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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Write a program that simulates the dial of a phone number. The program will input a phone number and it will acknowledge the call by either writing an error message or the 8 digit phone number to the console window. The phone number may have either digits, letters, or both.  Here are the letters associated with each digit.   |  |  |  |  | | --- | --- | --- | --- | | 0 |  | 5 | J K L | | 1 |  | 6 | M N O | | 2 | A B C | 7 | P Q R S | | 3 | D E F | 8 | T U V | | 4 | G H I | 9 | W X Y Z |   A phone number never begins with a 0 or 555, so the program should flag an error if such a number is entered. A phone number always has a hyphen (-) in the 4th position. If a hyphen is in any other position, it is considered an invalid digit. If the phone number is valid, write the converted number to the output file.  The program should process any number of phone numbers until the user enters a Q.    Sample Output from the Program:  **Enter a phone number (Q to quit): 213-2121**  **Phone Number Dialed: 213-2121**  **Enter a phone number (Q to quit): asc-dfer**  **Phone Number Dialed: 272-3337**  **Enter a phone number (Q to quit): 555-resw**  **ERROR - Phone number cannot begin with 555**  **Enter a phone number (Q to quit): 098-8765**  **ERROR - Phone number cannot begin with 0**  **Enter a phone number (Q to quit): 12345678**  **ERROR - Hyphen is not in the correct position**  **Enter a phone number (Q to quit): @34-\*uyt**  **ERROR - An invalid character was entered**  **Enter a phone number (Q to quit): Q**  **Press any key to continue . . .** |
|  |
| Using the pseudo code below, write the C++ code that will meet the requirements:  Main Function     Declare the char variables for the 8 digits of the phone number      while true         Call the ReadDials function passing the 8 digits         by reference.  ReadDials returns an error code by         value.          If the return value is -5, exit the do while loop          If the error code is -1, display the         error message "ERROR - An invalid character was entered".         If the error code is -2, display the         error message "ERROR - Phone number cannot begin with 0".         If the error code is -3, display the         error message "ERROR - Phone number cannot begin with 555".         If the error code is -4, display the         error message "ERROR - Hyphen is not in the correct position".         Otherwise, call the AcknowledgeCall function      End-While  ReadDials function      Input the first digit     If a Q was entered, return -5.     Input the rest of the phone number      Call the ToDigit function for each of the 7 digits      not for digit 4     If ToDigit returns -1, return -1     If digit 4 is not a hyphen, return -4.     If digit 1 is 0, return -2.     If digits 1 - 3 are 5, return -3     Otherwise, return 0  ToDigit function     Convert the digit to upper case     Use a switch statement to determine if the digit is valid     and convert the letters to digits      If the digit is invalid, return -1.     If the digit is valid, return 0.  AcknowledgeCall function  Display the Phone Number. |