GitHub: <https://github.com/TingjiaZhang/cmpe283.git>

Step 1: download the file given on Canvas

Step 2: download VMware Workstation and Ubuntu

Step 3: create a VM machine and configure

Step 4: open the given file cmpe283-1.c

Step 5: download the vim to compile the given file.

Step 6: As the given code #define IA32\_VMX\_PINBASED\_CTLS 0x481, do the same call declarations. Table

Description automatically generated

Step 7:As the given code :

struct capability\_info pinbased[5] =

{

{ 0, "External Interrupt Exiting" },

{ 3, "NMI Exiting" },

{ 5, "Virtual NMIs" },

{ 6, "Activate VMX Preemption Timer" },

{ 7, "Process Posted Interrupts" }

};

Search on SDM volume 3 for the rest of 4: <https://www.intel.com/content/dam/www/public/us/en/documents/manuals/64-ia-32-architectures-software-developer-vol-3c-part-3-manual.pdf>

Table

Description automatically generated

Finish the rest table.

Step 8: As the given code ,complete the functions with filling other four.

detect\_vmx\_features(void)

{

uint32\_t lo, hi;

/\* Pinbased controls \*/

rdmsr(IA32\_VMX\_PINBASED\_CTLS, lo, hi);

pr\_info("Pinbased Controls MSR: 0x%llx\n",

(uint64\_t)(lo | (uint64\_t)hi << 32));

report\_capability(pinbased, 5, lo, hi);

}

Step 9: run the C code, and a default file named cmpe283-1.ko should be automatically generated.

Step 10: insmod ./cmpe283-1.ko