

Group Exercise 1 Question E

Philipson.S, Melin.O, Palm.J

Algorithm Description

Our algorithm samples $\lceil \log(n) \rceil$ words from Alices wordlist and sends them one by one to Bob, who checks if he's got the same word in his list. If Bob can match at least 10 percent of the words he receives to his own wordlist he believes that it's a fair representation of Alices wordlist as well, and reports the Hypothesis to be true.

Pseudo Code

```
A = List of Alices words
B = List of Bobs words
  where |A| == |B|

n = The length of the lists (|A|)

for i -> 0 to log n
  random sample elem from A
  if elem exists in B
    counter++
  end
end

if counter > (log n)/10
  return true
else
  return false
end
```