Homework 5

Question 1

1

Basically we will do from the bottom to the top. For the third row we will pick the largest value of their offsprings. So D = 4, E = 7, F = 8, G = 6

For the second row, we need to pick the smallest value. So B = 4, C = 6.

Fianlly, we need to pick largest value of the second row for the A, which is 6.

2

Similar to 1, the search begins with D. D is 4, and then a = 4, ß = infinity.

Then E. It finds that 7 > 4, search on this branch will terminate. Then a = negtive infinity, ß = 4.

Then B. B is 4. a = negtive infinity and ß = 4.

Then F. F is 8, then a = 8, ß = infinity.

Then G. G is 6, a = 6, ß = 8.

Then C. C is 6, a = 4, ß = 6.

Then A. A is 6, a = 6, ß = infinity.

3

The right branch of E is pruned.

4

Because if we search all of the nodes it will takes a lot of time, which is unessary because we can skip some nodes and still get the right answer. It will, for the ideal situation, save a half of time for the search.

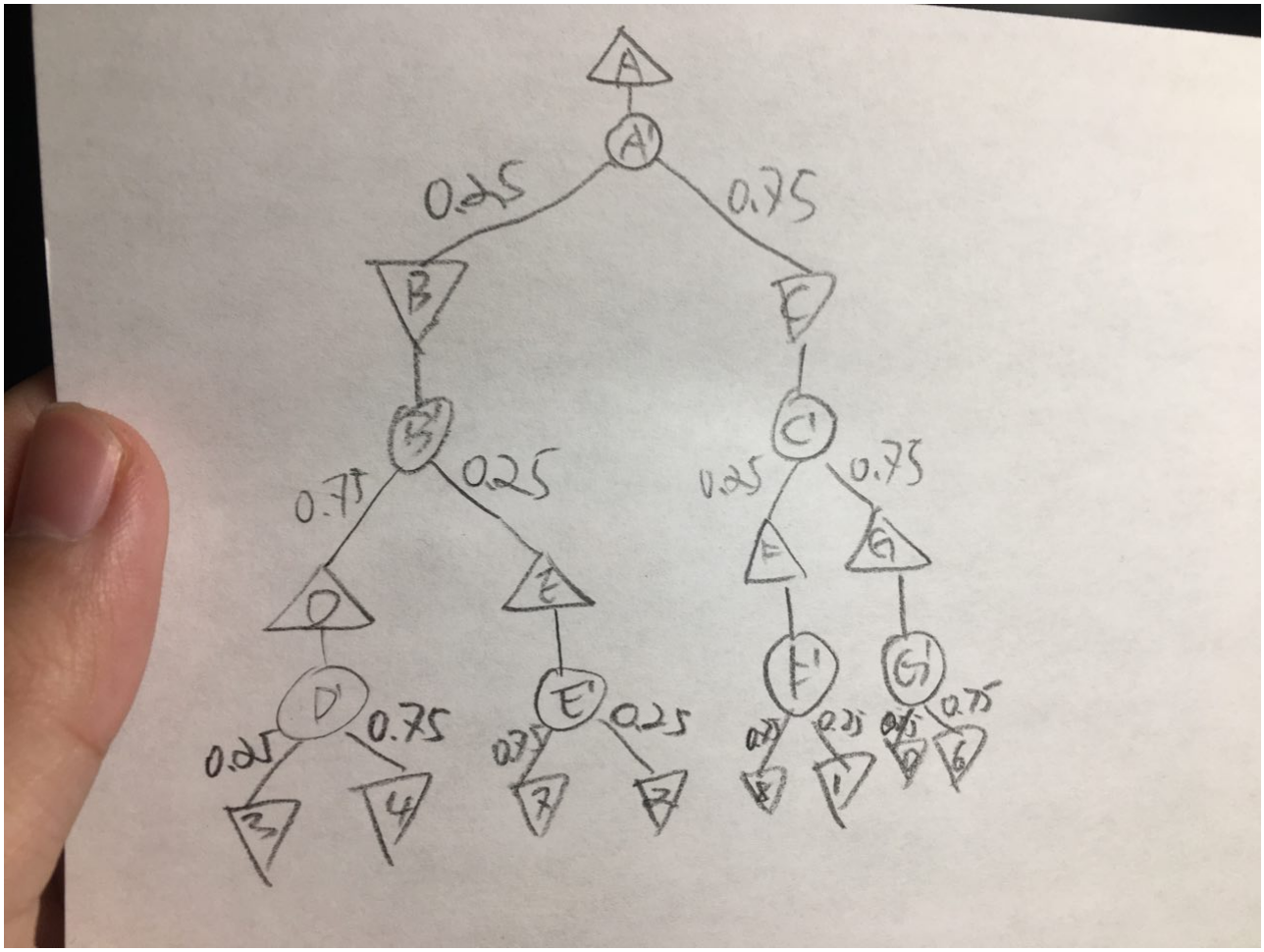
5

There are two opportunities to select the optimal action. The first is heads up in the first turn, which has probability of .5.

