Physical Memory Emulation Implementation

With the mapping method discussed in the previous slide, the kernel can easily access any content on the physical memory by calculating the offset.

However, for the emulation, there is one challenge. Since the kernel needs to map the physical memory to a very high address, it uses a custom linker script to assign the predetermined address at linking time. Hence, our **text**, **bss** as well as the **data** section will also be assigned those high virtual addresses. But this will not work on Linux as the Linux kernel doesn't allow us to use those high virtual memory areas.

To solve this we are going to map a shared memory in the kernel emulator address space, and use this as a 1:1 mapping to the emulated physical memory.