks into RAM and execute code in RAM.

There are some techniques to extend flash lifetime such as wear leveling and overprovisioning. They are sometimes implemented in the drives, sometimes in the file systems.

## References

1. <https://www.techtarget.com/searchstorage/definition/NOR-flash-memory>