Final Assessment, Compiler Lab

CSE-0302 Summer 2021

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***Abstract*—ASSIGNMENT-4: Question:Suppose, a given C source program has been scanned, filtered, lexically analyzed and tokenized as that were done in earlier sessions. In addition, line numbers have been assigned to the source code lines for generating proper error messages. As the first step to Syntax Analysis, we now perform detection of simple syntax errors like duplication of tokens except parentheses or braces, unbalanced braces or parentheses problem, unmatched 'else' problem, etc. Duplicate identifier declarations must also be detected with the help of the Symbol Table.**

Screenshot of Code For Assignment 4:(Screenshots are added serially)

ASSIGNMENT-5:

Question:Implement the following grammar in C.

¡stat¿→¡asgn$_s tat >< dscn_s tat >< loop_s tat >< asgn_s tat >$ ß$id =< expn >< expn >$ ß $< smpl_e xpn >< extn >< extn >$ ß $< relop >< smpl_e xpn >$ | $< dcsn_s tat >$ ß$if(< expn >) < stat >< extn1 >< extn1 >$ ß$else < stat >$ | $< loop_s tat >$ ß$while(< expn >) < stat > for(< asgn_s tat >;< expn >;< asgn_s tat >) < stat >< relop >$ ß $==! =<=>=>< Note :< smpl_e xpn > canbeimplementedusingthematerialsdemonstratedinthissession.$

Screenshot of Code For Assignment-5:(Screenshots are added serially)

ASSIGNMENT-6:

Question:Suppose, you are given the following grammar and the input string abcd. You are required to perform the following tasks manually: 1. Find the FIRST and FOLLOW sets of each of the non-terminals. 2. Construct the predictive parsing table for LL(1) method. 3. Demonstrate the moves of the LL(1) parser on the given input. 4. Construct the LR(0) automaton for the grammar. 5. Construct the parsing table for LR(1) parsing with the grammar. 6. Demonstrate the moves of the LR(1) parser on the given input.

Screenshot of Code For Assignment-6:(Screenshots are added serially)

