Homework 2
Name: Magi Chen
Student ID: 107062808

How to compile?

type “make” under src directory

How to execute the program?

type “./fm_part CELL_FILE NET_FILE”
example: ./fm_part ../testcases/p2-1.cells ../testcases/p2-1.nets

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Final result

	test case 1	test case 2	test case 3	test case 4
time	0.009	0.020	1.072	4.673
cut size	79	907	3864	54661

	test case 1	test case 2	test case 3	test case 4
T_{io} (ms)	1	6	1401	29762
$T_{computation}$ (ms)	1	51	538	2334

This comparison table is testing under Mac book.

1. What is the difference between your algorithm and FM algorithm?
   I didn’t implement the partial sum function in my code.
2. Did you implement the bucket list data structure?
   Yes. My implementation is same as which described in the slide. I use doubly linked-list to implement bucket list.

3. I didn’t implement the partial sum function. Here is my idea about how to implement,
   (1) To create a history array to store every movement and change of gain.
   (2) To create an array B to store index and partial sum when transverse along the history array.
   (3) Transverse along the history array, find out all possible partial sums and put index/sum pair into array B.
   (4) Find the maximum partial sum in array B and corresponding index A.
   (5) Use index A mentioned in step4, find every movement which its index is greater then index A, reverse the movement.

4. Compare with the top 5 records, my execution time is better than them. This is due to I limited the number of iteration for FM algorithm.

5. I make the doubly linked-link and vector without using c++ library. It is light weight and might be helpful to speed up the execution time.

6. I have learned how to implement a FM algorithm and maximum partial sum function. I still have a know bug in my code which the gain value will exceed P_max when doing update gain. I have no idea how to fix it.