p5.18

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1 Specification

Write a program that reads in a bar code (with : denoting half bars and —
denoting full bars) and prints out the zip code it represents. Print an error
message if the bar code is not correct.

2 Analysis/Design

- Get barcode

- Split up the bar code into 5 individual chunks

- calculate the individual zip digits from associated chunks

- display the concatenated zip code

3 Implementation

"p5_18.cpp" 2≡

⟨ *Include files* 4 ⟩
⟨ *get bar code* 3b ⟩
⟨ *print zip code* 3a ⟩

```cpp
int main()
{
        string bar_code = get_bar_code();
        string bar1, bar2, bar3, bar4, bar5;
        bar1 = bar_code.substr(0,5);
        bar2 = bar_code.substr(5,5);
        bar3 = bar_code.substr(10,5);
        bar4 = bar_code.substr(15,5);
        bar5 = bar_code.substr(20,5);

        cout << "The zip code associated with your barcode is: ";

        print_zip_code(bar1);
        print_zip_code(bar2);
        print_zip_code(bar3);
        print_zip_code(bar4);
        print_zip_code(bar5);

}
◇
```

⟨ *print zip code* 3a ⟩ ≡

```
void print_zip_code(string bar_chunk)
{
        if (bar_chunk == ":::||")
                cout << "1";
        else if (bar_chunk == "::|:|")
                cout << "2";
        else if (bar_chunk == "::||:")
                cout << "3";
        else if (bar_chunk == ":|::|")
                cout << "4";
        else if (bar_chunk == ":|:|:")
                cout << "5";
        else if (bar_chunk == ":||::")
                cout << "6";
        else if (bar_chunk == "|:::|")
                cout << "7";
        else if (bar_chunk == "|::|:")
                cout << "8";
        else if (bar_chunk == "|:|::")
                cout << "9";
        else if (bar_chunk == "||:::")
                cout << "0";
        else
        {
                cout << "That is not a valid bar code.";
                exit(1);
        }
}
```
◇
Fragment referenced in 2.

⟨ *get bar code* 3b ⟩ ≡

```
string get_bar_code()
{
        string bar_code;
        cout << "Please enter a valid USPS barcode: ";
        return bar_code;
}
```
◇
Fragment referenced in 2.

These are the include files needed for library function calls

⟨ *Include files* 4 ⟩ ≡

```
#include <iostream>
#include <string>
#include <cstdlib>
using namespace std;
```

◇

Fragment referenced in 2.

4   Test

A test value of

||:|:::|:|:||:::::::||:|::|:::|||

should yield 95014