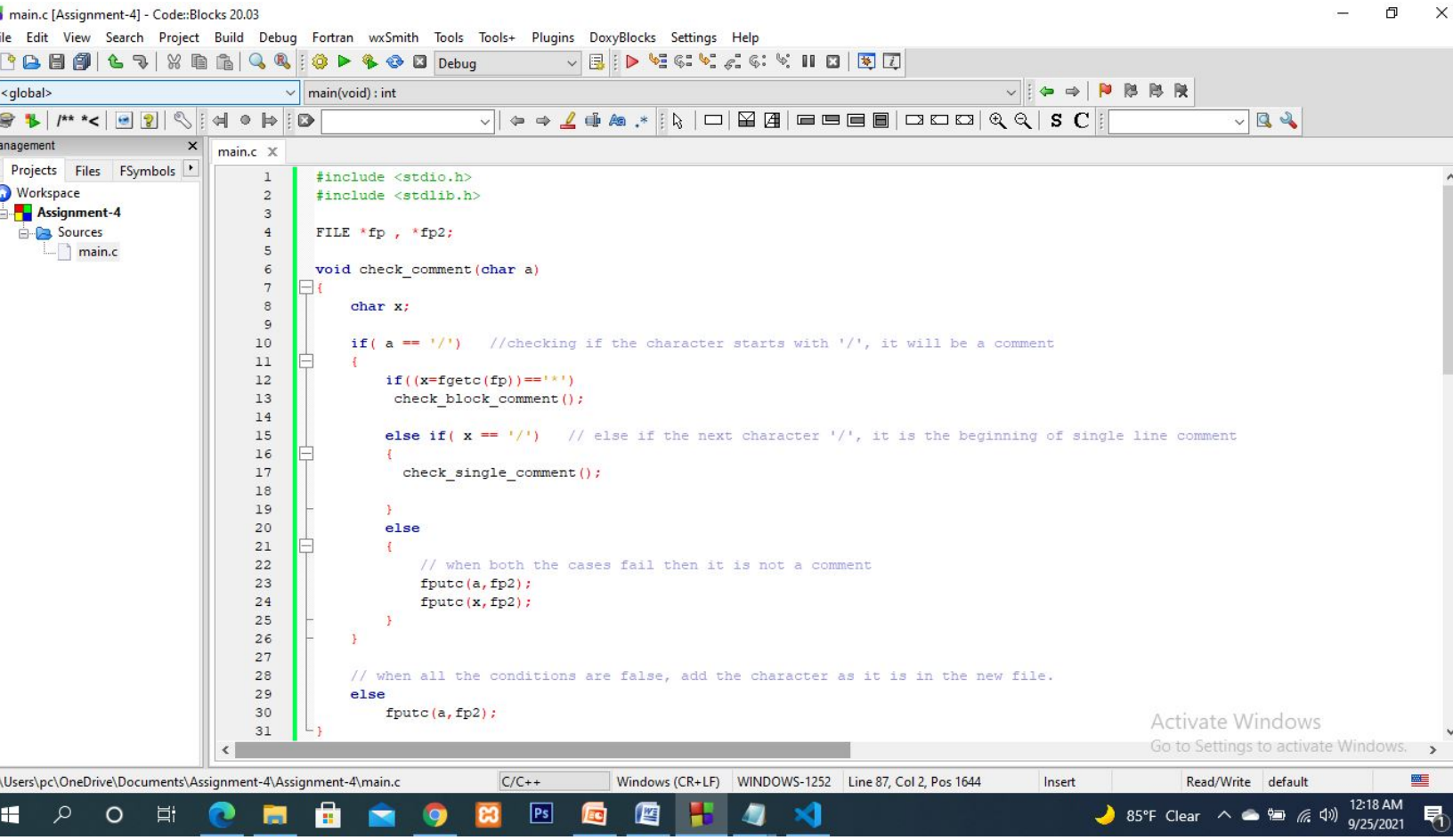


Fig. 1. Assignment-4,ScreenShot-1

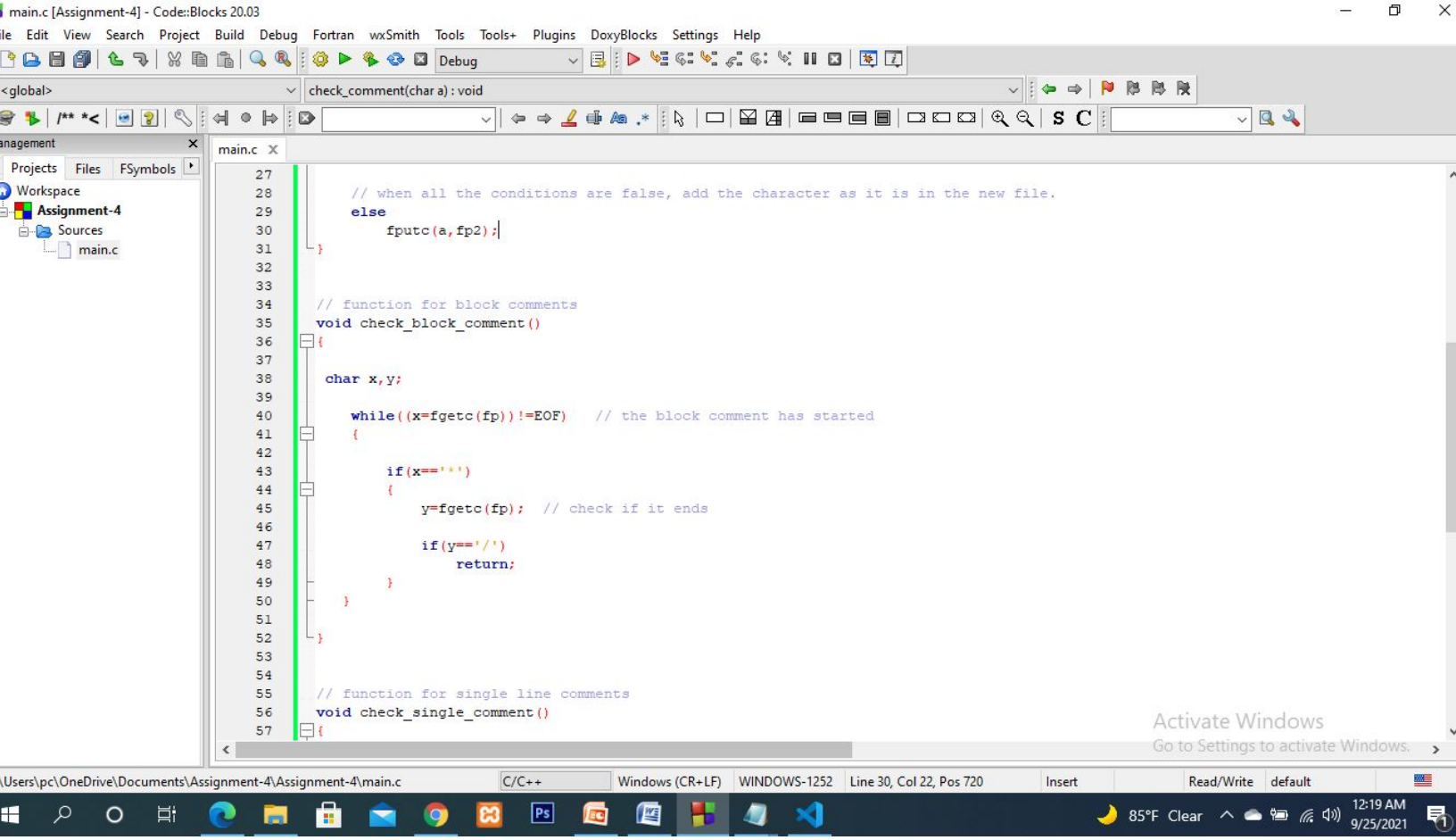


Fig. 2. Assignment-4,ScreenShot-2

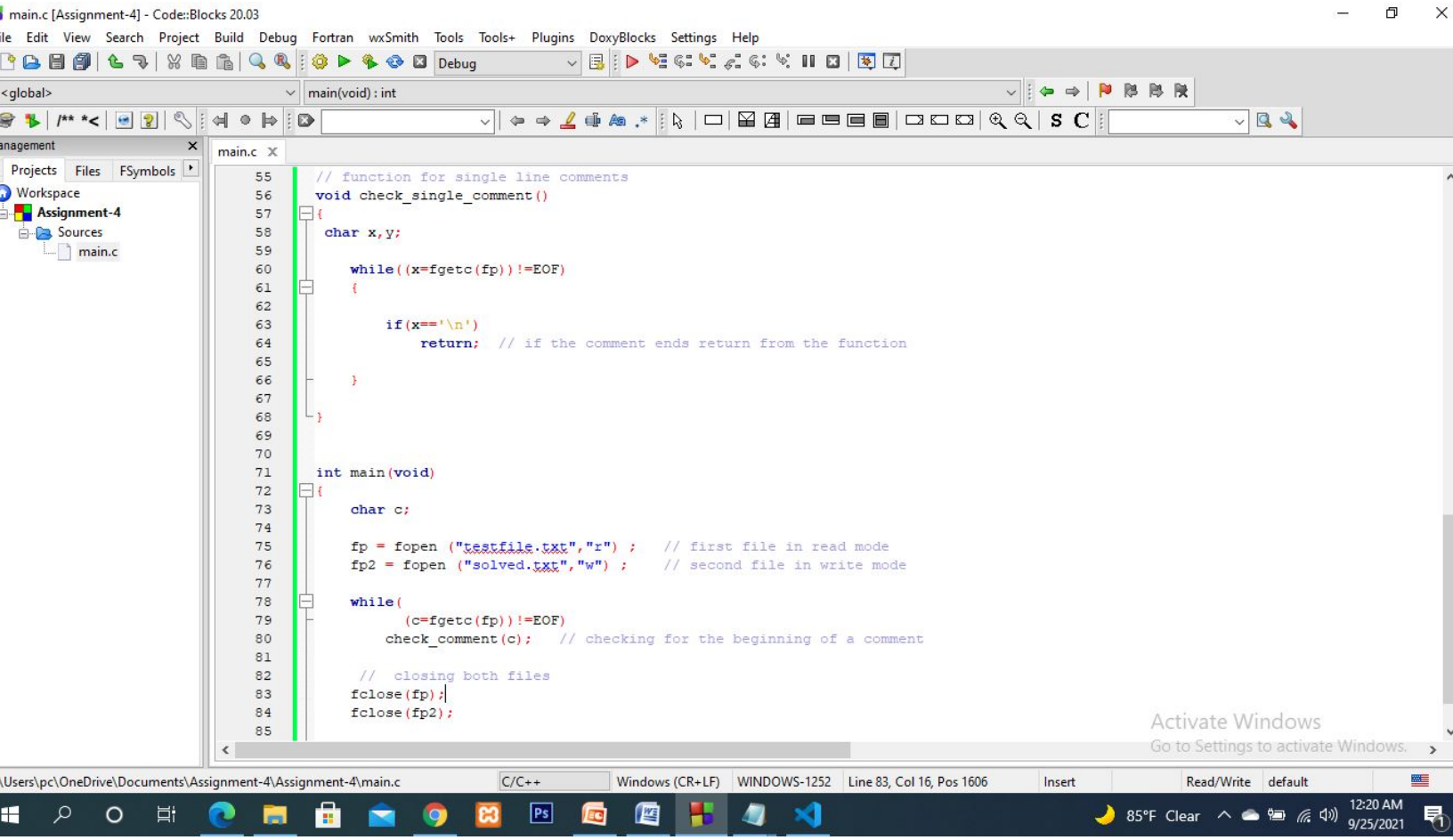


Fig. 3. Assignment-4,ScreenShot-3

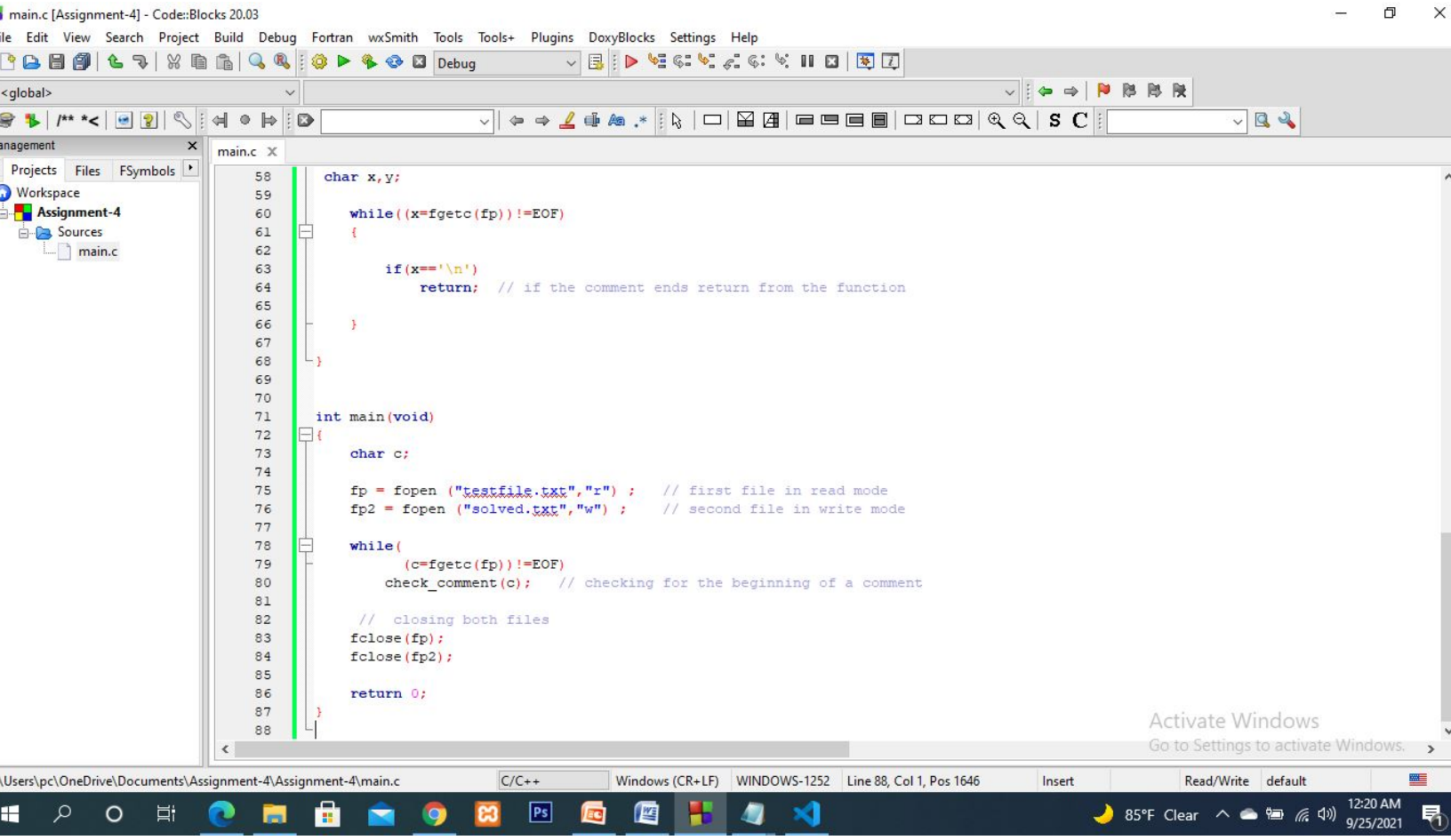


Fig. 4. Assignment-4,ScreenShot-4

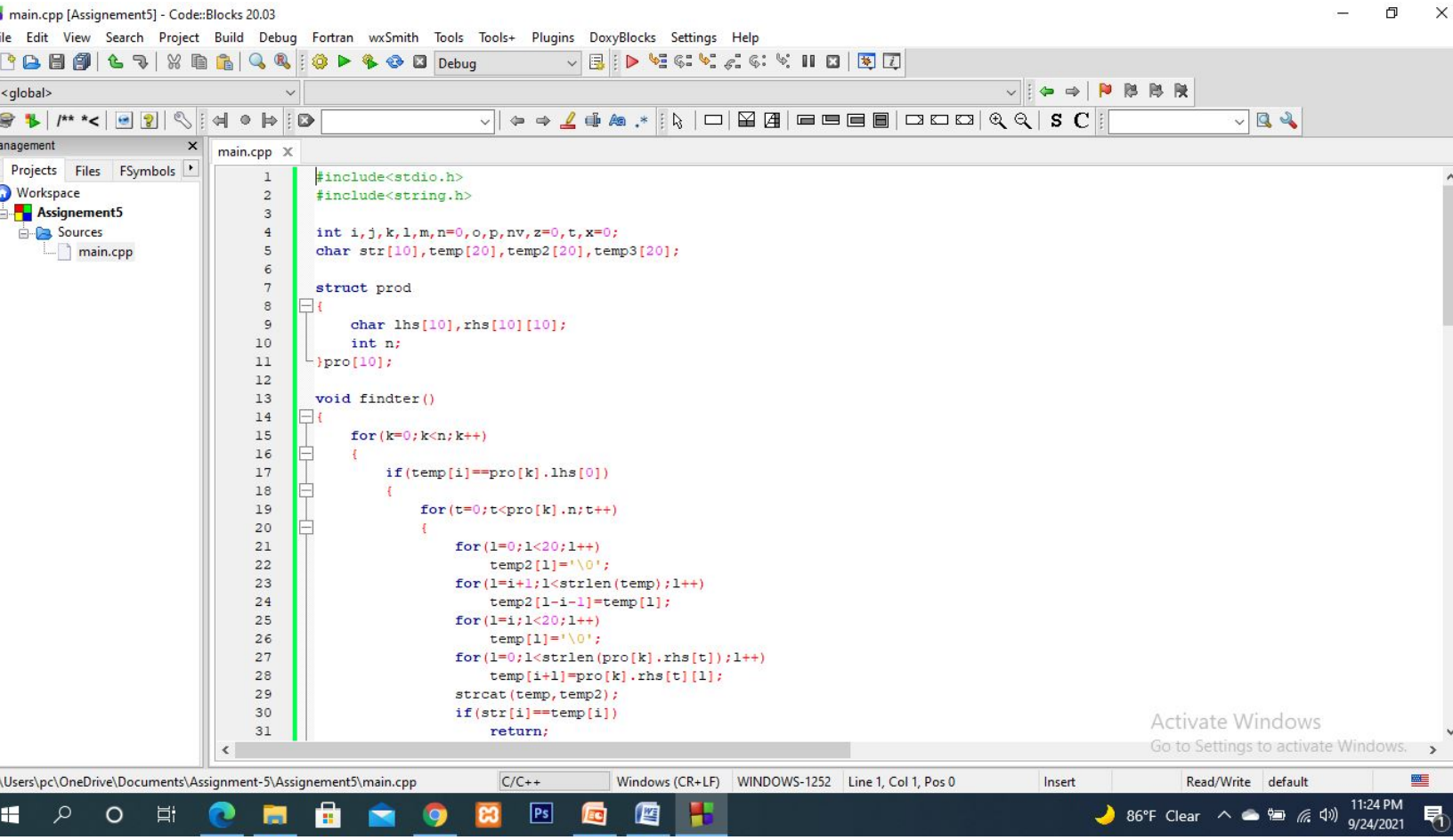


Fig. 5. Assignment-5,ScreenShot-1

