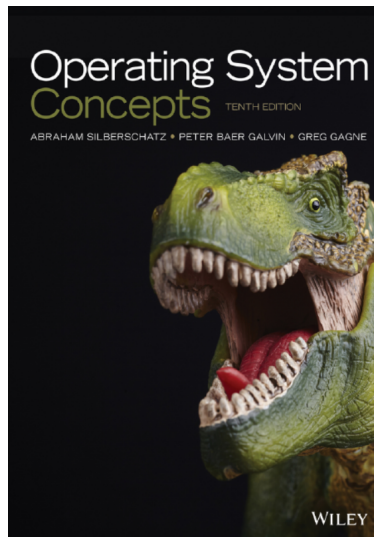# Assignment 3

Please complete a report.

The documents to be submitted for this assignment are:

- report.pdf

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1. 1. **[20 pts]** Read Chapter 2 of "Three Easy Pieces" (https://pages.cs.wisc.edu/~remzi/OSTEP/intro.pdf). Answer the following questions:
   (1) What are the "three easy pieces" of operating systems? Explain each of them with your own words.
   (2) How do these "three easy pieces" map to the chapters in the "dinosaur book"?

   2. **[20 pts]** Read Chapter 6 of "Three Easy Pieces" (https://pages.cs.wisc.edu/~remzi/OSTEP/cpu-mechanisms.pdf) and explain what happens during **context switch** in detail?

   3. **[20 pts]** Read slides "L03 Processes I" and "L04 Processes II" and answer the following questions:
   (1) Explain what happens when the kernel handles the fork() system call (hint: your answer should include the system call mechanism, PCB, address space, CPU scheduler, context switch, return values of the system call).
   (2) Explain what happens when the kernel handles the exit() system call (hint: your answer should include discussion on the zombie state and how it is related to the wait() system call).

   4. **[20 pts]** What are the three methods of transferring the control of the CPU from a user process to OS kernel? Compare them in detail.

   5. **[20 pts]** Describe the life cycle of a process (hint: explain the reasons for process state transitions).