Theory Assignment – 1

Installation process for *xv6*

You can find the *xv6* source code attached herewith.

To run the xv6 source code, you have to do the following:

● Install *qemu*
● unzip the attached *xv6*
● enter into the *xv6* directory, and run the following command
● ***make***
● ***make clean qemu***

You need to prepare a group of maximum size 11 and do the following assignment.

For each question you need to submit the steps and file where you have changed and what you have changed. You have to also upload the screen shot of the output.

Deadline : *15ᵗʰ Feb 2022*

Implement the following system calls in xv6 OS

1. Create a system call called getppid() and create a command called "***prd***" where you need to display the process-id along with parent process-id. (***use the help of getpid***)

2. Create a ***ps*** command that will display the following. You need to prepare a system call called sps(system processes) that will provide the following information.

    PID, PPID, Process name, process state

    then you try to display the following

    Your roll no, PID, PPID, Process name, process state, process creation time, size of process memory

3. Create a ***cal*** command with different options as specified in Unix manual.

4. Create a system call called *"**waitpid(int pid)**"* which will wait for specific child as passed as parameter to this system call. Write a program to test this system call. If one pass the pid as 0 then it will wait for all its child. **This will return how many child processes a parent could wait plus your roll no**.