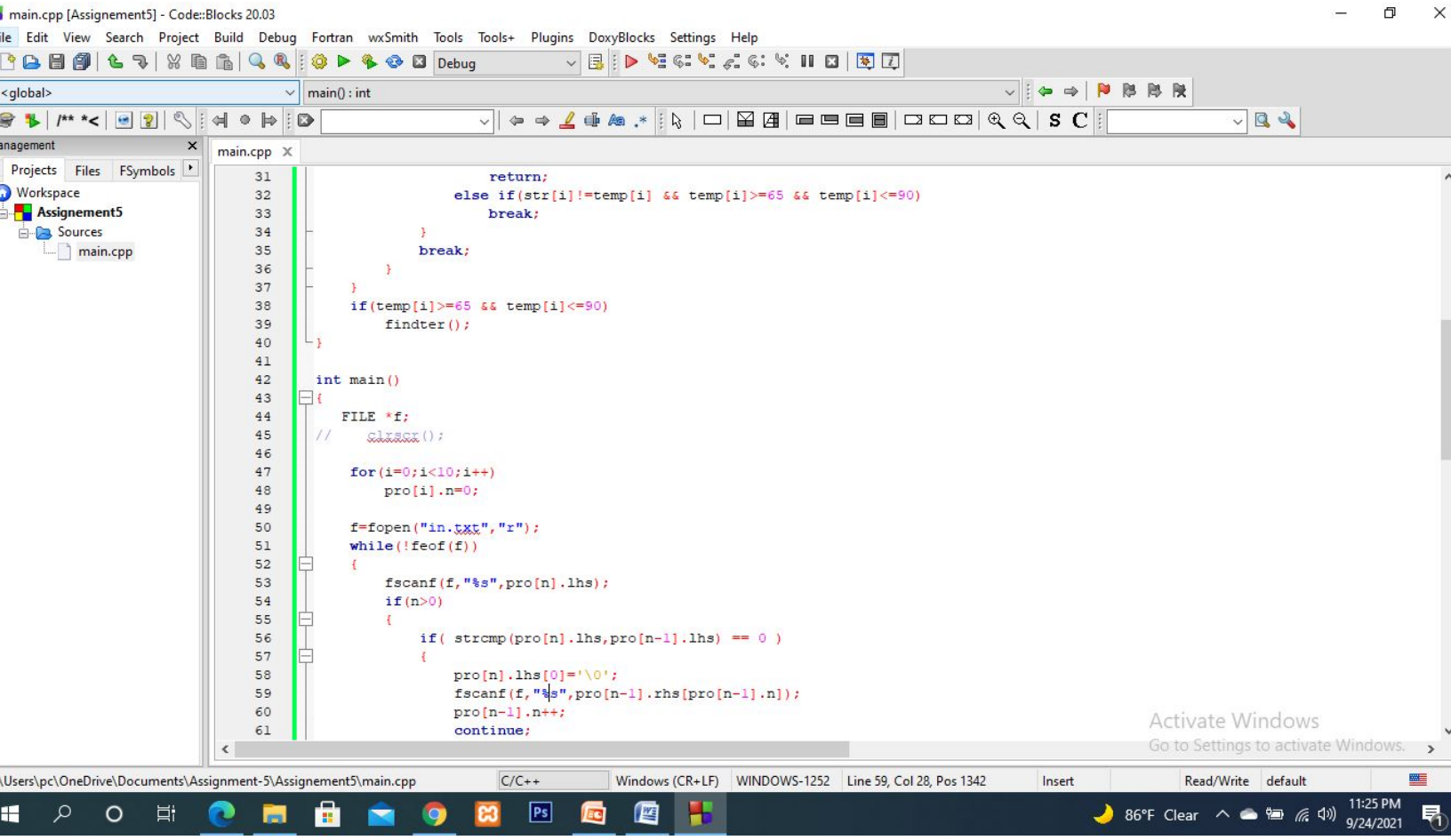


Fig. 6. Assignment-5,ScreenShot-2

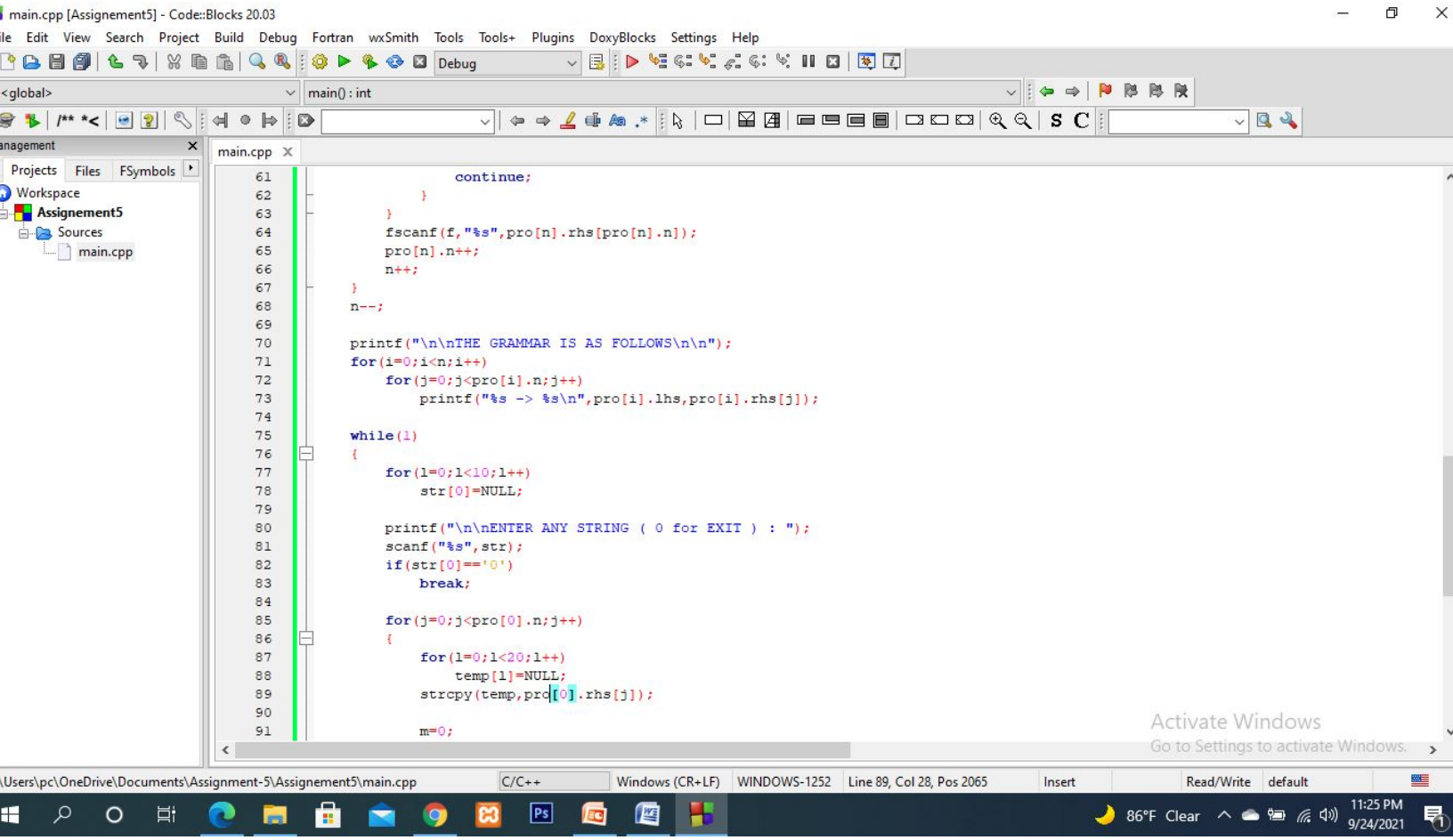


Fig. 7. Assignment-5,ScreenShot-3

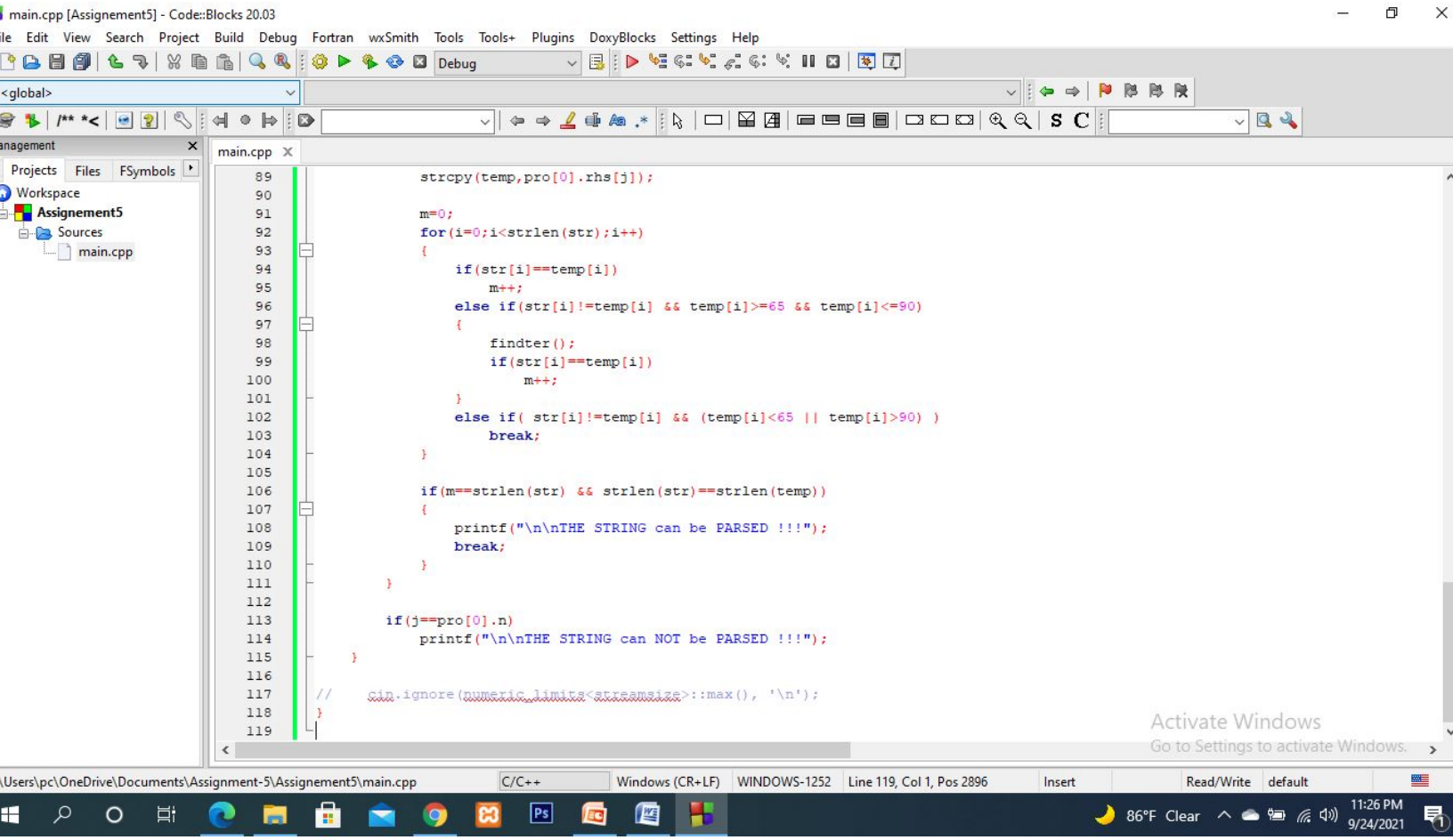


Fig. 8. Assignment-5,ScreenShot-4

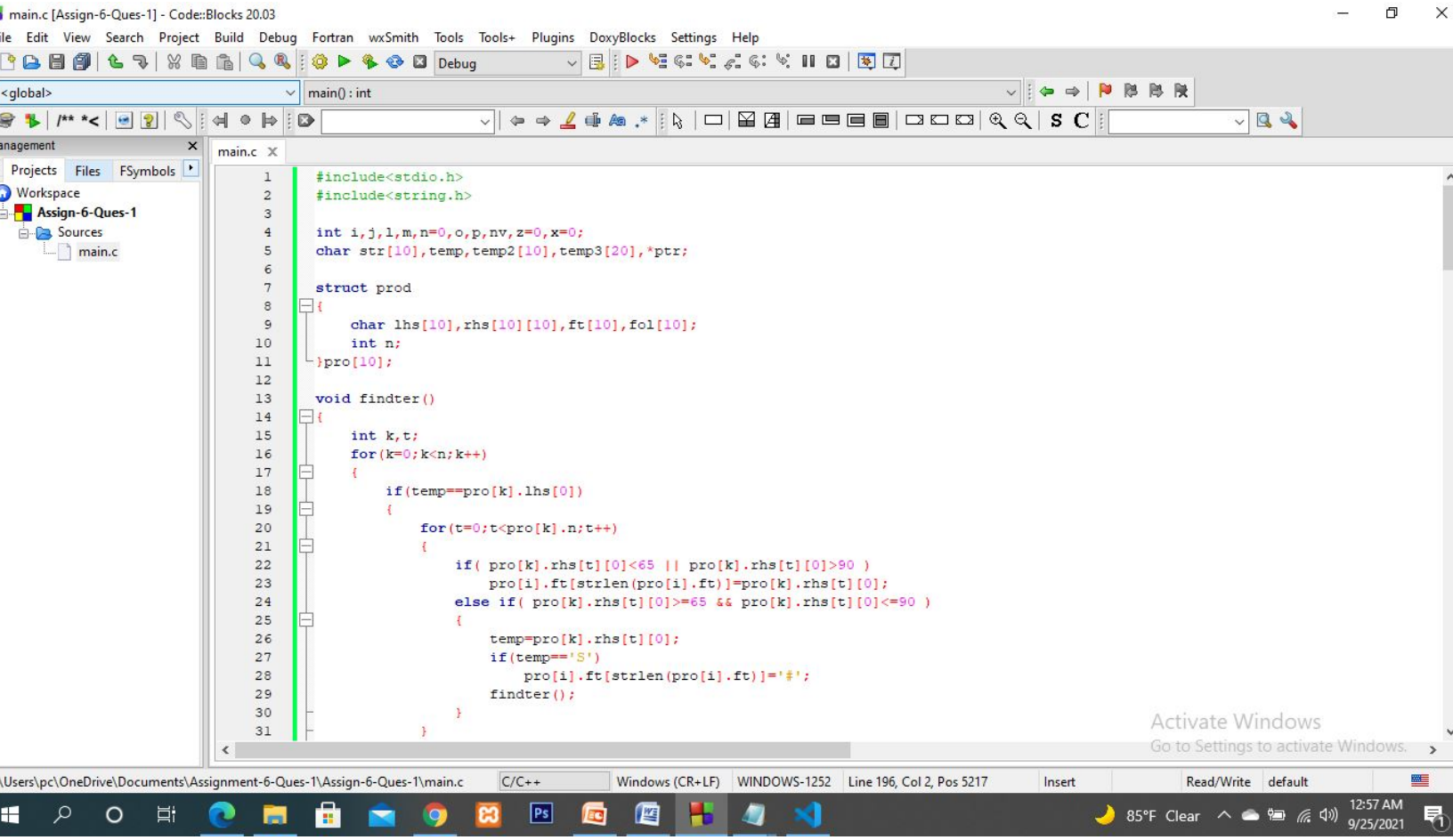


Fig. 9. Assignment-6,ques1

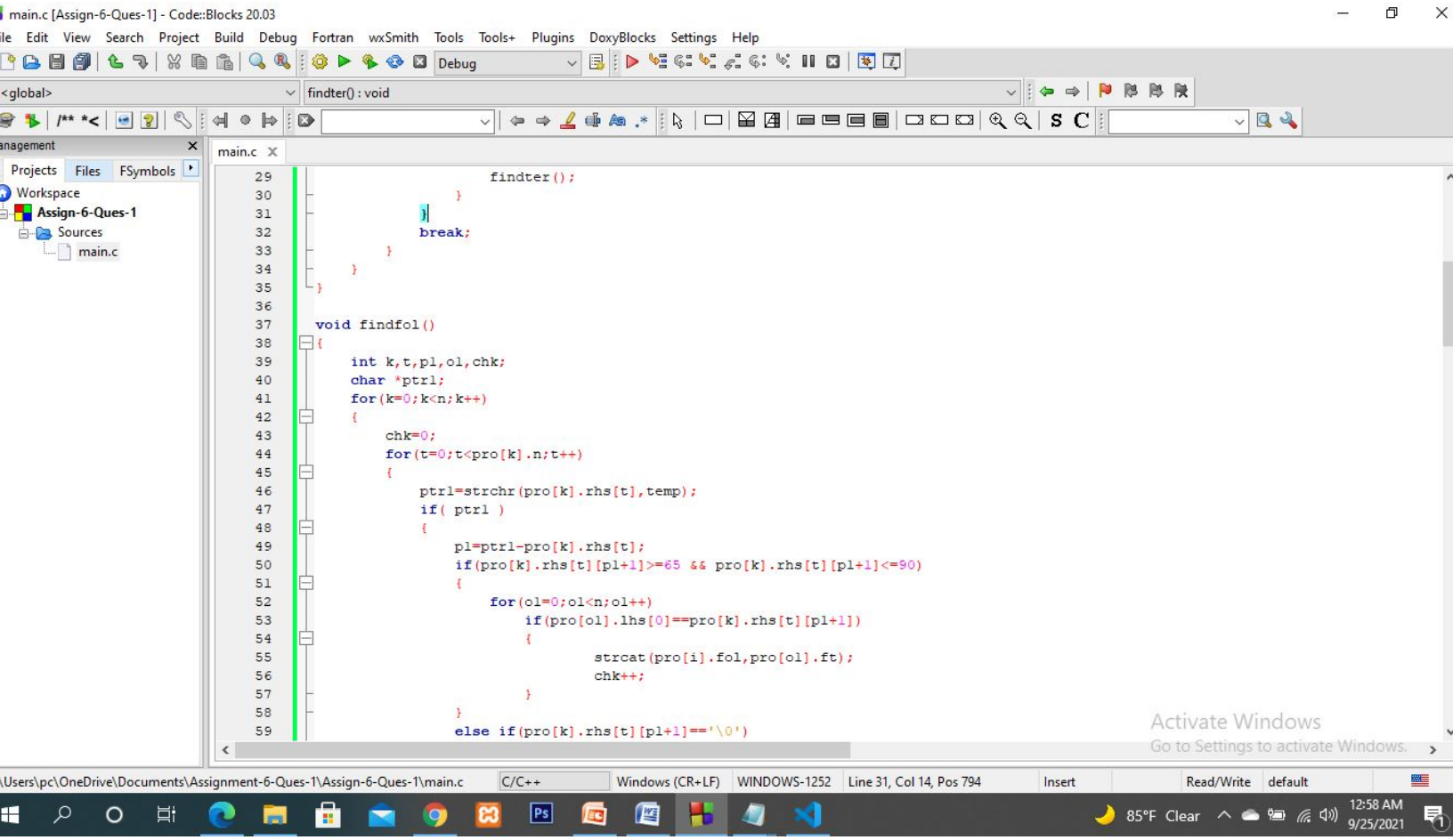


Fig. 10. Assignment-6,ques1

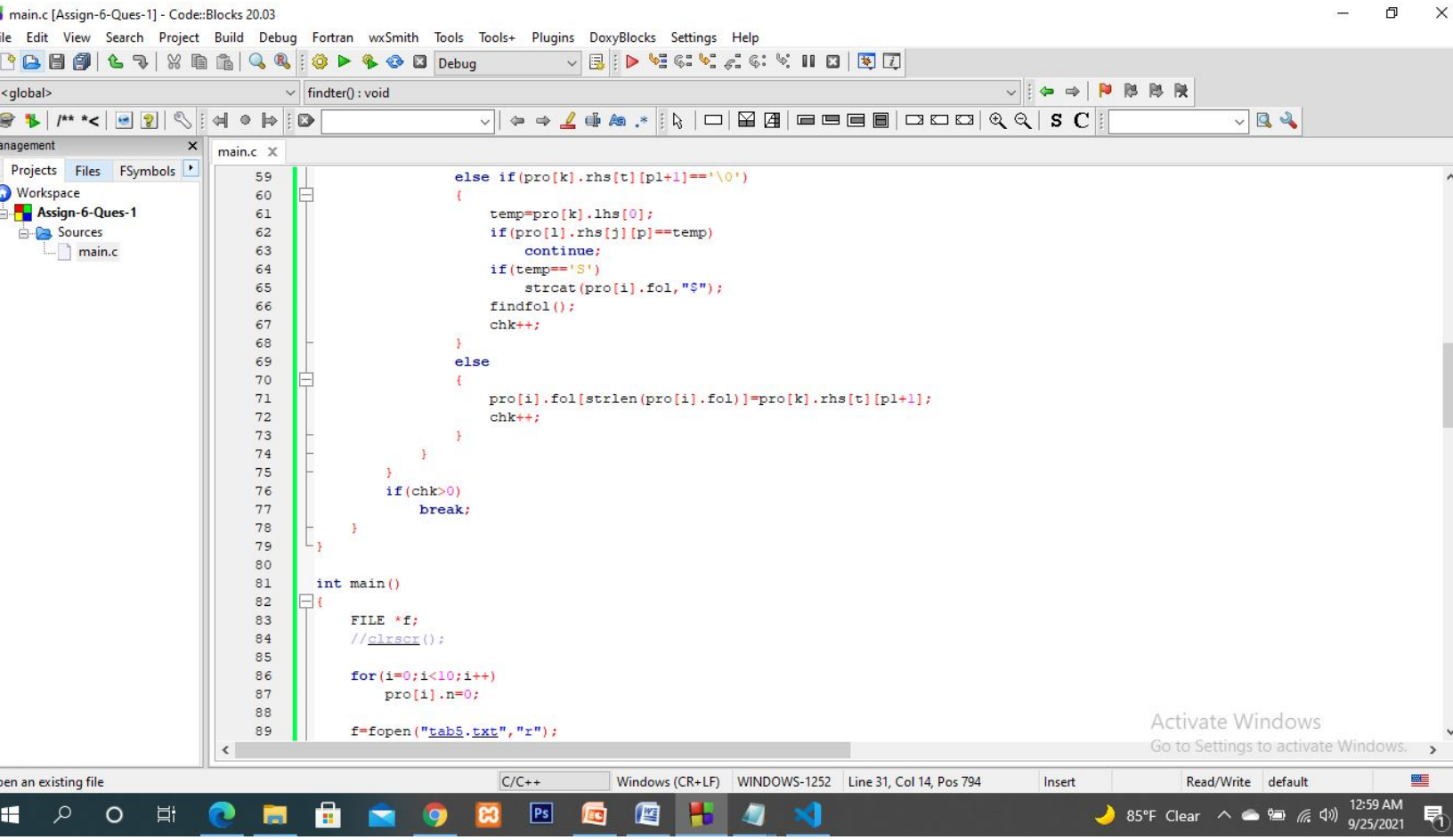


