

# COL 216 ASSIGNMENT-3

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## APPROACH OF OUR CODE

- FIRSTLY, WE ARE TAKING INPUT FROM OUR SYSTEM, WHICH IS PATH OF THE TEXT FILE AND AFTER THAT ON EXECUTING WE HAVE TO PROVIDE THE FILE TO OUR OS.
- IF WRONG PATH OF FILE GIVEN AS INPUT THEN WE PRINT THAT THE FILE DOES NOT EXIST ON THIS PATH.
- AFTER THIS WE CAN STORE OUR FILE USING VECTOR AND TOKENIZE IT THEN ALSO HAVE DEFINED A MAP FOR EACH OF THE FUNCTION CALL.
- WE HAVE DEFINED A MAP FOR ALL THE REGISTERS ALSO.
- AFTER THAT WE READ THE VECTOR WHERE WE STORE OUR FILE LINE BY LINE AND REMOVE ALL THE DELIMITERS FROM IT.
- AFTER THAT WE WILL CHECK IF THE TOKEN IS READABLE FOR THE CODE ACCORDING TO THE GIVEN INSTRUCTIONS IN THE ASSIGNMENT OR NOT. IF YES, THEN PROCEED.
- IF THE COMMAND IS NOT AMONG THE 10 COMMANDS GIVEN, THE GIVEN FUNCTION OR OPERATION HAD NOT TO BE PRESENT IN OUR TEXT FILE AND HENCE WE WILL SHOW IT IS A WRONG INPUT.
- IF IT IS ONE AMONG THE OPERATIONS, THEN FIRST WE WILL SEE WHETHER THE OPERATION IS OF RIGHT TYPE AND REGISTERS ARE CORRECT OR NOT. AFTER THAT WE CAN OPERATE ON IT AND STORE/JUMP ACCORDING TO THE GIVEN COMMAND AND AFTER THE OPERATION IS COMPLETED, WE PRINT THE REGISTERS.
- DO THIS UNTIL OUR LAST LINE OF FILE IS READ OR WE REACH AT THE END OF THE FILE.
- IF THE TEXT FILE IS CORRECT AND HAS BEEN READ SUCCESSFULLY THEN FINALLY, WE SHOW THE NO OF TIMES EACH INSTRUCTION IS EXECUTED AND THEN ON ADDING WE GET THE NUMBER OF CYCLES.

## ASSUMPTIONS MADE IN OUR DESIGN

- NUMBER OF LINES IN THE FILE THAT CONTAINS THE COMMAND IS LESS THAN 999999.

- ONLY COMMANDS AND THE FUNCTION'S NAME+ ':' ARE READ AS A CORRECT COMMAND LINE ELSE ANY OTHER COMMAND IS WRONG.
- NEGLECTED THE FILES IN WHICH THERE IS A POSSIBILITY OF INFINITE LOOP.
- WE HAVE ASSUMED THAT EACH COMMAND IS EXECUTED IN ONLY 1 CYCLE AND HENCE CALCULATED THE NUMBER OF CYCLES USING THIS.

## TEST CASE AND STRATEGIES

- WE HAVE TESTED THIS CODE FOR A SIMPLE TEST CASE IN WHICH WE HAVE TAKEN ALL THE INSTRUCTIONS ONLY ONCE.
- TESTED FOR EMPTY FILE CASE AND ALSO WHEN THE PATH GIVEN FOR THE FILE IS WRONG
- TESTED FOR WRONG COMMANDS
- TESTED FOR EXPRESSION OTHER THAN THE GIVEN 10 INSTRUCTIONS.
- TEST IT FOR A FILE WHICH INCLUDES THE COMMENTS.
- CHECKED THE VALUE OF EACH AND EVERY REGISTER AFTER RUNNING THE CODE AND CONFIRMED IT BY MANUAL CALCULATIONS