The second is, get tails up in the first turn and get one face up that represent selecting optimal, which has probalitity of .5 * .5 = .25

So the overall probability is .5 + .25 = .75

6



7

A 4.77

B 4.25

C 4.94

D 3.75

E 5.75

F 6.25

G 4.50

Question 2

1

I want to use C to implement this method. I'll use getline to get a full line and use a while loop with strtok() to tokenize the line by the space. Each time the strtok() will return a word, and we just need to save those words.

2

There are 202998 words in toal, and there are 19718 distinct words.

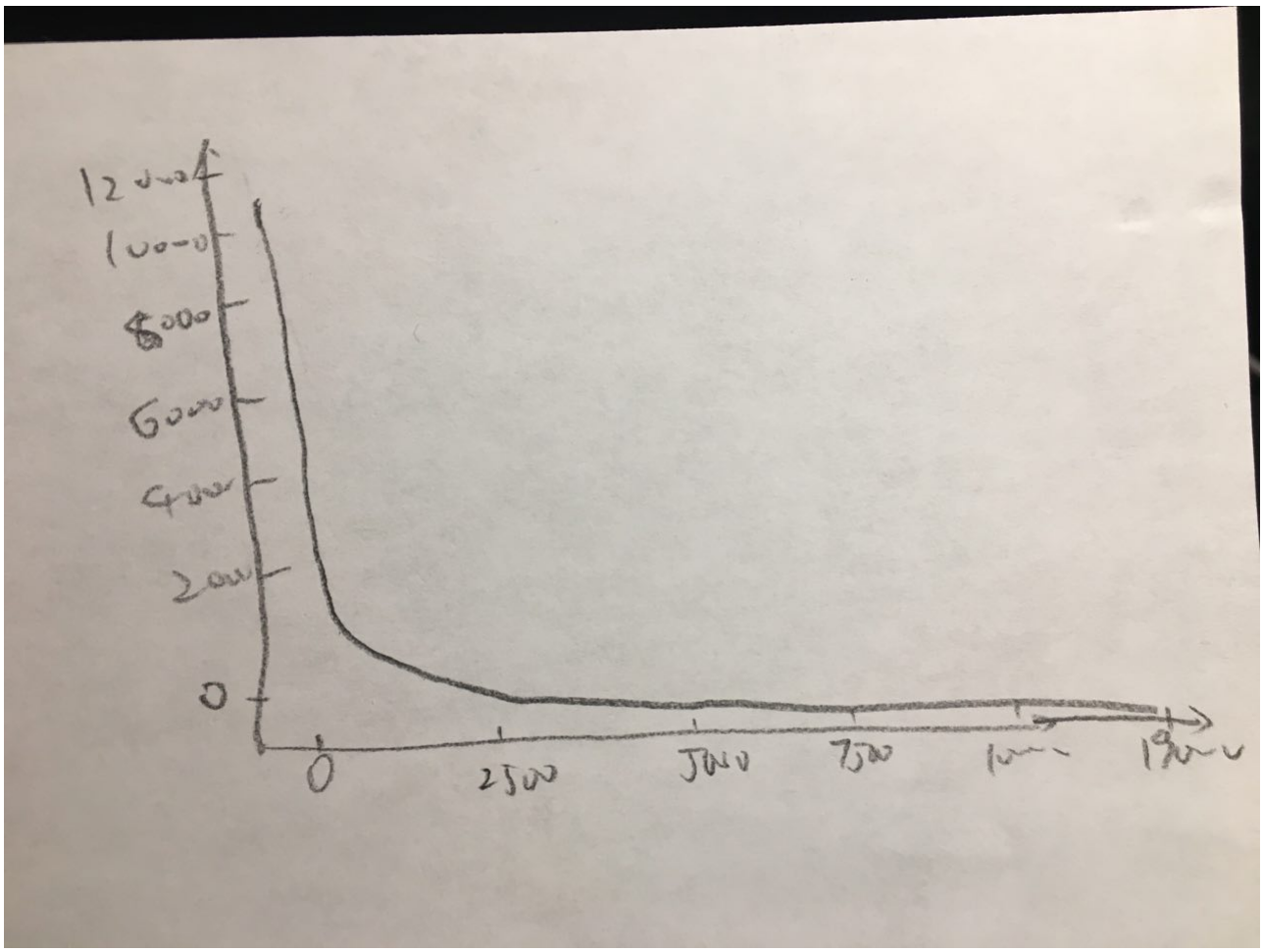
3

frequency	word
11876	the
6825	to
6171	of
5273	and
4429	in
4009	a
3453	that
3381	is
3231	ai
2698	be
2065	will
2043	it
1860	for
1708	as
1637	are
1600	on
1554	not
1441	this
1365	with
1229	intelligence