Fig. 11. Assignment-6,ques1

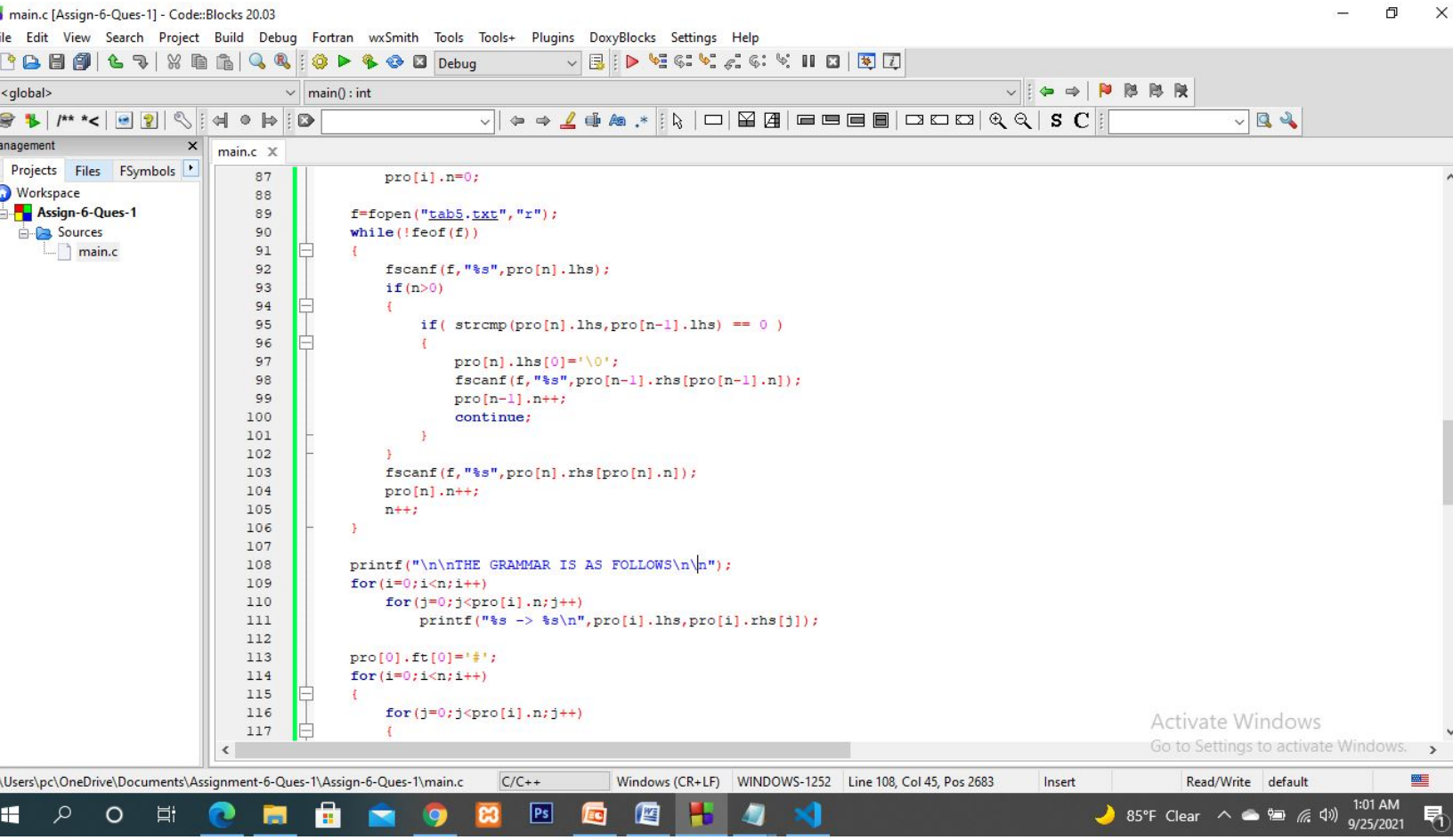


Fig. 12. Assignment-6,ques1

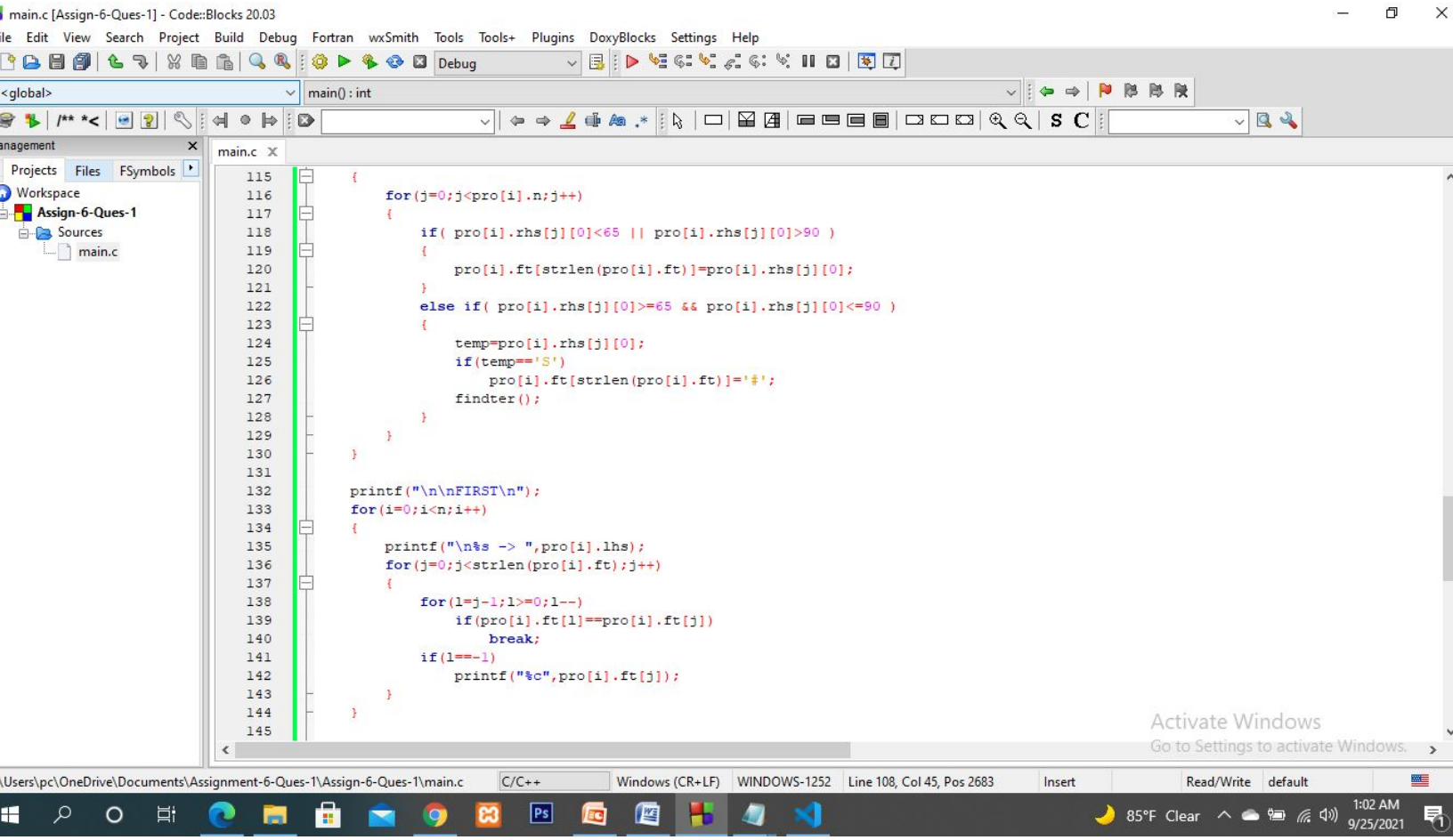


Fig. 13. Assignment-6,ques1

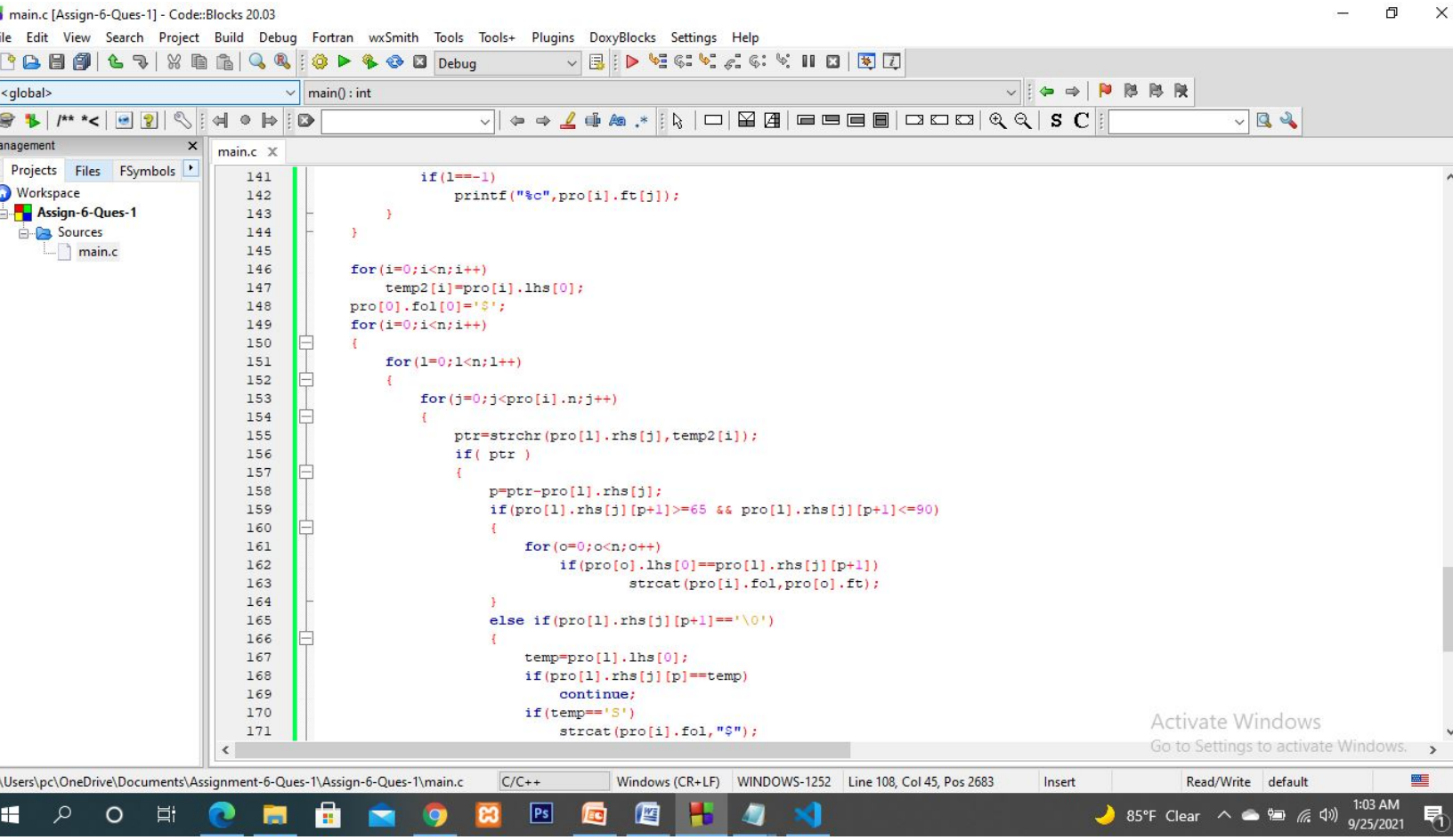


Fig. 14. Assignment-6,ques1

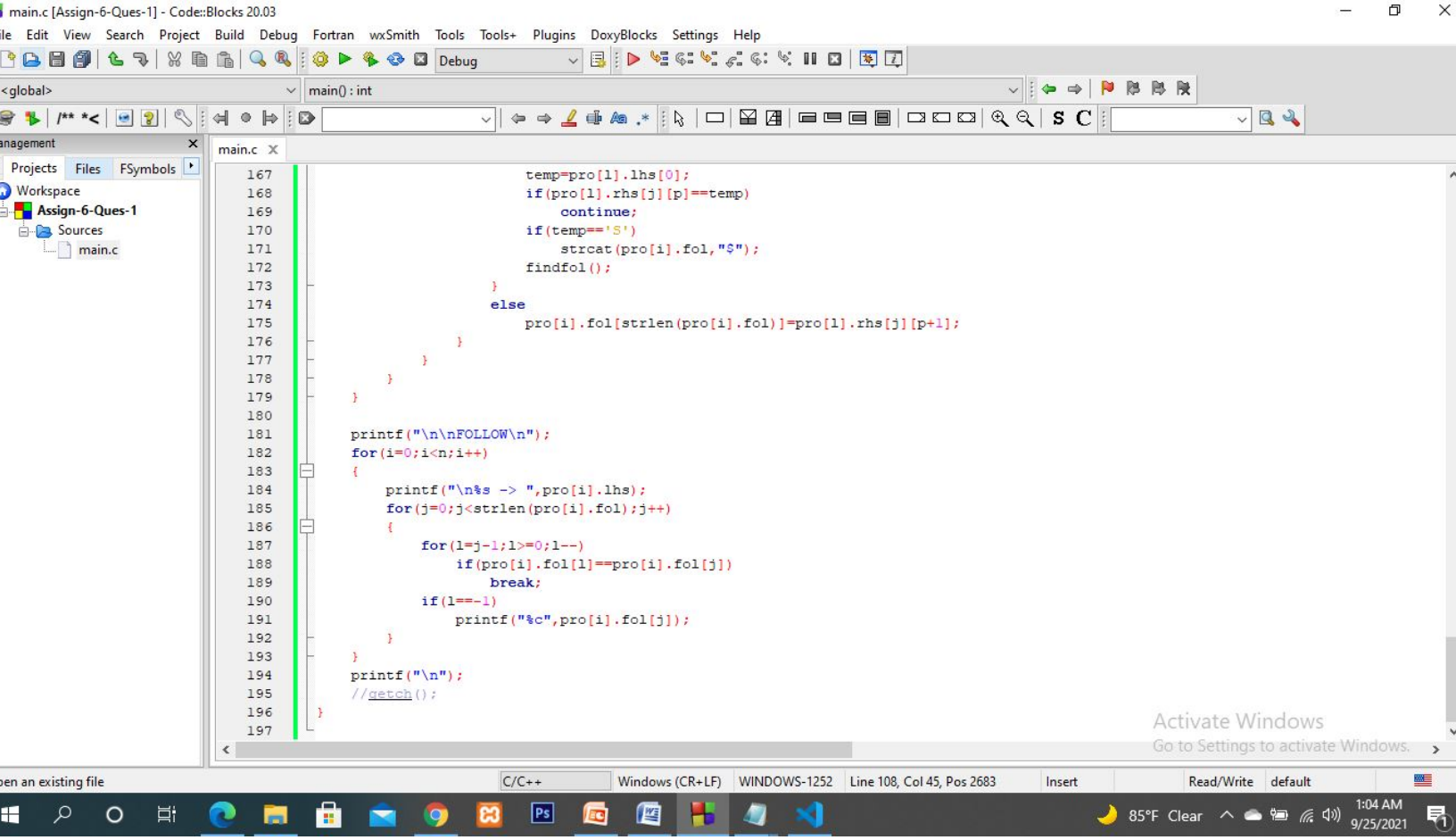


Fig. 15. Assignment-6,ques1

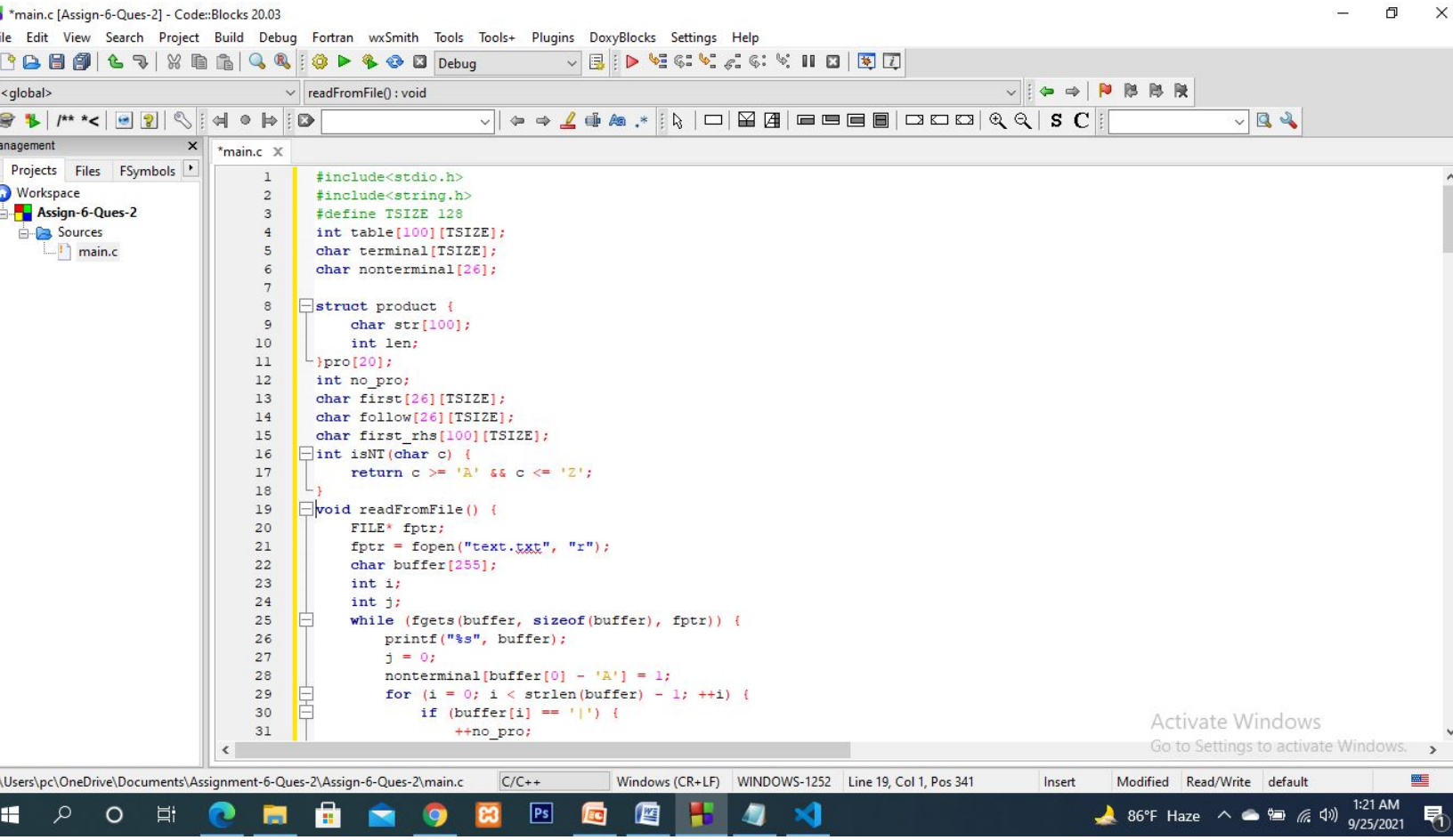
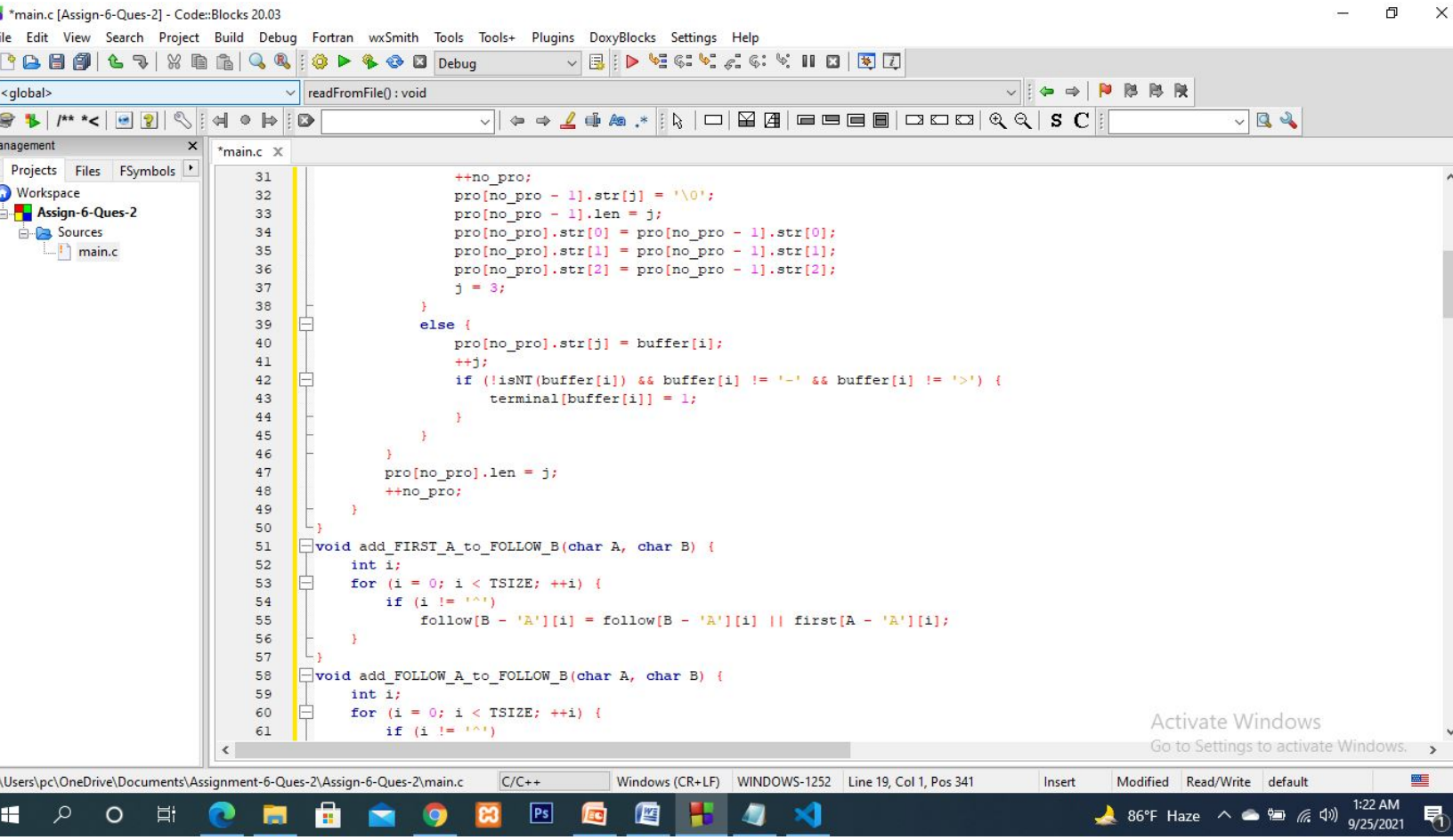


