1. For each member in your team, provide 1 paragraph detailing what parts of the lab that member implemented / researched. (You may skip this question if you are doing the lab by yourself).

I did this assignment by myself:

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2. Describe in detail the steps you used to complete the assignment. Consider your reader to be someone skilled in software development but otherwise unfamiliar with the assignment. Good answers to this question will be recipes that someone can follow to reproduce your development steps.  
Note: I may decide to follow these instructions for random assignments, so you should make sure they are accurate.

Step1: build the linux kernel successfully:

Using git to download linux code;

Install related tools;

Change the config file using command: make oldconfig;

Using this command to build: sudo make -j 2 modules && sudo make -j 2 && sudo make modules\_install && sudo make install;

Reboot and show the version result using command: uname -a;

Result is:

“Linux example-nested-vm 5.12.0-rc6+ #1 SMP Sun Apr 25 19:55:28 UTC 2021 x86\_64 GNU/Linux”;

Step2: coding(adding new features):

Modify the cupid.c file under /linux/arch/x86/kvm, add leaf function(When eax is 0x4fffffff)

Counting the number and time length in vmx.c under /linux/arch/x86/kvm/vmx

Step3: writing test file:

Using this function to get eax-edx info:

Set the eax equal 0x4FFFFFFF, and get the related information in cpuid.c.

3. Comment on the frequency of exits – does the number of exits increase at a stable rate? Or are there more exits performed during certain VM operations? Approximately how many exits does a full VM boot entail?