**5 – Default size of stack and heap & considerations**

* **Stack (default size):** Around **1 MB** in most systems (depends on OS, compiler, and architecture).
* **Heap (default size):** Much larger — typically limited by available RAM and virtual memory (can be GBs).
* **Considerations:**
  + **Stack:** Faster access, but limited size → large local variables or deep recursion can cause *stack overflow*.
  + **Heap:** Larger and more flexible, but slower access → requires manual memory management (in low-level languages).

**6 – Time complexity**

* **Definition:** A measure of how the runtime of an algorithm grows relative to the input size **n**.
* **Purpose:** Helps compare efficiency of algorithms regardless of hardware.
* **Examples:**
  + **O(1):** Constant time (e.g., array index access)
  + **O(log n):** Logarithmic time (e.g., binary search)
  + **O(n):** Linear time (e.g., simple loop)
  + **O(n²):** Quadratic time (e.g., nested loops)