An example: choosing

Not differentially private

Differentially private

Let M(A): Choose output S with probability prop. to

exp(epsilon x **happy**(A, S)).

Let M(A): Choose output S with maximizing some fn

happy(A, S).

Must not change by more than ±1 for each change to A.

We could have noisily counted happy(A,S) for each S, but there could be many possible S. Too many counts!

(called the “exponential mechanism”)

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What should I count?

What should I choose?