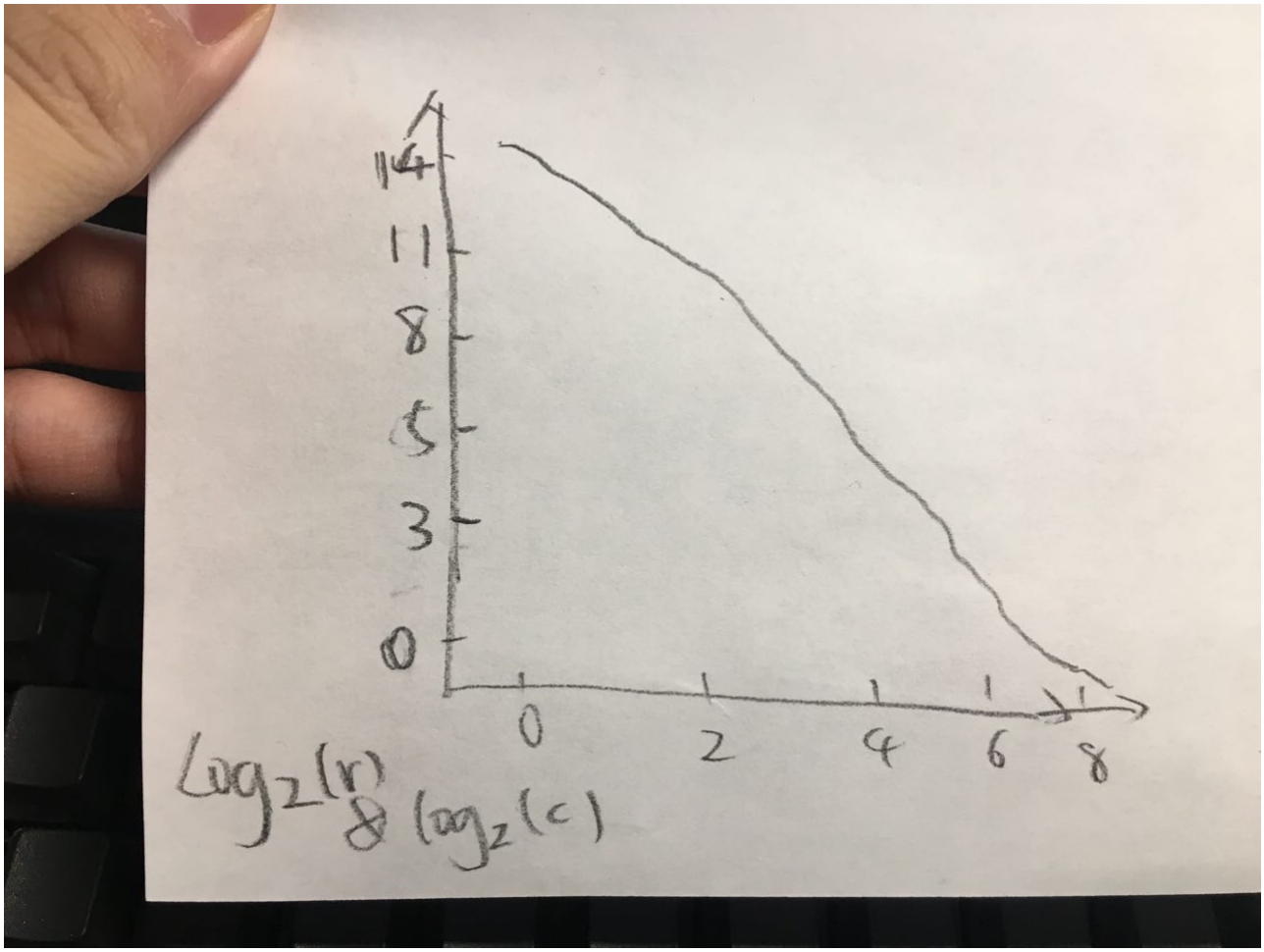
4

frequency	word
1	abstract
1	abrupt
1	abroad
1	abraham
1	aboard
1	abnormal
1	abide
1	abdominal
1	abc
1	abbasi
1	'you
1	'transportation'
1	'top
1	'self
1	'see'
1	's
1	'overview'
1	'drivers'
1	'chauffeurs
1	'artificial

5



6



7

the first curve has very large value at the very first part, and then sharply goes down when x-axis increase.

the second one will also goes down with the increasing of x-axis. relatively linear.

8

The first big issue is the trivival notions will influence the result. For example, "however" and "however, " will be treated as two different words.

The second issue is the capital words. "However" and "however" will be counted as two words.