Calculations

Problem 5

Based on your answer in question 1, what year was the hottest and what year was the coldest?

Code Execution: **(screenshot of the code output)**

```
The coldest Land Average Temperature is 6.781333 in 1768
The hottest Land Average Temperature is 9.831000 in 2015
```

Output:

The hottest year is 2015
The coldest year is 1768

Purpose:	**Conflicts:**	**Outputs/Analysis:**	**How we would approach next time:**
The main goal of this program is to identify the coolest and hottest years documented using the land's average temperature temperature data for a specific location.	The main challenge encountered in the question was figuring out a method to identify the coldest years based on the average temperature of the land. It wasn't sufficient to compare each lands temperature, with the national average separately. A separate array, mirroring that of question 1 needed to be generated to facilitate comparisons based on array positions.	The results show information, about the hottest and coldest year determined by the land's average temperature, on land. Upon reviewing the data it is clear that the report confirms that the coldest land average temperature is 6.781333 in 1768 and the hottest land average temperature is 9.831000 in 2015.	The method would be quite similar since it is a question, with only a few approaches to think about; simple and direct.

C operations we used to answer question #5 (Explanation of code)

The analysis section kicks off with a header labeled as Question 5 to mark the beginning of this part. It sets up two groups of variables, hyear and cyear initially at 0 to hold the years with the lowest temperatures. The initial values, for htemperature and ctemperature are both set to the

value in yearlyAverages[0] assuming that yearlyAverages contains the temperatures from 1760 to 2016 with the first entry representing 1760.

Moving through the years;

Using a for loop that runs 256 times (i from 0 to 255) covering the years from 1760 to 2016. The loop goes up to 255 because arrays start at index zero in C and there are a total of 257 years counted from zero. During each iteration it compares if the average temperature of the year (yearlyAverages[i]) is greater than htemperature. If it is htemperature gets updated with this value and hyear is assigned as i. 1760 representing that year.
Likewise it also checks if the average temperature of the year is less, than ctemperature.
If thats the case the temperature gets updated to the value. The year is then set to match.

Displaying the outcomes;

Once the loop ends the code showcases the lowest temperatures recorded in years along, with their average values using printf. The placeholder %d is employed for integer variables (year and current year) while %lf represents variables (highest temperature and current temperature) assuming that yearly averages are stored as doubles. If yearly averages are stored differently (e.g., as floats) %f should be used of %lf.