(1) - (i) Embedded Systems

- **Example**: Washing machines, microwave ovens, car control systems (like ABS).
- **Why C is used**:
    - C provides **direct access to hardware** via pointers.
    - It has **low memory usage** and **fast execution**.
- **Real-world Use Case**:
    - **Automobiles** use C to program **Electronic Control Units (ECUs)** that manage braking, lighting, fuel injection, etc.

(ii) Operating Systems

- **Example**: Windows, Linux, UNIX.
- **Why C is used**:
    - C provides **low-level access to memory and system processes**.
    - It's highly **portable and efficient**.
- **Real-world Use Case**:
    - The **Linux Kernel** is written in C, which manages process scheduling, memory, and device control.

(iii) Game Development

- **Example**: Doom (1993), Quake, and many early console games.
- **Why C is used**:
    - Offers **high performance** and **fine control over memory**.
    - Useful in **game engines** and **graphics processing**.
- **Real-world Use Case**:

- **Game engines** like **id Tech (Quake)** were built using C for performance-critical parts.