The US Postal Services uses bar codes to represent zip codes in order to sort them quickly using machines. The machine will read the bar code and direct the letter to the right location. Write a C++ program that generate bar codes. The program should read the zip code (one character at a time) and determines the complete bar code. The code is represented by a series of short and long bars. The following table shows the barcodes for each digit.

Value	Encoding
1	┉‖
2	┉╷┇
3	┉‖┇
4	╷┇┉
5	╷┇╷┇
6	╷‖┉
7	‖┉╷
8	‖╷┇
9	‖╷‖
0	‖┉

Use ':' and '|' to represent short and long bars.

A check digit is also added at the end of the barcode. The check digit is determined by totaling all the digits of the zip code and adding a digit that makes the sum divisible by 10. For example, if the sum of all the digits is 38 then the check digit is 2, if the sum is 40 the check digit is 0, etc.

A long bar is added at the beginning and at the end of the barcode (total of 32 bars). The following is an example of the code 45701 (sum = 17, check digit is 3)

| :|::| :|:|: |:::| ||:::   :::|| ::||: |
     4   5   7   0   1   3
                                             Check
                                             Digit

Your program should generate the codes repeatedly until the user decided to quit. Your program should print an error message if the use enters a non-digit character and ignore it.

Your program must include at least the following two functions (**do not change the names or the prototypes**):
- `string getDigitCode (char digit)`: return a barcode for a single digit
- `int getCheckDigitValue(int sum)`: return the check digit

You are encouraged to add other functions.

You are not allowed to use arrays, strings, or other structures to store the characters. The characters must be read one at time until the new line is encountered.

Sample Run:
```
Enter a zipcode: 45701

Code: |:|::| :|:|: |:::| ||::: :::|| ::||:|
More codes (y/n)? y
Enter a zipcode: 456
Error: zip code must be 5 digits
More codes (y/n)? y
Enter a zipcode: 56-45
Error: Code is invalid
More codes (y/n)? y
Enter a zipcode: 12345
Code: |:::|| ::|:| ::||: :|::| :|:|: :|:|:|
More codes (y/n)? n
```

Hints:

- Use `cin.get(ch);` to read a single character including new line character
- Use `cin.ignore(200, '\n');` to flush the input up to the end of line.

Grading:

Programs that contain syntax errors will earn zero points.
Programs that do not include functions other than main, will also earn zero points.
Programs that use global variables other than constants, will earn zero points.
Programs that use arrays or other structures will earn zero points.

Your grade will be determine using the following criteria:
- Correctness: the program works as requested above (35 points).
  - (5 points) The code is printed correctly (32 bars)
  - (20 Points) The required functions are implemented
  - (10 points) Error checking

- **Documentation and Style (5 points)**

Follow the coding style outline on GitHub:
https://github.com/nasseef/cs2400/blob/master/docs/coding-style.md