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

Three Real-World Applications of C Programming

1. Embedded Systems (Example: Home Appliances)
   C is used a lot in devices like washing machines, air conditioners, and microwave ovens. These machines have small chips inside them (called microcontrollers), and the programs written in C help control how they work. It is used because it runs fast and doesn't take much memory. I saw this in one of our labs where we uploaded simple C programs to control LED lights using a microcontroller board.

2. Operating Systems (Example: Linux)
   Big operating systems like Linux are made mostly using C language. C helps in building the base of the system that manages files, memory, and other important parts. It is used because it is close to the hardware and gives good performance. Even Android, which we use in mobile phones, is based on Linux, so in a way, C is also connected to mobile phones.

3. Game Development (Example: Old PC Games)
   Many old games like Doom and Mario were made using C. Even now, game engines sometimes use C for parts that need to be fast, like moving graphics or controlling the player. In our class, we tried making a small Snake game using C, and it was fun to see how the game actually worked step by step.