CS 345 HW #2

1. ABCDE | ABDCE | ABDEC | ADBCE | ADBEC | ADEBC | DABCE | DABEC | DAEBC
DEABC

2A. A WEB BROWSER CAN BE RUNNING MULTIPLE TABS, MAYBE THINGS LIKE PLUGINS OR EXTENSIONS, WHICH WOULD BENEFIT FROM MULTITHREADING.

B. AUTOSAVING, PRINTING, SPELLCHECK CAN RUN SIMULTANEOUSLY WITH MT.

C. WITH MULTIPLE CORES, YOU EXPONENTIALLY MULTIPLY THE WORK THAT CAN BE DONE. EACH CORE CAN RUN MULTITHREADED PROCESSES.

D. THE OS WOULD BE MORE RESPONSIVE AND ALLOW FOR FASTER PROGRAM EXECUTION.

3A. PROCESSES/PROGRAMS WON'T FREEZE THE UI OR HANG AS OFTEN.

B. THE PROCESS ISN'T USING ANY MORE RESOURCES, BUT IS ABLE TO DO MORE WORK.

C. ASSUMING THAT ECONOMY MEANS RESOURCE USAGE SUPPLY/DEMAND, BECAUSE PROCESSES CAN DO MORE WORK WITH THE SAME AMOUNT OF RESOURCES, BUT FASTER, THE ECONOMY WILL FLOW BETTER AND BE BETTER ABLE TO KEEP UP WITH DEMAND.

D. SIMILARLY, SINCE THE ECONOMY IS BETTER, IT IS MUCH EASIER TO SCALE THINGS UP BECAUSE THERE WILL BE MORE RESOURCES AVAILABLE.

4A. ONE HAS TO DECIDE WHICH PARTS OF A PROCESS GET TO BE MULTITHREADED, SO THAT IT IS EFFICIENTLY SPLITTING UP THE WORK.

B. I'M GUESSING BALANCE HAS TO DO WITH HOW MUCH WORK EACH THREAD IS DOING, SO IN THAT WAY WE WANT THREADS TO DO ROUGHLY THE SAME AMOUNT OF WORK.

C. WITH DATA DEPENDENCY YOU NEED TO MAINTAIN DATA INTEGRITY, AND ENSURE THAT YOU ARE ACCESSING THE RIGHT PART OF THE DATA.

SWITCH CARD

D. DATA SPLITTING IS ROUGH BECAUSE IF YOURE DOING SOMETHING LIKE READING A FILE, KEEPING THINGS IN THE RIGHT ORDER CAN BE TRICKY.

5A. KERNEL STACK

B. BECAUSE THE COUNT VARIABLE IS CREATED ON THE THREAD STACK, SO EACH THREAD HAS ITS OWN COPY AND THUS WILL INCREMENT ITS OWN COPY SEPARATELY.

C. IT'S TO SAVE THREAD STATE, RETURN THE THREAD STACK TO A CERTAIN PLACE.

D. MY THREAD IS CALLED 4 TIMES, THE VALUE OF CODE IS 2.

E. THE PRINTF STATEMENT.