

HOMework 9

CS 125

due at 12:45pm (classtime) on Thursday, September 24

Write a Python *function* to solve each of the following problems. Plan each function on paper before you implement it in code.

Prepare your solutions in a single Python file. Use comments to clearly state the problem number for each of your solutions. For problems 1, 3, and 4, provide test cases to show that your functions produce the desired output. Upload your file to the [Homework 9 assignment](#) on Moodle.

1. **Largest even number:** Write a function `largestEven(alist)` that accepts a list of numbers as a parameter and returns the largest even number in the list. If the list does not contain an even number, then your function should return `False`.
2. **Sorting input:** Write a function `sortInput()` that reads integers from the user and stores them in a list. Your function should repeatedly input integers until the user enters a 0. Then it should display all of the numbers that the user entered, except for 0, in sorted order from smallest to largest, with one number appearing on each line. You may use either the list `sort` method or the `sorted` function.
3. **First letters:** Write a function `beginsWith(wordlist, char)` that accepts a list of words and a character. Your function should return a new list containing all words in `wordlist` that begin with `char`. For example:

```
beginsWith(["apple", "banana", "cake", "bagel"], "b") returns  
["banana", "bagel"]
```

4. **Proper factors:** Write a function `properFactors(n)` that accepts a positive integer n and returns the list of proper factors of n . Recall that a proper factor is a positive integer less than n that divides n . For example:

```
properFactors(24) returns [1, 2, 3, 4, 6, 8, 12]
```

```
properFactors(49) returns [1, 7]
```