Practice two easy problems.

1 Exercises

1. Write a short program that finds out if the user is the youngest child in his/her family. First, the program should ask the user for his/her age. Then it should ask for the ages of the user's siblings. Since one doesn't know at the beginning how many siblings the user has, the program should use the special value -1 to signal that the user is done entering ages.

   Note: you are **not** allowed to ask for the number of siblings. You can assume the same age isn't entered twice (no twin or sibling born the same year).

   Here is one example where the user is an only child:

   ```
   Your age: 18
   Sibling age (-1 to stop): -1
   You are the youngest!
   ```

   Here is one example where the user has two younger siblings (ages 5 and 8):

   ```
   Your age: 21
   Sibling age (-1 to stop): 8
   Sibling age (-1 to stop): 5
   Sibling age (-1 to stop): -1
   You are not the youngest!
   ```

   Solution:

   ```
   age = int(raw_input("Your age: "))
   youngest = True
   sib_age = int(raw_input("Sibling age (-1 stop): "))
   while sib_age > -1:
       if sib_age < age:
           youngest = False
       sib_age = int(raw_input("Sibling age (-1 stop): "))
   if youngest:
       print 'You are the youngest!'
   else:
       print 'You are not the youngest!'
   ```

2. The weather has been highly variable of late. Write a function `temp_diff` that takes in a list of daily temperatures (ints) and returns the *average absolute change in temperature* for the given sequence of days. For example:

- `temp_diff([20, 30, 25, 46])` would return `12.0` because the sum of absolute differences is: $(30-20)+(30-25)+(46-25) = 10+5+21 = 36$, and so the average absolute difference over the sequence is $36/3 = 12.0$
- `temp_diff([20, 30, 30])` would return `5.0` because the sum of absolute differences is: $(30-20)+(30-30) = 10+0 = 10$, and so the average is $10/2 = 5.0$
- If the function is called with a list containing only a single temperature, such as `temp_diff([20])`, your function should return 0.

Use only **`while`** loops in your solution.

Solution:

```
def temp_diff(L):
        '''(list of int) -> float
        Given a list L of daily temperatures, returns the
        average absolute change in temperature for the
        given sequence of days.
        '''
        i = 0
        diff = 0
        while i < len(L)-1:  # go until second to last index
                today = L[i]
                tomorrow = L[i+1]
                diff += abs(tomorrow - today)
                i += 1
        if len(L) <= 1:
                return 0
        return float(diff) / (len(L)-1)
```