Flajolet Martin Write-Up

Step 1

In the main function, the code first loads and stores the piped stream in a string vector **mystream, for FM estimate.**

Step 2

```
for (int j = 1; j <= 11; j++) {
	vector <long long> runs;
	for (int i = 1; i <= 11; i++) {
		runs.push_back(fmsEstimate(mystream));
	}
	means.push_back(find_mean(runs));
	medians.push_back(find_median(runs));
```

The inner for loop(i) in the main function is used for creating a bin of size 11 of FM estimate. After the inner loop is run, the mean and median* are found for each bin, and the outer for loop is run a second time. The vector **runs** is declared every time the outer for loop runs so as to use it to create a bin of size 11 for each of the outer for loop runs.

At the end of the for loop we have:

a) 11 means for 11 bins

b) 11 medians for 11 bins*)

Step 3

The median of means and the median* of medians is found and outputted.

* Indicates extra work in the form of computing the median of each of the 11 bins and finding the median of medians along with the median of means for a comparative estimate.