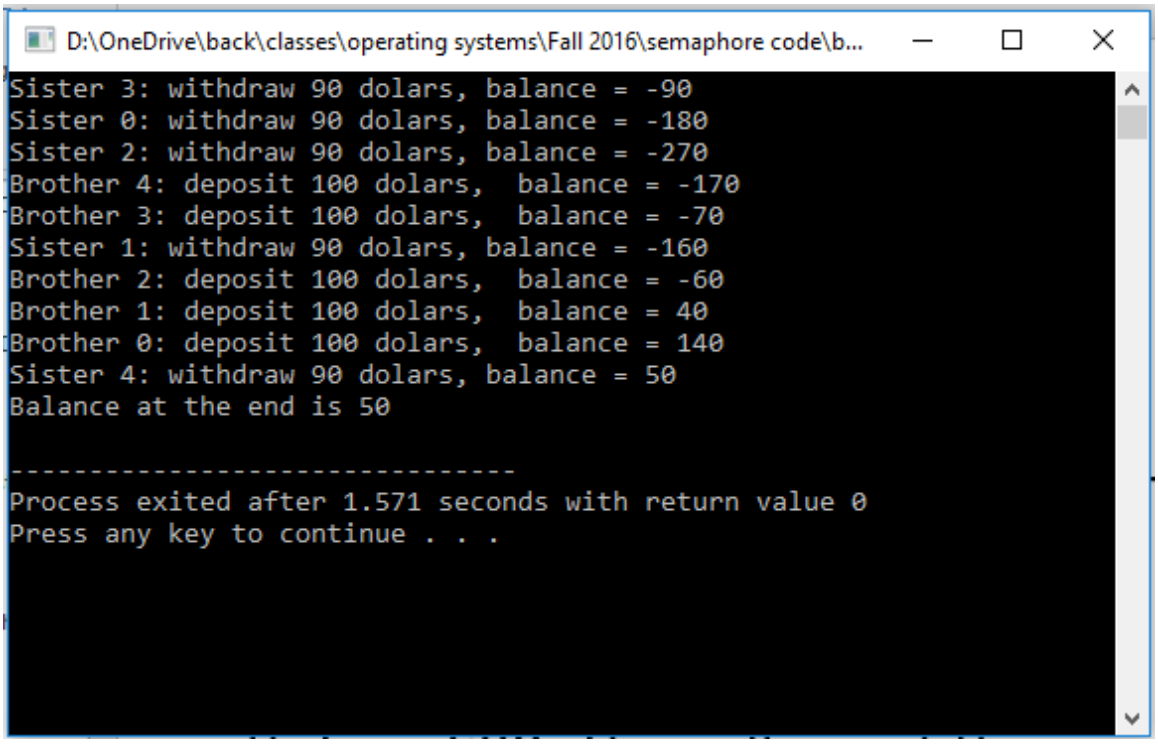
OPERATING SYSTEMS – COMP 3318 – FALL 2016

Homework #4

Due on December 04, 11:59pm

1) Michael has 5 brothers and 5 sisters. They all share the same account and they all have a copy of the debit card so that all of them can use ATM to deposit or withdraw money. One day Michael drives all his siblings to a bank with a van which has n number of ATMs. Michaels brothers will deposit $100 and his sisters will withdraw $90. They all insert their card start their transaction.

A) As a programmer fix the attached code to prevent the race condition, using semaphores (Hint: you just need to wrap critical region by using two semaphore operations appropriately sem_wait(&account); and sem_post(&account);. Don't make any changes in any other part of the code just add wait (P) and post(V) operations) So that balance at the end is always $50 as supposed to be) Save it as prog1.c. upload to moodle



B) You also need to add an overdraft protection to the code, so if the balance is not enough sisters must wait. Save it as prog2.c. upload to moodle.