**Module 2**

**Introduction to Programming**

1. Research and provide three real-world applications where C programming is extensively used, such as in embedded systems, operating systems, or game development.
2. Embedded Systems :

* C is close to hardware and offers low-level memory access, which makes it ideal for programming microcontrollers and real-time systems.
* Real-World Use: In cars, C is used to control functions like braking, airbags, and engine timing through embedded systems. Ex.. Automotive Control Systems, consumer electronics, medical devices.

1. Operating Systems :

* C provides powerful system-level access and is highly efficient in managing memory and hardware resources.
* Real-World Use: The Linux operating system, which powers everything from servers to Android devices, is written almost entirely in C. ex.. Cloud computing, mobile devices, enterprise IT infrastructure.

1. Game Development :

* C is used for performance-critical components and hardware-level graphics processing via APIs like OpenGL and DirectX.
* Real-World Use: Core game engine mechanics, physics engines, and rendering pipelines often use C for speed and efficiency. Ex.. Entertainment, simulation training, virtual reality.