Fig. 16. Assignment-6 ques2,3



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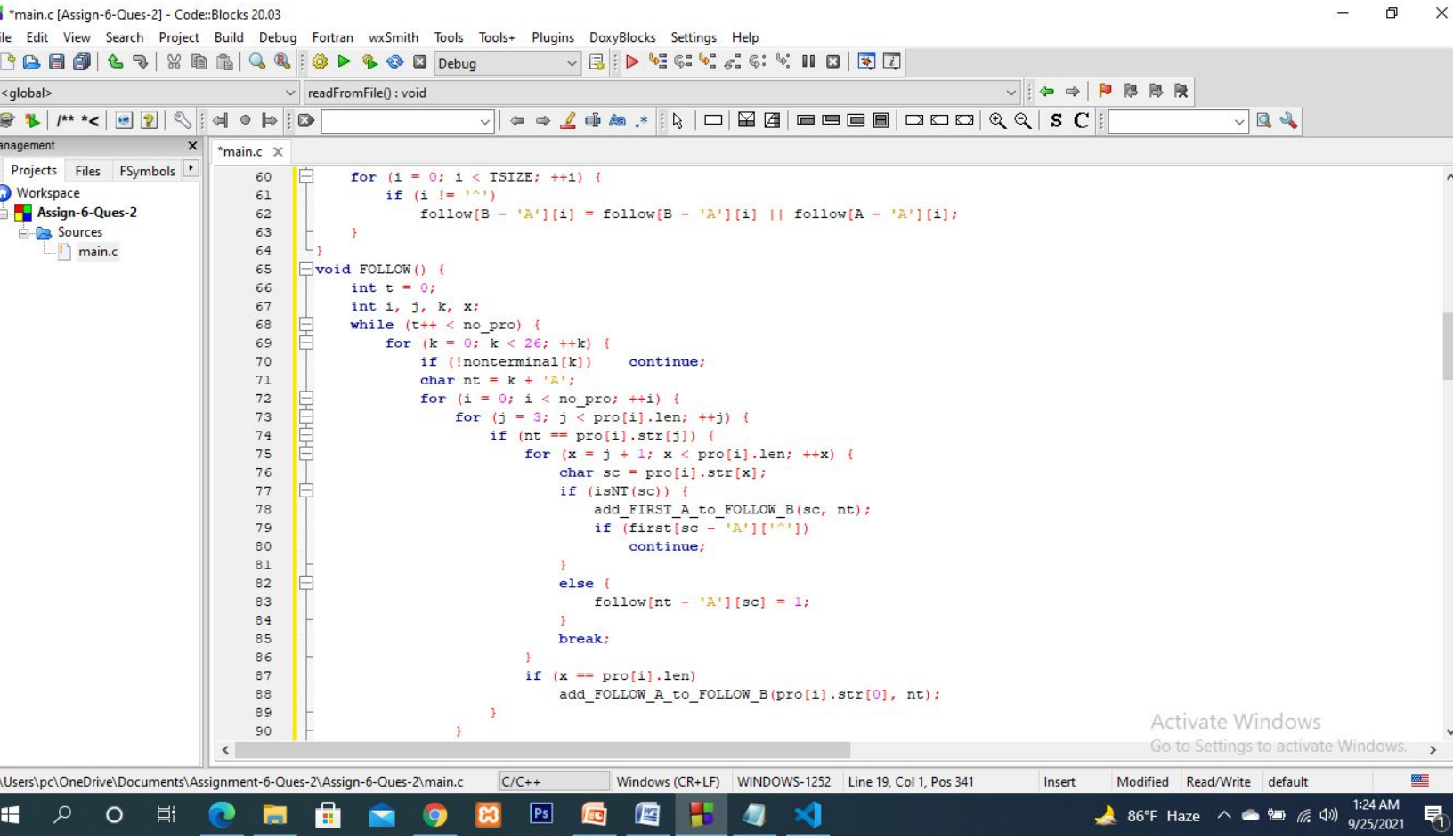

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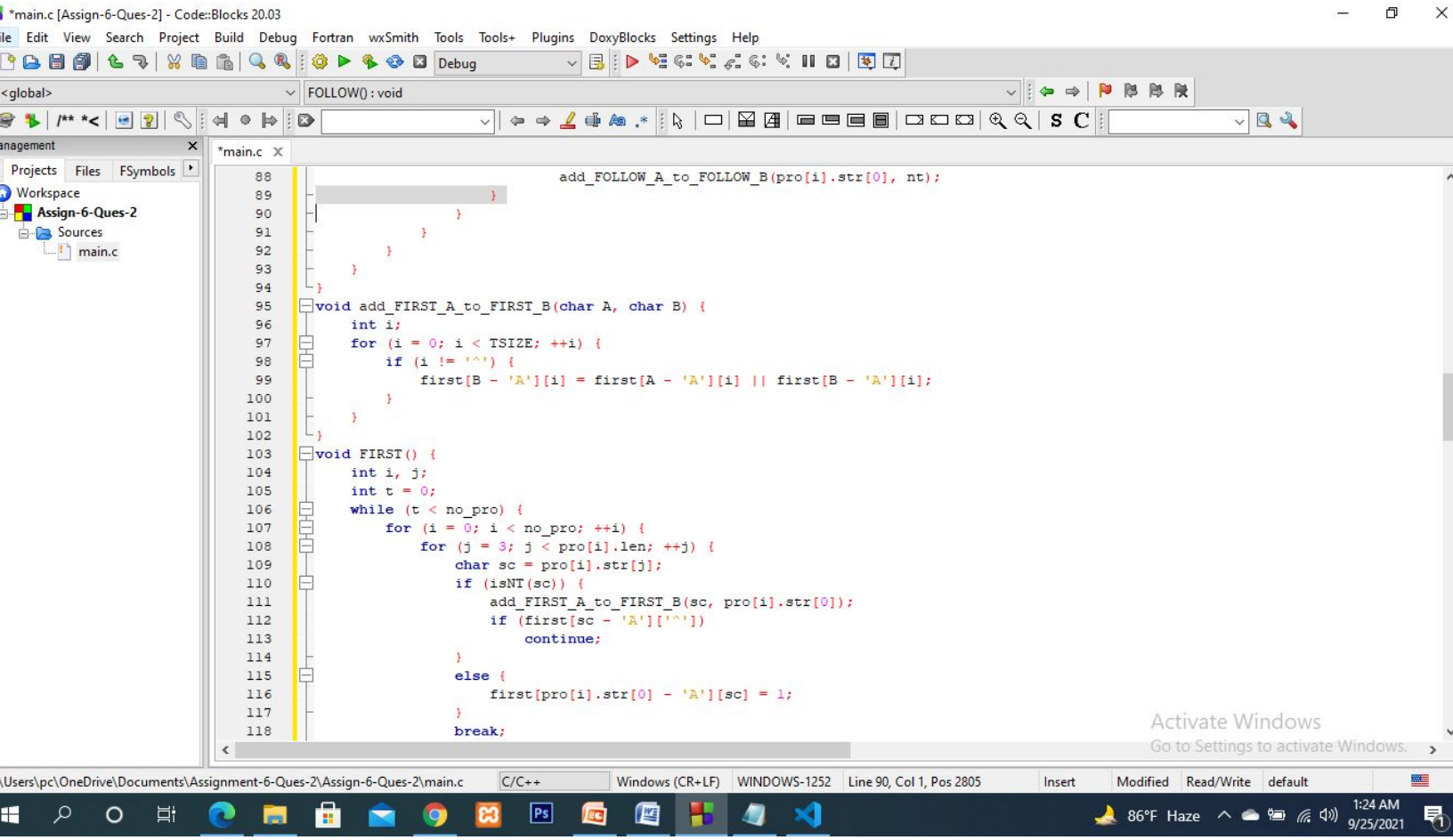
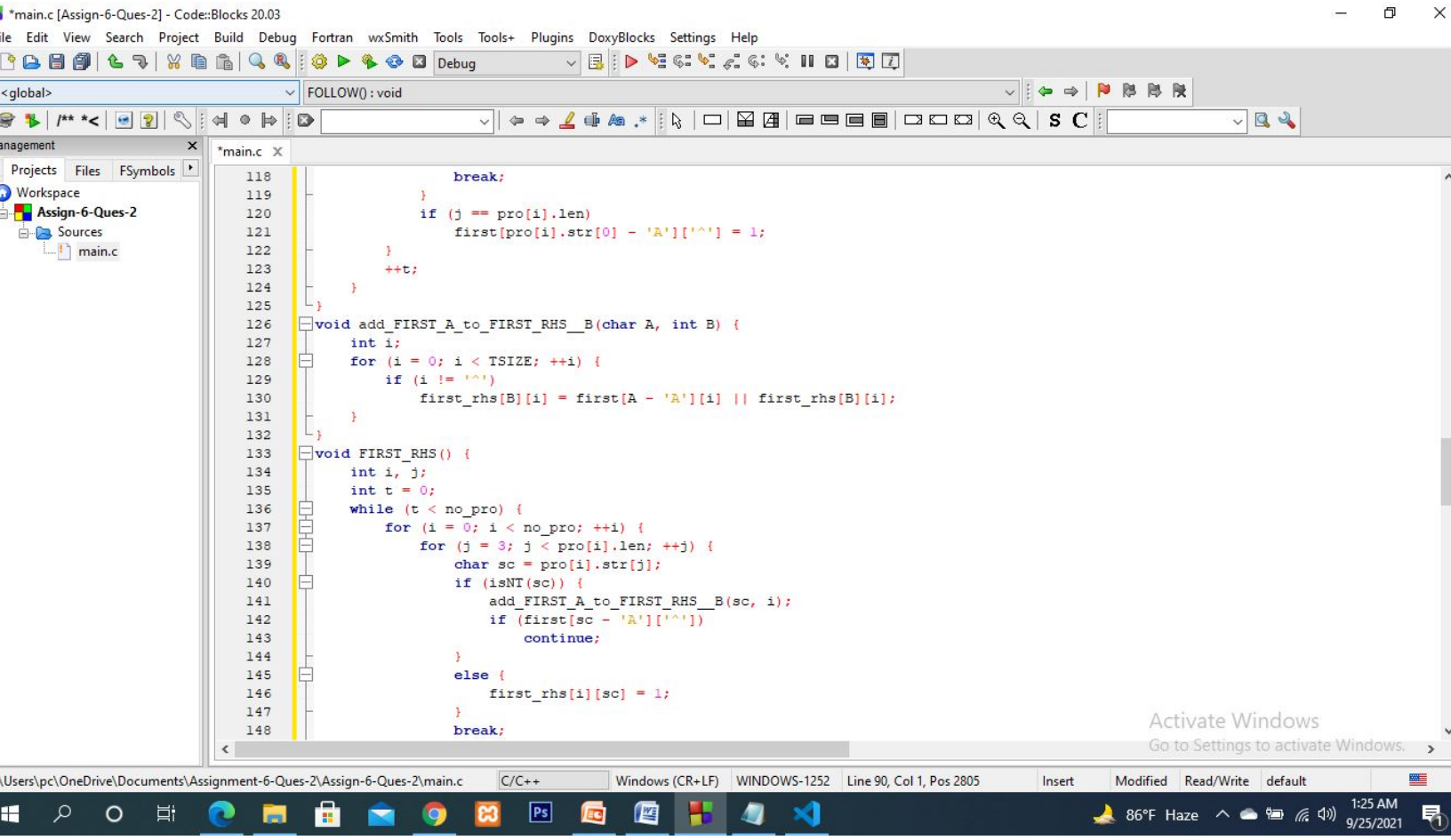


Fig. 19. Assignment-6 ques2,3



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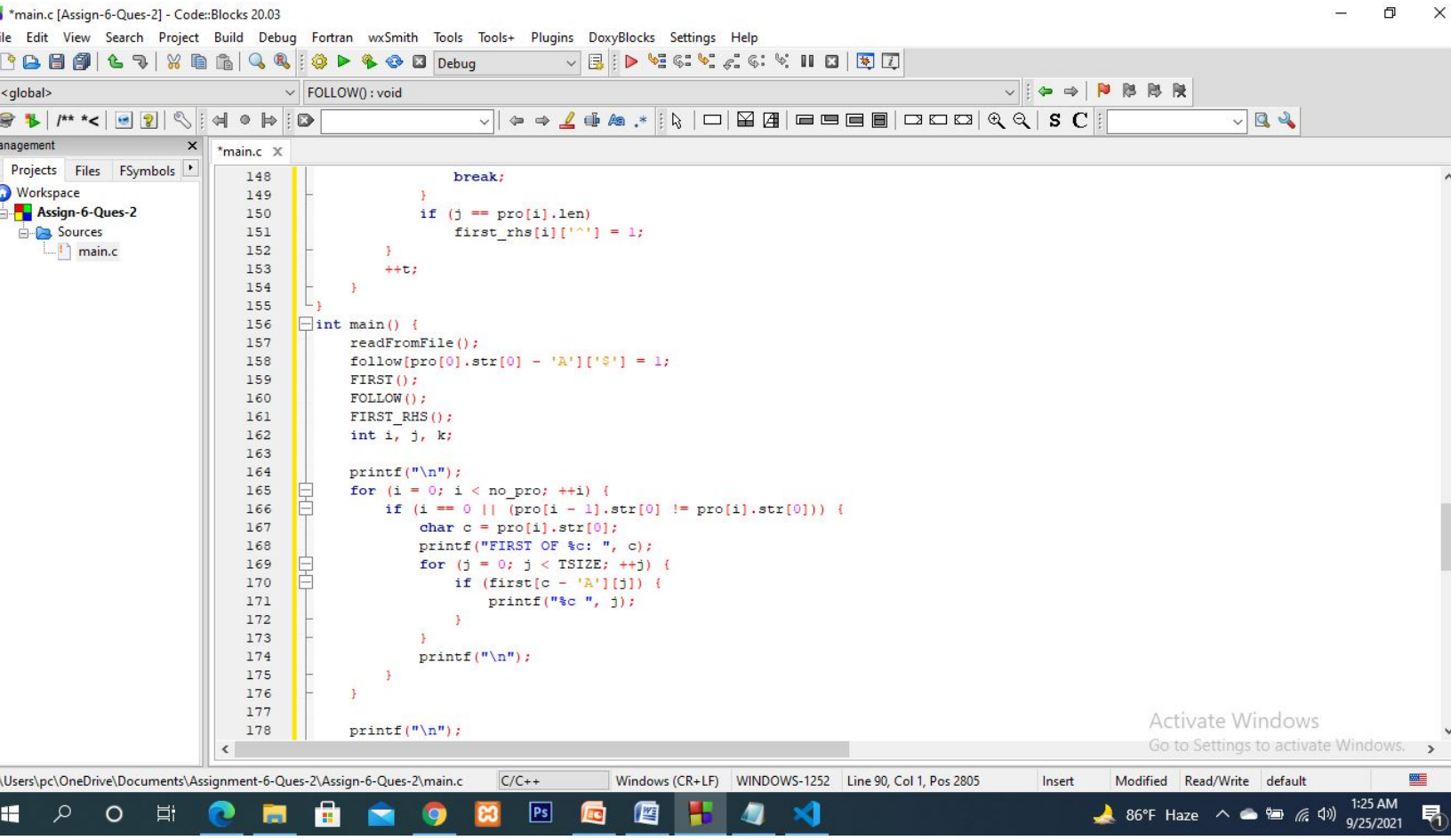
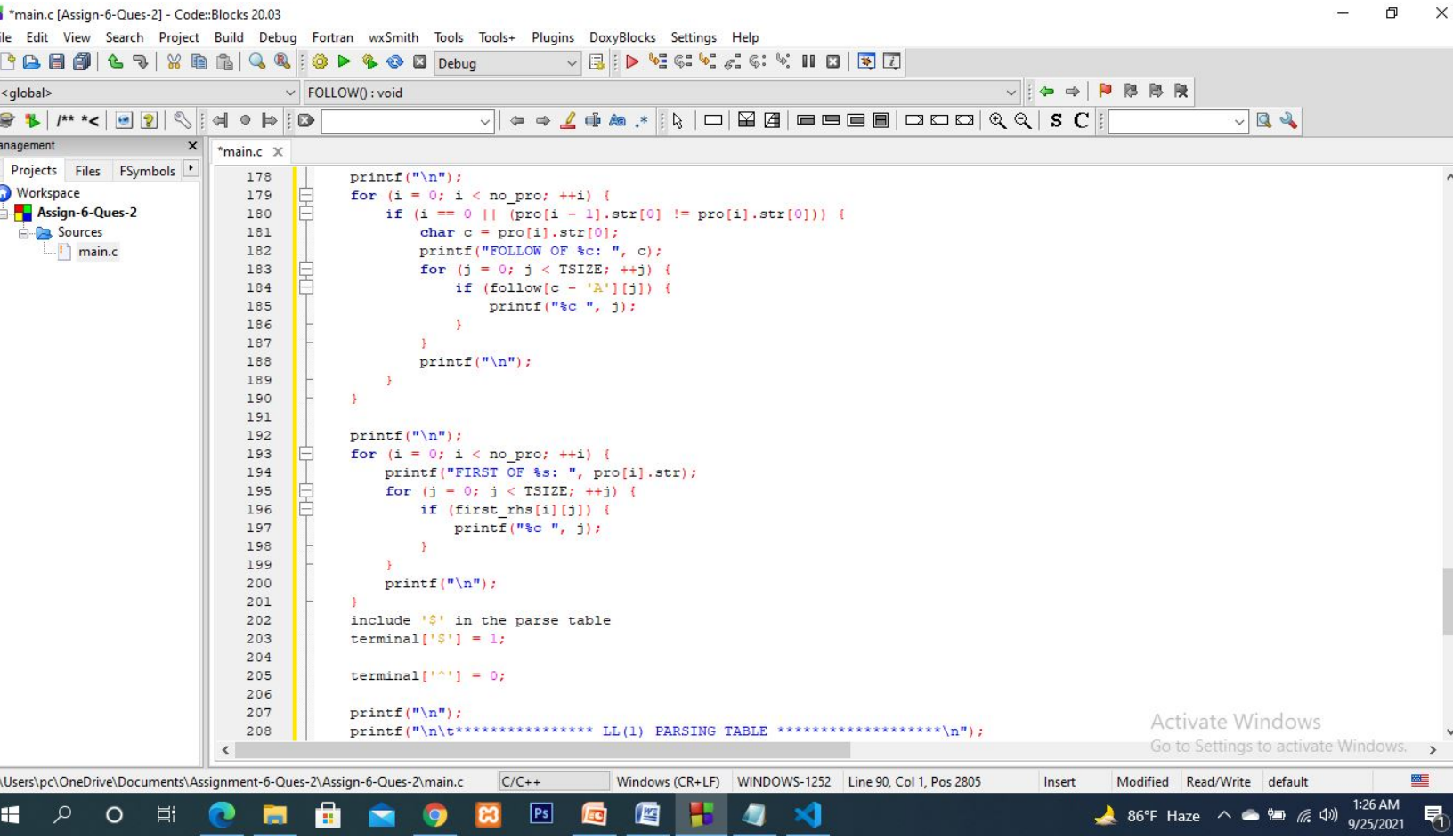


