Lab2_5

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Step 1 - Understand the problem

Rephrase the problem

The company needs a script with 3 different function,

1. read_file(filename)

This function is supose to read the file and remove anything that is not a number and return a list of all the numbers of the file and return the list

2. filter_odd_or_even(numbers, odd):

This function will look att all the numbers in the list and see if it odd or even, depending on the bolean value of it will either return a list with the odd or the even numbers in the list and the return the new list

3. reversed_bubble_sort(**numbers**):

Here the script needs to implement the bubble sort algoritm to sort the list from big to smaill numbers

Understanding the words

In the past I've had found it difficult to understand sorting algorithms and I think my problem was that I tried to understand it through code,so I made sure to understand it before starting on code this time around and it helped alot

Step 2 - Devising a plan

Approach of choice

The plan was devised mostly with flowcharts with the exception of the first function that I first did in psuedo code.

readfile(filename)

temp[] , numbers[]

    open file{

        for(each line in file)

        temp=temp + line.split.(" ")

    } close file

for (each x in temp)

{

    numbers.add(int(x))

}

return numbers

```
┌─────────────────────────┐
│  bubble_sort(numbers[]) │
└─────────────────────────┘
            │
            ▼
┌─────────────────────────┐        no
│   go to start of list   │◄──────────────────────┐
└─────────────────────────┘                        │
            │                                       │
            ▼                                       │
┌─────────────────────────┐      y                 │
│   compare next pair      │◄──────────┐            │
└─────────────────────────┘           │            │
            │                          │            │
            ▼                          │            │
        ◇ 1st < 2nd ◇ ──► ◇ is the more pairs we ──► ◇ are we done with ──► ┌──────────┐
            │              need to check ◇            all pasess ◇          │  finish  │
            │ y                    ▲                                        └──────────┘
            ▼                      │
      ┌──────────┐                 │
      │   swap   │─────────────────┘
      └──────────┘
```

```
odd_even(numbers[],odd)
```

want odd?

for each number — done

is odd? — y — append

for each number — done — return list

is even? — y — append