3 Exercises

The **CandyBar** structure contains **three** members.The first member holds the brand **name** of a candy bar.The second member holds the **weight** (which may have a fractional part) of the candy bar, and the third member holds **the number of calories** (an integer value) in the candy bar.

```
struct CandyBar
{
    char brand[30];
    double weight;
    int calories;
};
```

Write the following functions:

- **void set(CandyBar & cb),** that should ask the user to enter each of the preceding items of information to set the corresponding members of the structure.
- **void set(CandyBar* const cb)** ,that is a overloading function .
- **void show(const CandyBar & cb),**that displays the contents of the structure.
- **void show(const CandyBar* cb),**that is a overloading function .

Here is a **header file named candybar.h**

```
#ifndef EXC_CANDYBAR_H
#define EXE_CANDYBAR_H
#include <iostream>

const int LEN = 30;
struct CandyBar{
    char brand[LEN];
    double weight;
    int calorie;
};

// prompt the user to enter the preceding items of
// information and store them in the CandyBar structure
void setCandyBar(CandyBar & cb);
void setCandyBar(CandyBar * cb);
void showCandyBar(const CandyBar & cb);
void showCandyBar(const CandyBar * cb);

#endif  //EXC_CANDYBAR_H
```

Put together a multi-file program based on this header. **One file**, **named candybar.cpp**, should provide suitable function definitions to match the prototypes in the header file. **An other file named main.cpp** should contain main() and demonstrate all the features of the prototyped functions.

Complete the following two tasks:

1.Write a Makefile file to organize all of the three files for compilation. Run make to test your Makefile. Run your program at last.

2.Create new folder and copy your code to the new folder. Write a MakeLists.txt file for cmake to create Makefile automatically. Run cmake and make, and then run your program at last.

A sample runs might look like this:

```
Call the set function of Passing by pointer:
Enter brand name of a Candy bar: Millennium Munch
Enter weight of the Candy bar: 2.85
Enter calories (an integer value) in the Candy bar: 250

Call the show function of Passing by pointer:
Brand: Millennium Munch
Weight: 2.85
Calories: 250

Call the set function of Passing by reference:
Enter brand name of a Candy bar: Millennium Mungh
Enter weight of the Candy bar: 3.85
Enter calories (an integer value) in the Candy bar: 350

Call the show function of Passing by reference:
Brand: Millennium Mungh
Weight: 3.85
Calories: 350
```