Fig. 21. Assignment-6 ques2,3



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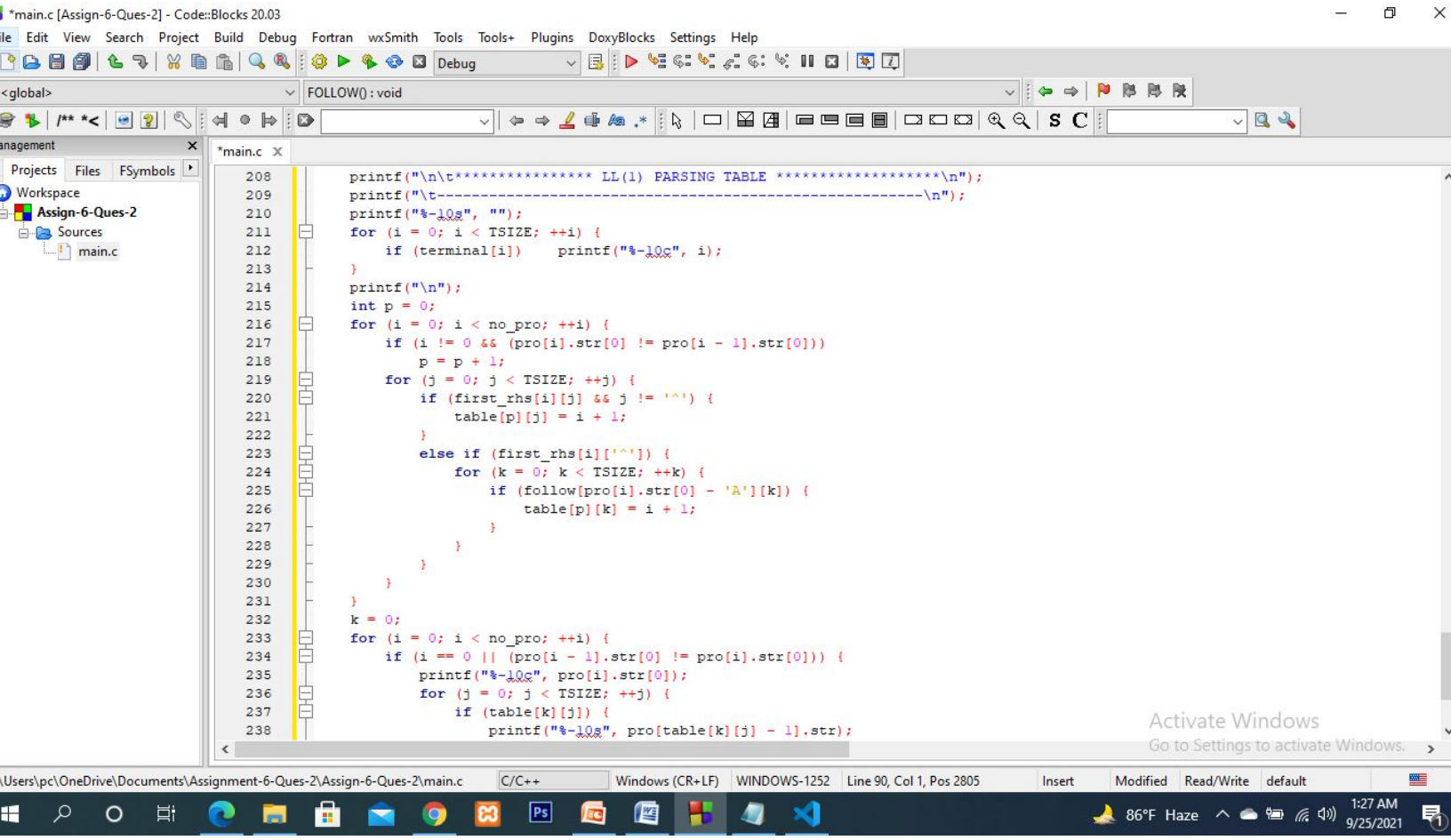

