

# COL 216 MINOR

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## APPROACH OF CODE

- FIRSTLY I MODIFIED MY ASSIGNMENT 3 CODE AND MAKE IT AS DO IN THE OUTPUT FORMAT .
- FIRSTLY, I MAKING THREE CASES EACH FOR THE LOAD AND STORE INSTRUCTIONS
- CASE1: WHEN WE WANT TO STORE/LOAD THE FIRST WORD FROM/ TO THE MEMORY IN THIS CASE WE NEEDED ONE  $ROW\_ACCESS\_DELAY + ONE\ COLUMN\_ACCESS\_DELAY$ . AND THEN PRINT THE CYCLE NUMBER AND THE MEMORY ACCESS.
- CASE2: WHEN WE WANT TO STORE/LOAD THE WORD FROM/TO THE MEMORY WHICH OUR ROW BUFFER IS SAME IN THIS CASE WE ONE  $COLUMN\_ACCESS\_DELAY$ . AND THEN PRINT THE CYCLE NUMBER AND THE MEMORY ACCESS.
- CASE3: ALL CASES OTHER THEN THESE WE NEED TO CREATE A NEW ROW BUFFER AND THEN UPDATE VALUE IT TAKES TWO  $ROW\_ACCESS\_DELAY + ONE\ COLUMN\_ACCESS\_DELAY$ .
- ALSO I CAN MODIFY FOR EACH AND EVERY FUNCTION THAT IS EXECUTED BETWEEN THE DRAM OPERATION I DIVE IT INTO TWO MAINS CASES AND THEN IN THESE 3 SUBCASES WHICH ARE GIVEN ABOVE.
- AFTER ALL THESE CASES THEN I MAKE A MAP FROM THE VALUE ADDRESS IN THE MEMORY TO ITS VALUE STORE IN THE MEMORY.
- AFTER THAT I MAKE A ADDITIONAL CONDITION IN LOAD THAT IF THE GIVEN ADDRESS IS STOREING SOME VALUE THEN LOAD THE WORD OTHERWISE PRINT THE ERROR.
- AFTER THIS I FINALLY CHEHCK THE CONDITION THAT IF ANY DRAM COMMAND IS RUNNING AD THEN PRINT IT.
- AFTER ALL THESE THINGS I CAN JUST PRINT THE FINAL STATE VALUES OF THE MEMORY AND TOTAL NUMBER OF CYCLE.

## ASSUMPTIONS MADE IN OUR DESIGN

- NUMBER OF LINES IN THE FILE THAT CONTAINING THE COMMAND ARE LESS THAN 999999.
- ONLY COMMANDS AND THE FUNCTION\_NAME+':' ARE READ AS A CORRECT COMMAND ELSE OTHER COMMAND IS WRONG.
- DON'T GIVE THE INPUT FILE IN WHICH EXECUTION GO FOR INFINITE LOOP IN THIS CASE OUR CODE IS NOT HANDLE.
- DON'T GIVE THE INSTRUCTION OTHER THEN THE FUNCTION NAME AND THE 10 COMMANDS GIVEN IN THE ASSIGNMENTS.
- NOT GIVE THE DIRECT MEMORY ADDRESS TO ANY INSTRUCTION GIVE THE REGISTER OR INSTRUCTION NAME OTHERWISE IT NA SHOW SOME ERROR/WRONG INPUT.
- ONLY ONE DRAM OPERATION AT A TIME.

## TEST CASE AND STRATEGY

- WE TEST THIS CODE FIRSTLY THE TWO TEST CASES GIVEN IN THE ASSIGNMENT.
- 1<sup>ST</sup> TESTCASE IS WORKING FOR ME AND 2<sup>ND</sup> SHOWS ERROR BECAUSE DUE TO ASSUMPTION WE WILL MADE.
- CHECK IT FOR A TEST CASE WHICH CONTAINS ALL THE 10 COMMANDS GIVEN IN THE ASSIGNMENT 3
- CHECK FOR EMPTY FILE
- CHECK IT FOR WRONG INPUT
- CHECKED THE VALUE OF EACH AND EVERY COMMAND AFTER RUNNING THE CODE AND CONFIRM IT BY MANUAL CALCULATIONS