

Zipcodeconvertor.cpp

User manual

Program: Zipcodeconvertor.cpp

- ◆ This programs converts your zip code to a barcode format and prints it.
- ◆ To run the program double click on the Zipcodeconvertor.exe. A console window will appear asking you to enter your zip code.
- ◆ Type your 5 digit zip code and press enter.
- ◆ After pressing the return key, the program will convert the zip code you entered into barcode format and display it.
- ◆ Then press any key to exit the program and close the console.

System Manual

Program: Zipcodeconvertor.cpp

- ◆ This program converts Zipcode into barcode format.
- ◆ It contains a main function and three user-defined functions : makeCheckDigit, convertDigit and barcode.
- ◆ Two global constant of string data type are initialized and declared.
`const string HALF = ":";`
`const string FULL = "|";`
- ◆ A HALFBAR (:) represents a 0 and a FULLBAR (|) represents a 1.

Main function :

`int main(void)`

- ◆ This function first ask the user to enter the zipcode. The zipcode is then stored in a integer variable named "zipcode".
- ◆ It checks weather the zip code is negative or not. In case the zip code is negative, an error message saying "Error: Invalid Zipcode is printed".
- ◆ In case if the zip code is greater than or equal to zero, the zipcode is then passed as an argument to the user defined function "barcode".
- ◆ the user defined function "barcode" returns the zipcode in barcode format (string data type) which is store in the string variable named bar_code_print.
- ◆ This bar_code_print is then displayed in the screen.

makeCheckDigit :

`int makeCheckDigit(int zipcode)`

- ◆ This is a user defined function that generates a check digit based on the zip code.
- ◆ The zip code stored in "zipcode" variable is passed to this function from the barcode function.
- ◆ This function first adds all the digits in the zipcode. It then subtracts the sum from next greater multiple of 10. The result of this is the check digit which is then returned to function barcode.
- ◆ *This function is called from barcode function only.*

convertDigit:

`string convertDigit(int value)`

- ◆ This function receives the zipcode from the barcode function. The barcode function passes only one digit at a time to this function.
- ◆ It then converts digit it received as an argument (which is stored in variable named value) into its barcode format.
- ◆ After converting the digit to barcode format, it then returns the barcode of the digit back to barcode function.
- ◆ *This function is called from barcode function only.*

barcode

```
string barcode(int zipcode)
```

- ◆ The function is called from the main function.
- ◆ It first add a fullbar to the beginning of the bar_code2, which is the string variable to store the barcode.
- ◆ It then calls the makeCheckDigit function to get the check digit for the barcode.
- ◆ Then the most significant digit of the zipcode is passed to the convertDigit function to convert the digit to barcode. The zip code digit converted in the convertDigit function then returned to this function which is added to the existing string of bar_code2 variable.
- ◆ After the most significant digit, the second most significant digit of the zipcode is passed to the converDigit function. The above point is repeated again. This step goes on for 5 times (i.e. till all the digit of the zipcode is converted into barcode format.
- ◆ After all the five digits of the zipcode is converted to the barcode format and stored to bar_code2 variable, the check digit is passed to convertDigit function to be converted to barcode. Even the check digit converted to the barcode is added to the existing bar_code2 string.
- ◆ A fullbar is then added at the end of bar_code2 variable.
- ◆ The bar_code2 variable now has a fullbar in the beginning, followed by the zipcode in barcode format, a check digit in barcode format after the zipcode and a full bar at its end.
- ◆ This function then returns the bar_code2 variable string to the main function that called this function.

Test Logs

Program: Zipcodeconverter.cpp

A screenshot of a Windows Command Prompt window. The title bar at the top reads "C:\windows\system32\cmd.exe". The main area has a black background with white text. It starts with the prompt "Please enter your zipcode: 19104". Below this, there is a line of characters that appears to be a masked or processed version of the input, consisting of several groups of vertical bars and colons. At the bottom, it says "Press any key to continue . . ." with three dots. On the right side of the window, there are standard Windows window controls (minimize, maximize, close) and a vertical scrollbar.