Fig. 23. Assignment-6 ques2,3

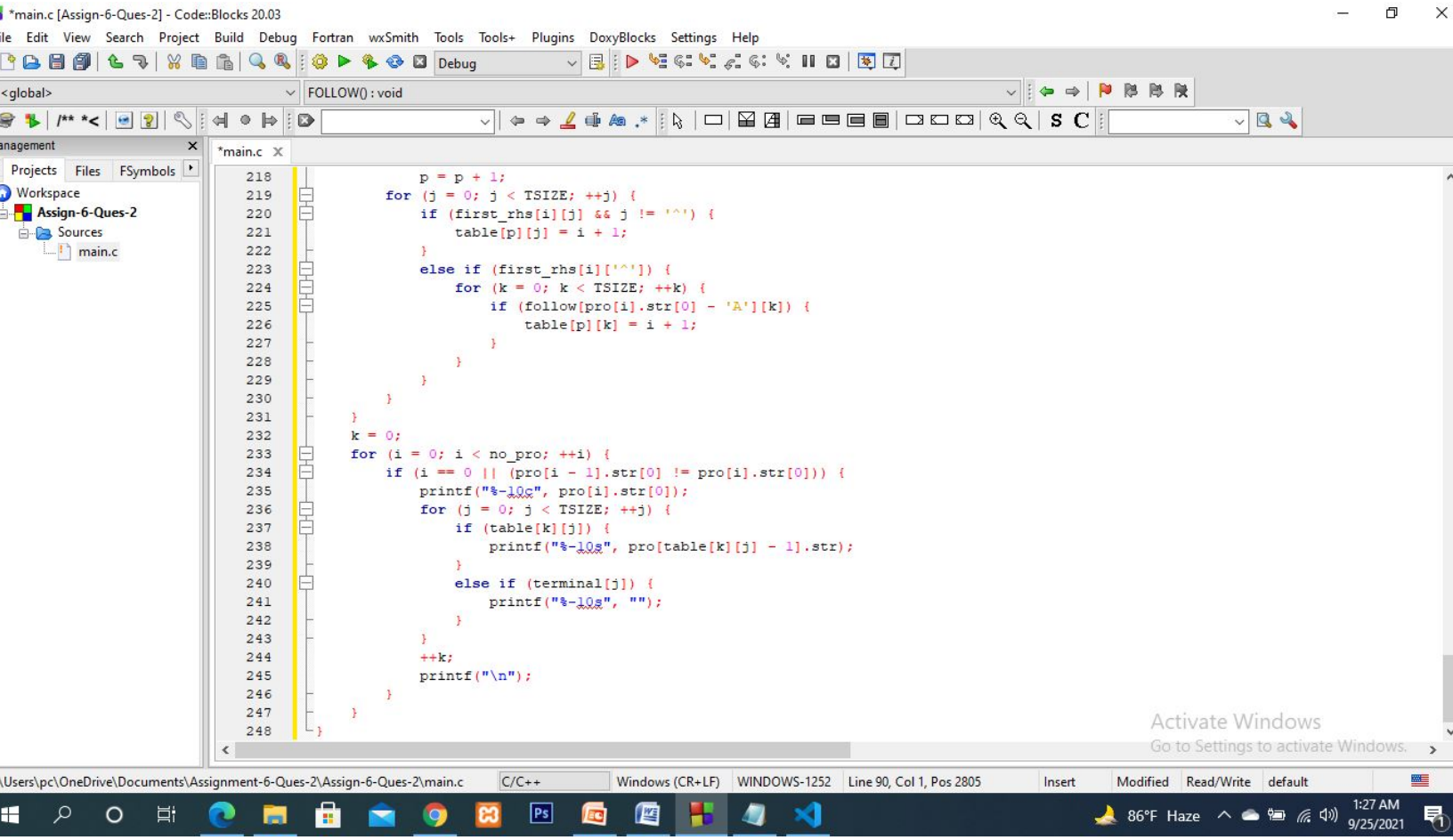

Fig. 24. Assignment-6 ques2,3

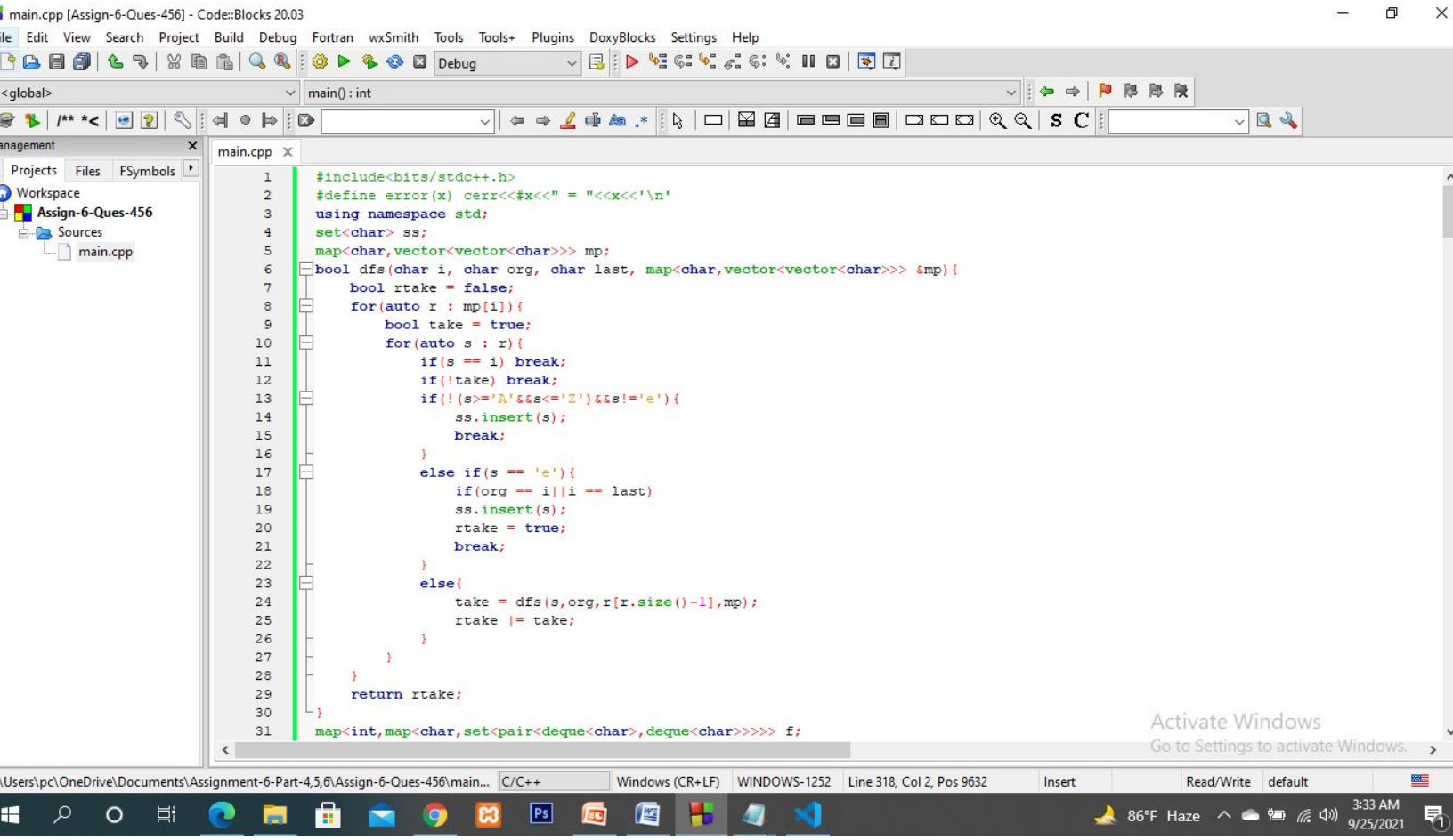

Fig. 25. Assignment-6 ques4,5,6

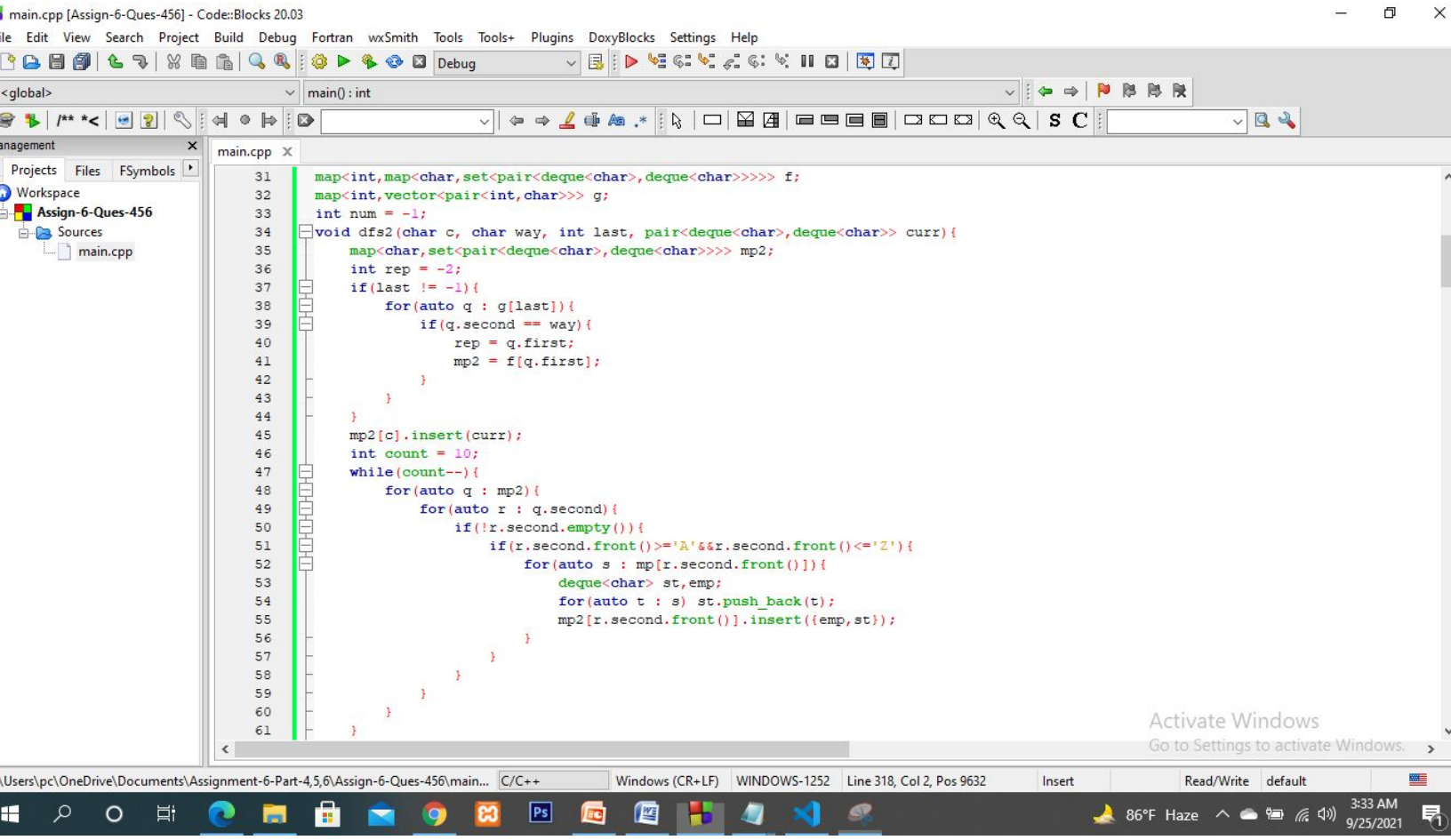

Fig. 26. Assignment-6 ques4,5,6

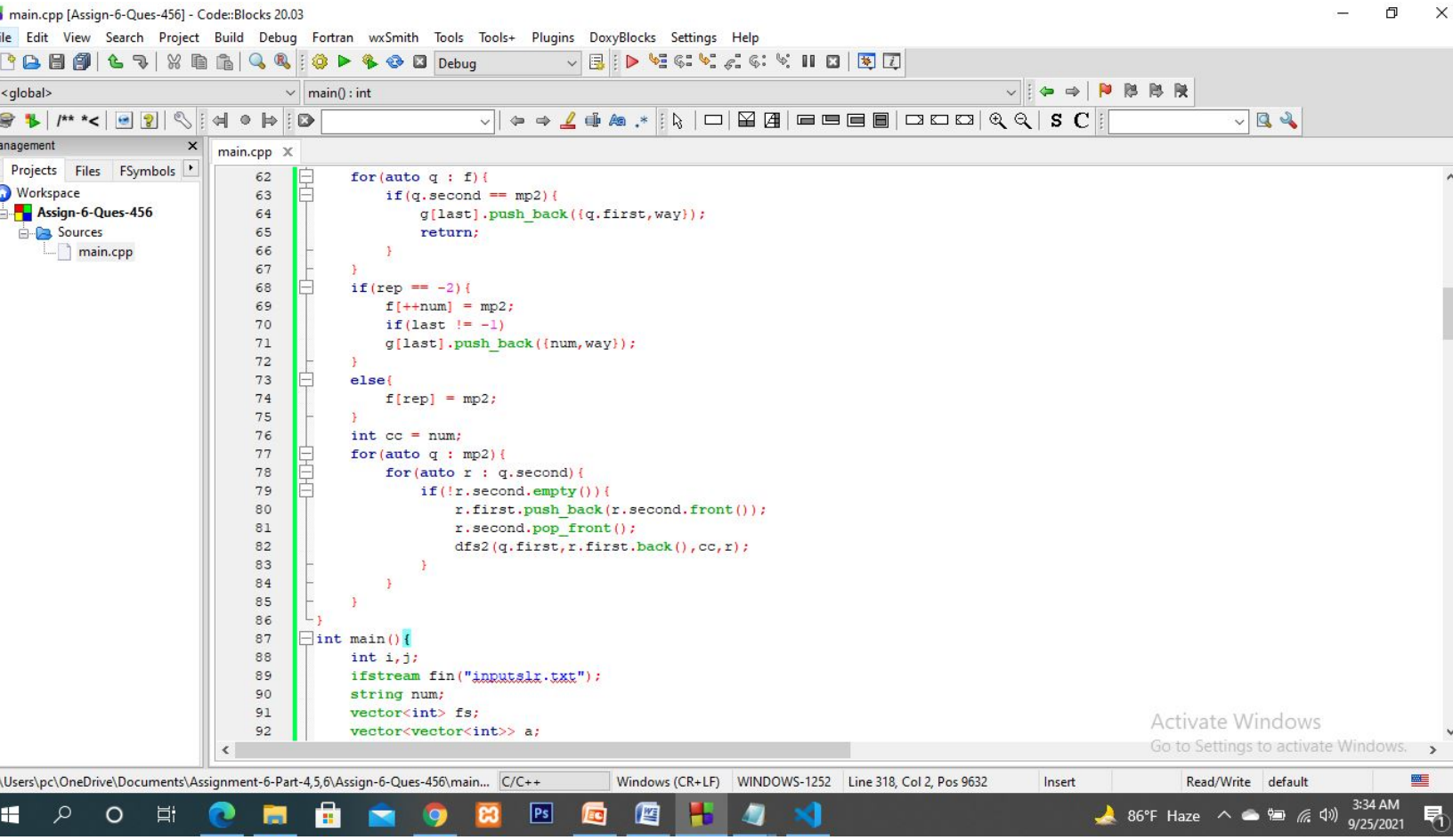

Fig. 27. Assignment-6 ques4,5,6

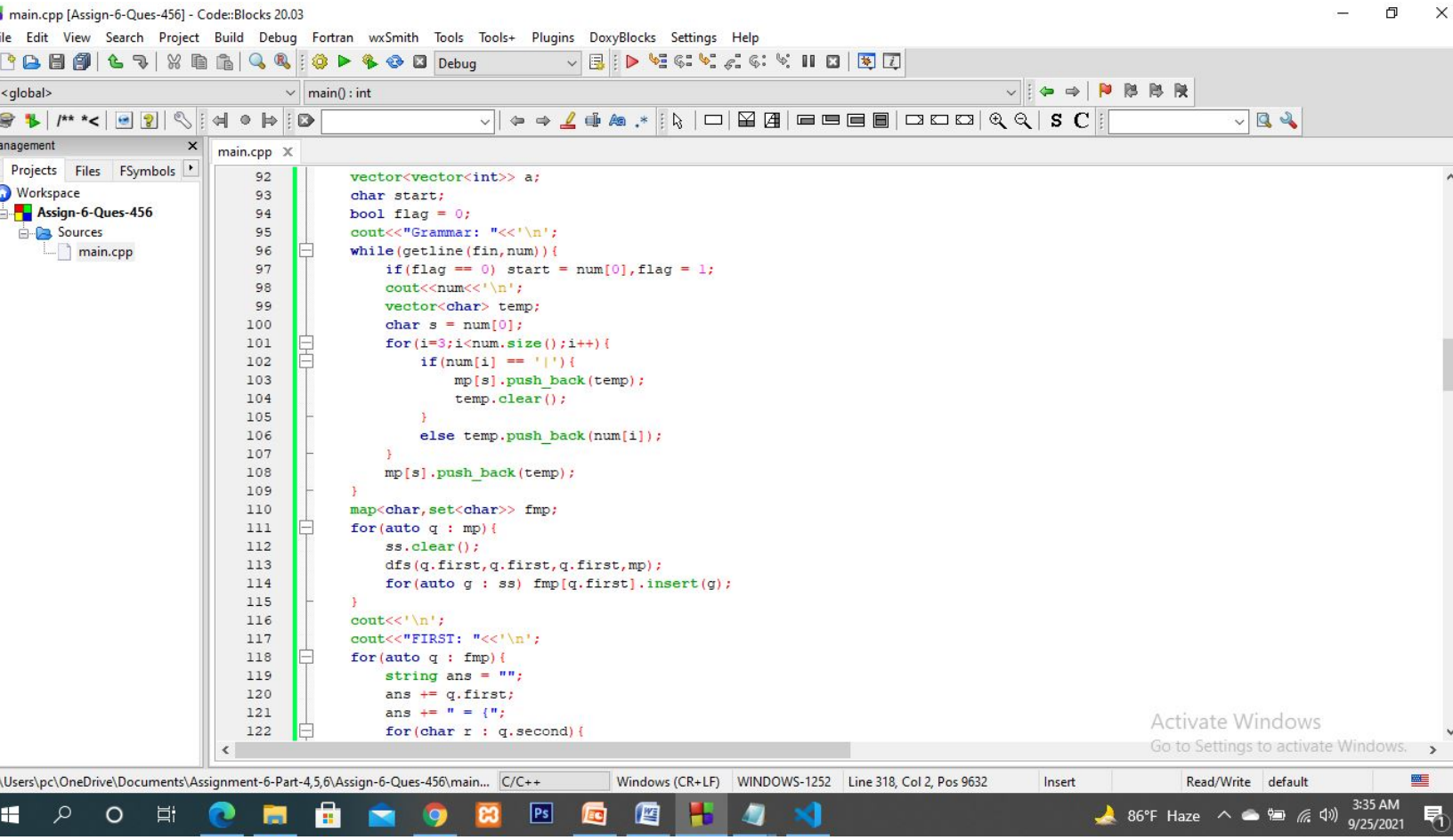

Fig. 28. Assignment-6 ques4,5,6

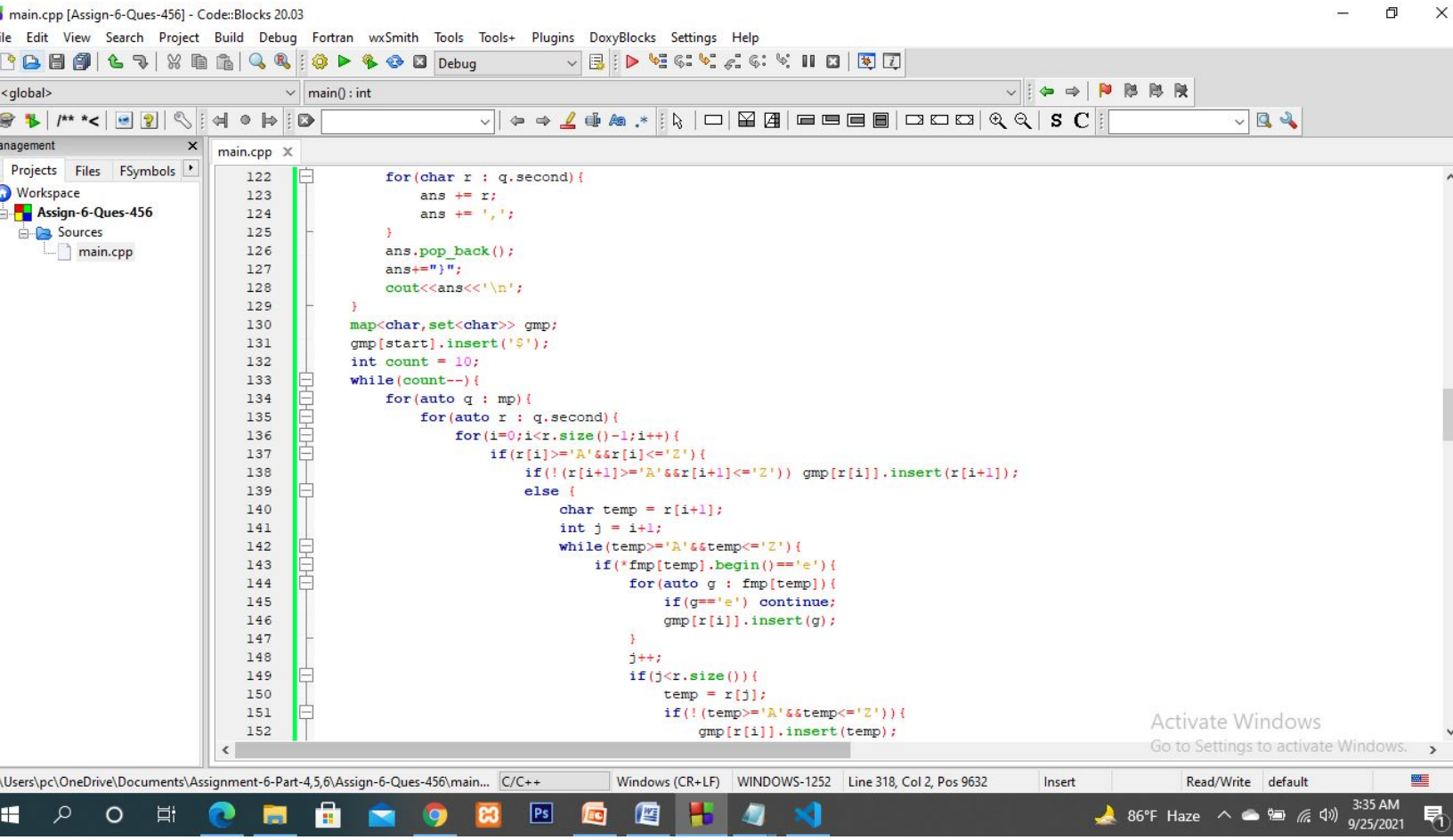

Fig. 29. Assignment-6 ques4,5,6

