Assignment-4
CS-343
Operating System Lab.

Instructions:

- This is a video assignment that has to be done by every student individually. The idea behind this assignment is to use your understanding of xv6 and use it for improving the capabilities of this toy OS and for testing the level of your critical thinking skills with respect to operating systems research.

- You had by now studied the xv6 operating system and worked on various modules of it such as adding new system calls, improving the console, process scheduling, and memory management. Now, you are required to do a case study where you will compare one of the management components of xv6 with the same component of modern operating systems like Windows OS or Linux OS.

- For this purpose, you are required to study the related content from the xv6 book: (https://pdos.csail.mit.edu/6.828/2018/xv6/book-rev11.pdf, https://pdos.csail.mit.edu/6.828/2020/xv6/book-riscv-rev1.pdf)

  and find at-least two of the missing features of xv6 that can be added into it (from implementation point of view) by inheriting it from Windows/Linux OS.

- After you find those missing features, you are required to present a strategy to explain that how you will be implementing that particular feature in xv6 code. For this part, you can refer to xv6 code files and propose any new data structure, system calls or kernel processes of your own to implement that particular feature.

- You have to explain the implementation details of your proposed feature in-depth, such that if someone wants to add that feature into xv6 in future, he/she can directly start with the study performed by you and implement it in xv6 following the instruction in your report.

- Students will have to submit a detailed report with a complete explanation (there should be no code in the report, but just a code-level guide to implementation), a short ppt, and a video presentation of yours explaining it.

- Video presentation should not cross 10-minutes, you can use the following time divisions for reference while making your video ppt:
  - 2-minutes for comparing the given component of xv6 and in the referenced OS.
  - 3-minutes for explaining the missing features and your plan for its implementation.
  - 5-minutes for explaining in detail the code (new data structures, kernel processes, or system calls) that you need to add to implement the proposed new OS features and for explaining the flow of it.

- Please find your topic allocation in the other file attached.

----------End-of-Assignment----------