CS 303 – Lab 4
September 13, 2019
Maximum Points: 25

Note:

- The answers for questions 1 and 2 need to be shown to the TAs in the lab in order to get credit.
- The take home question 3 is due by 11:00 PM, Monday, September 23, 2019 on Moodle.

Q1. (in lab question, 2 points): Type and execute the pipes program covered in class. This program is available on Moodle under the heading "*Unix pipe program*". Go through the program carefully, and make sure you understand it. In case of any questions, please contact the TAs in the lab.

Q2. (in lab question, 8 points): Design a program using pipes in which one process sends a string message to a second process, and the second process reverses the case of each character in the message and sends it back to the first process. For example, if the first process sends the message "Hi There!", the second process will return "hI tHERE!". This will require using two pipes, one for sending the original message from the first to the second process and the other for sending the modified message from the second to the first process. Write this program using UNIX pipes. If a character in the string is non alphabetic, output that character as is, with no change. Add suitable error checking to your program.

Q3. (take home question, 15 points): Do the programming Project number 1 of chapter-3 of the textbook - "Operating System Concepts by Silberschatz, Gagne and Galvin**, Ninth Edition**". This project is called "UNIX shell and history feature". Read all the instructions carefully. This program is due at 11 PM, Monday, September23, 2019. Submit only on Moodle.