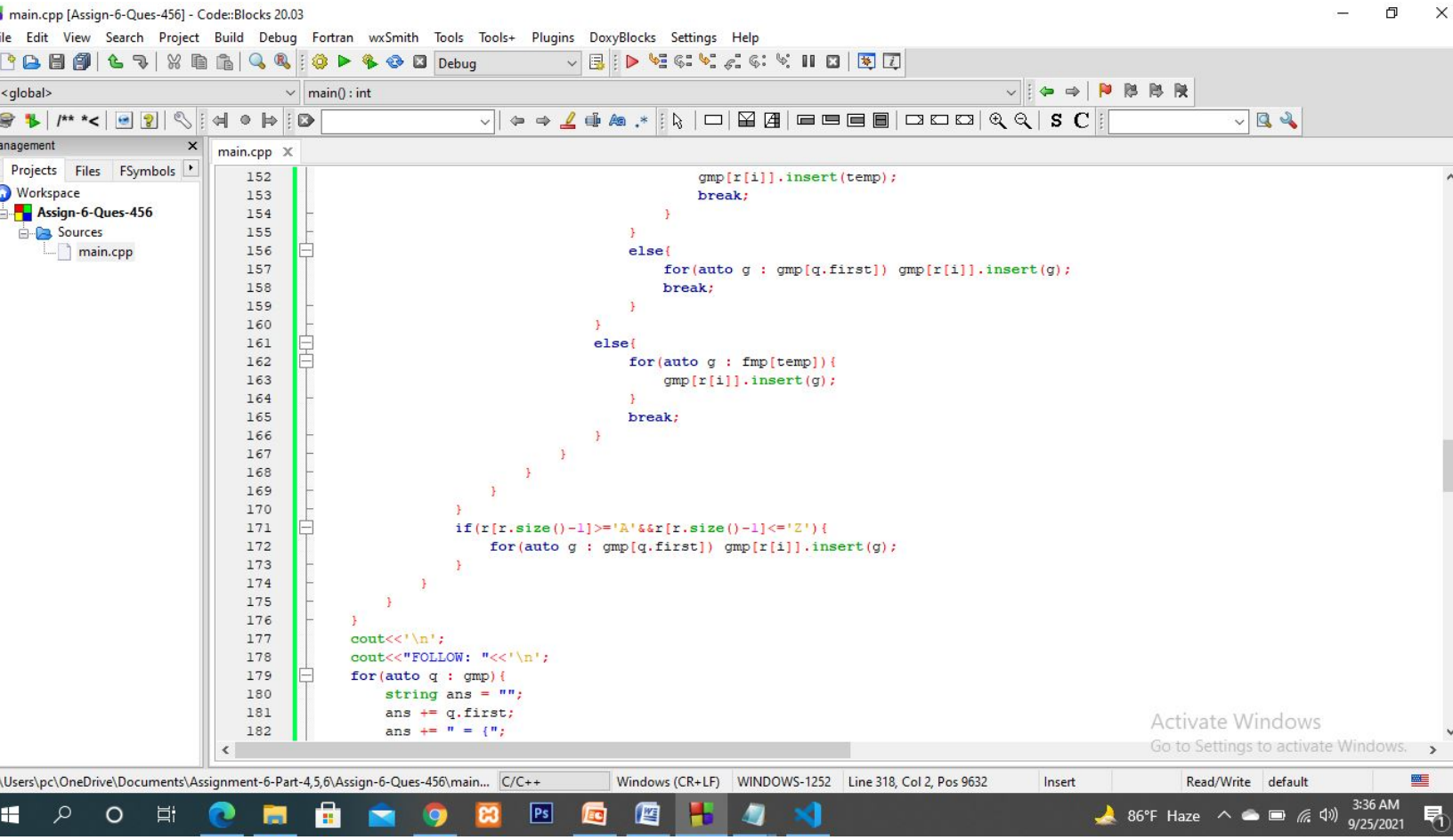

Fig. 30. Assignment-6 ques4,5,6

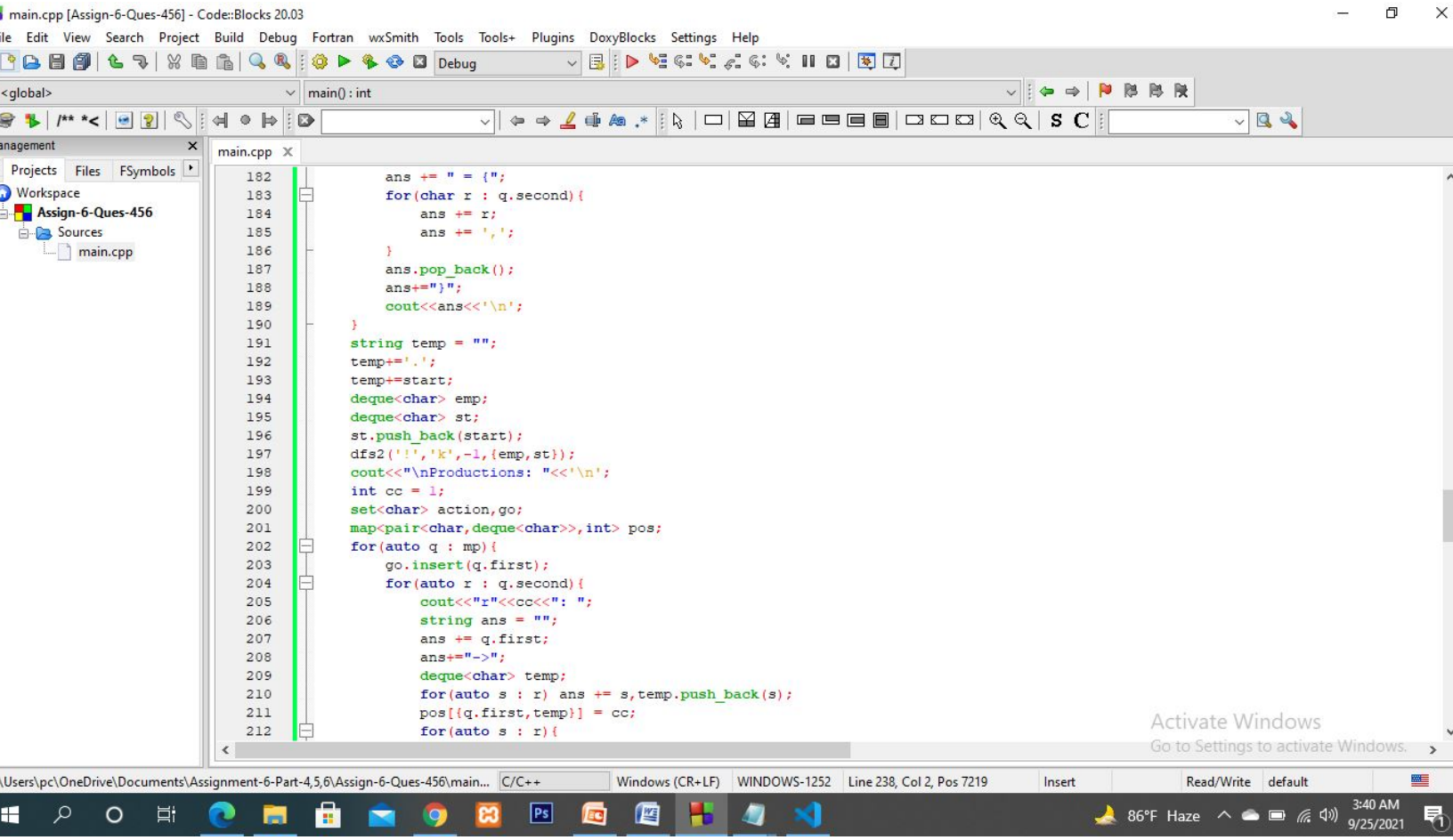

Fig. 31. Assignment-6 ques4,5,6

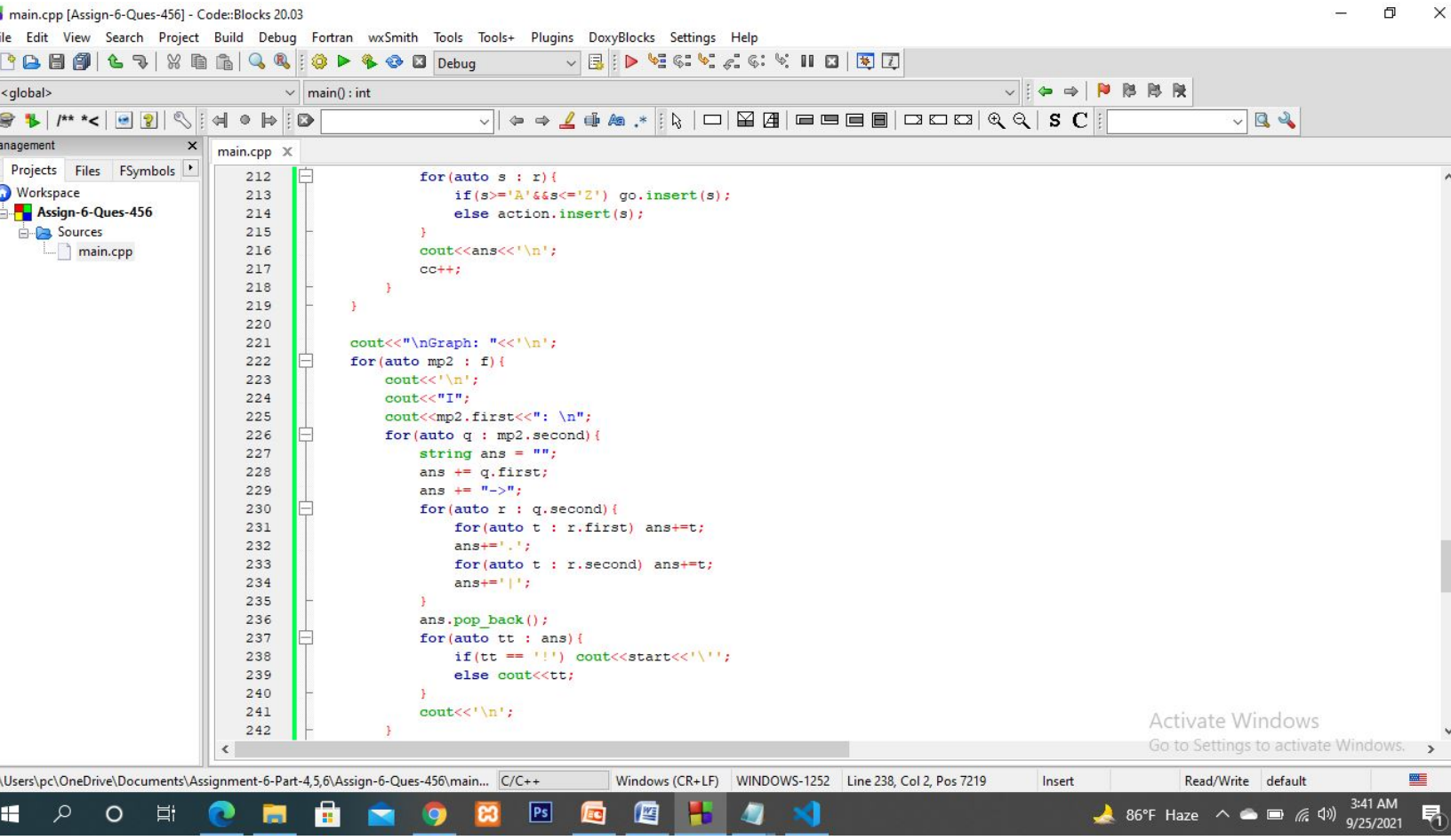

Fig. 32. Assignment-6 ques4,5,6

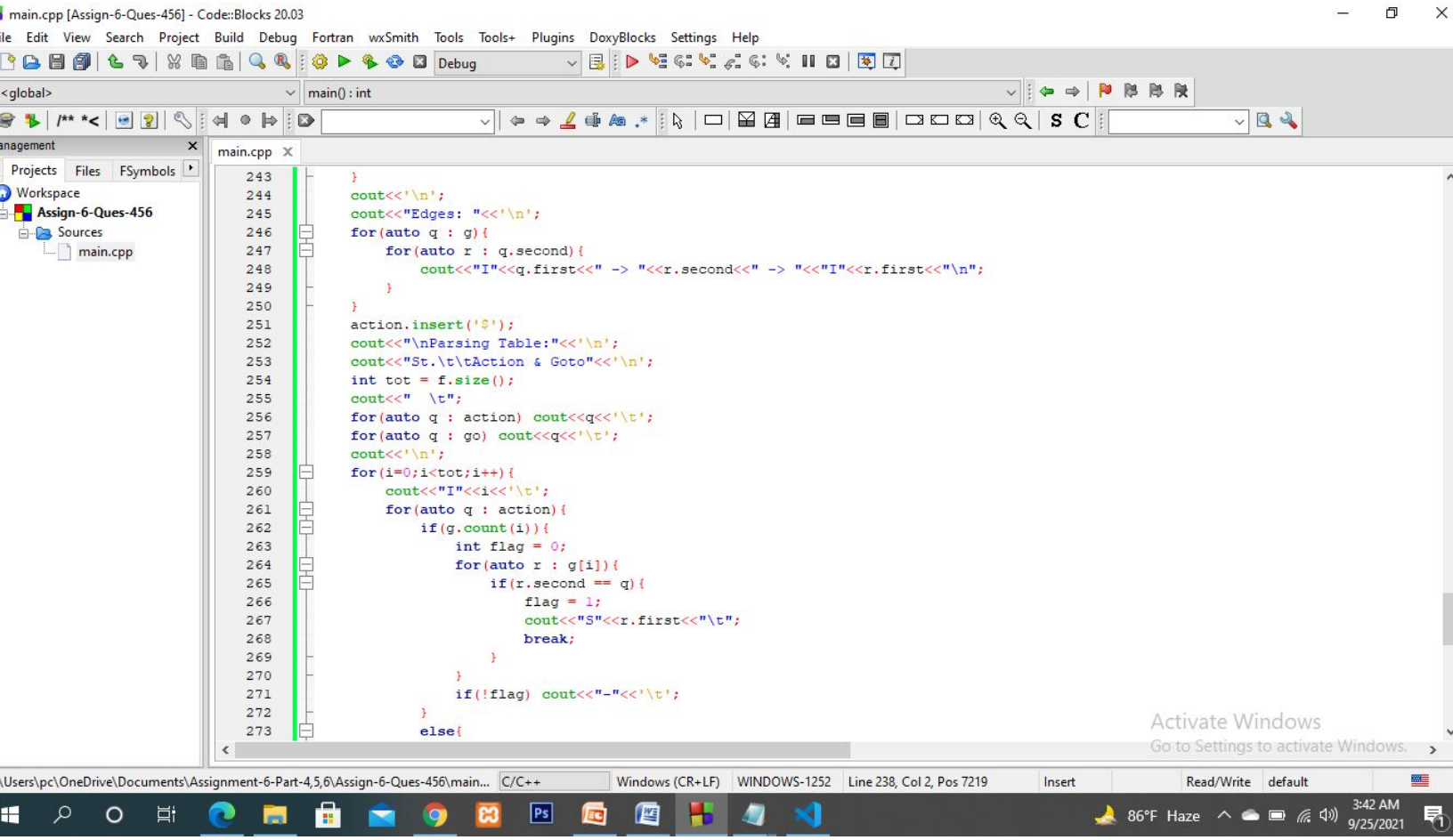

Fig. 33. Assignment-6 ques4,5,6

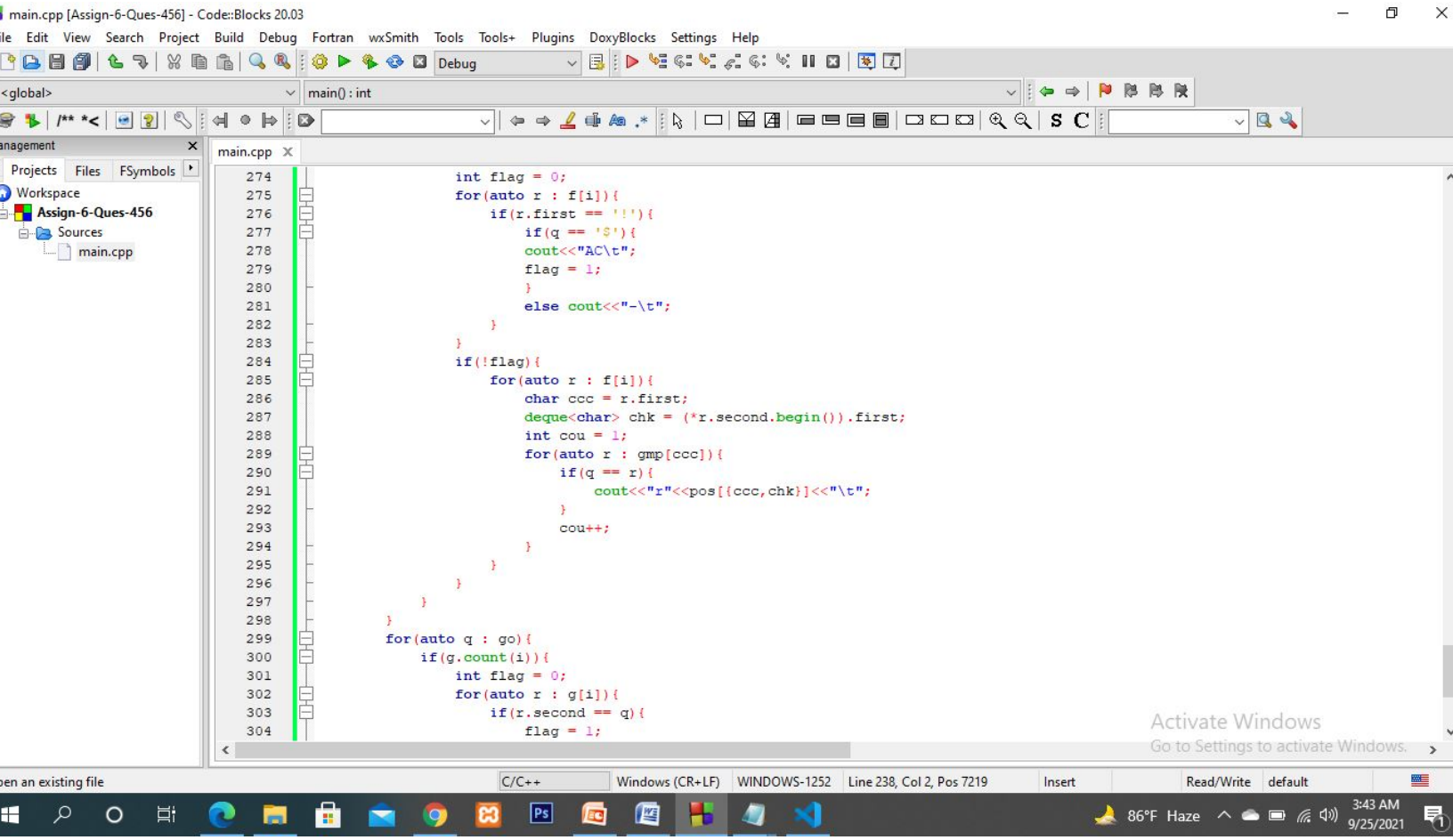

Fig. 34. Assignment-6 ques4,5,6

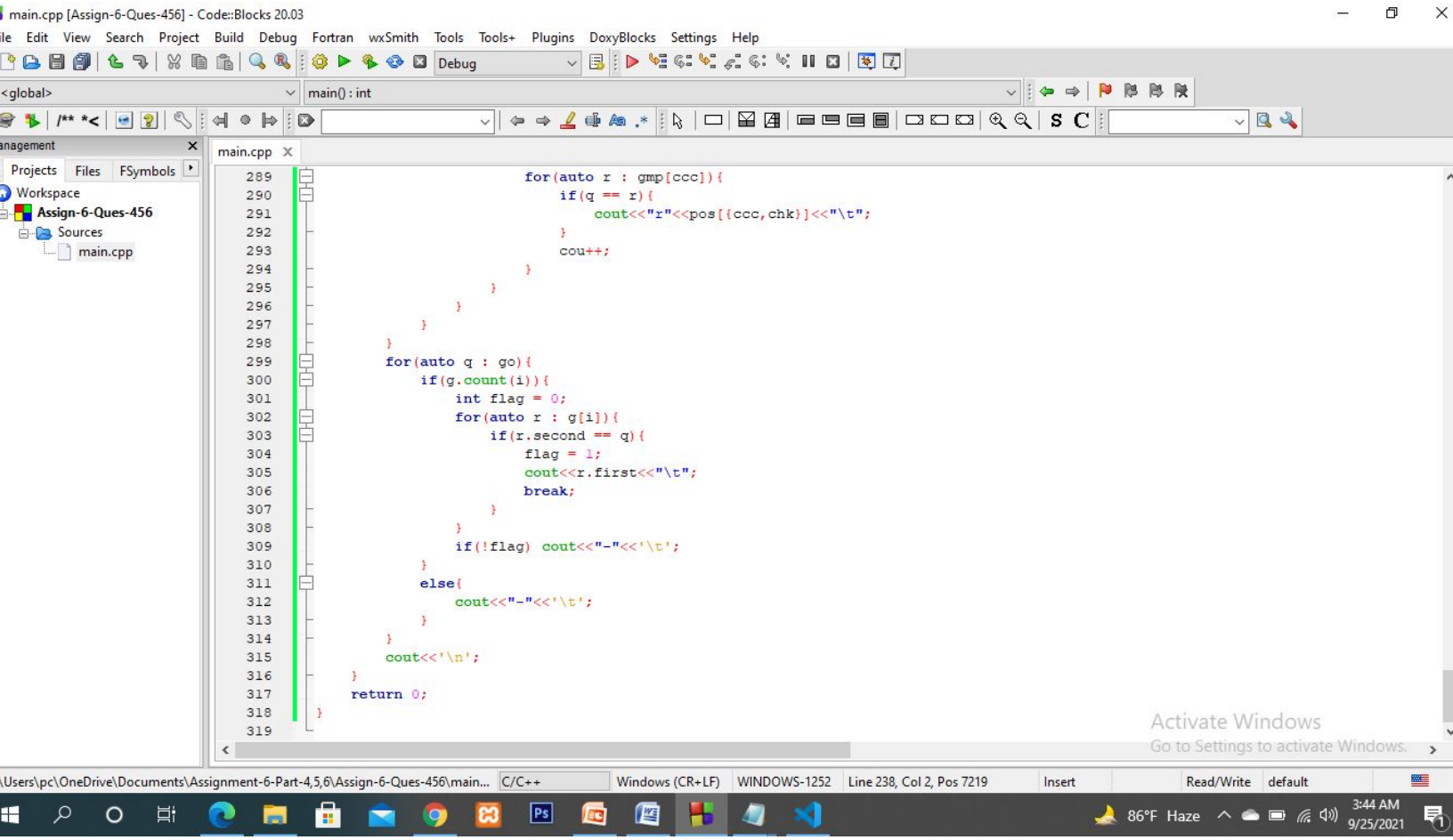

Fig. 35. Assignment-6 ques4,5,6