

SO, WHEN THERE'S A 60% CHANCE OF RAIN...

...BUT, WHEN IT'S NOT RAINING, ONLY 25% OF PEOPLE CARRY AN UMBRELLA



WHEN IT'S RAINING, 80% OF PEOPLE CARRY AN UMBRELLA

WHEN THE OUTCOME OF ONE EVENT AFFECTS THE PROBABILITY OF ANOTHER

DEPENDENT EVENTS

COMMON MISTAKES

PROBABILITY IS JUST AN AVERAGE



THE UNLUCKY FISHERMAN COULD CATCH 4 REAL FISH IN A ROW, EVEN THOUGH HE HAS 3/4 PROBABILITY OF CATCHING A BOOT EACH TIME.

IF YOU FLIP A COIN AND GET HEADS 6 TIMES IN A ROW, WHAT IS THE PROBABILITY THAT THE NEXT ONE IS HEADS TOO?



ANSWER: IT'S STILL 0.5!

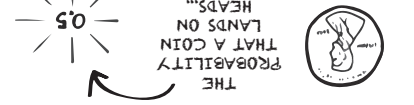
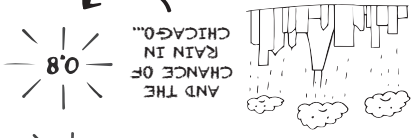


BECAUSE COIN FLIPS ARE INDEPENDENT OF ONE ANOTHER!



INDEPENDENT PROBABILITIES! MULTIPLY!

DO NOT DEPEND ON EACH OTHER!

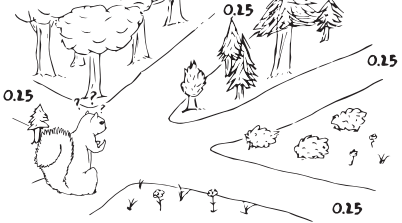


EVENTS WHOSE PROBABILITIES DO NOT DEPEND ON EACH OTHER

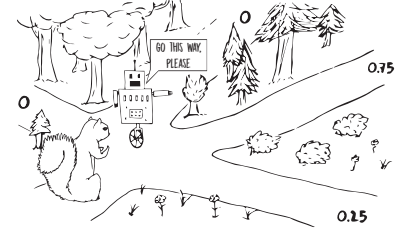
INDEPENDENT EVENTS

QUANTUM COMPUTATIONS

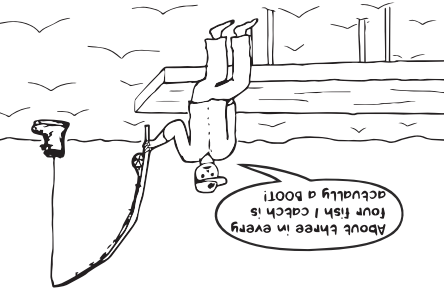
We use probabilities to express the likelihood of each outcome in a quantum computation



And quantum algorithms adjust and refine those probabilities to make the correct outcome the most likely!



FOR THIS UNLUCKY FISHERMAN, THE PROBABILITY OF CATCHING A BOOT IS: $\frac{4}{3} = 0.75$ OR 75%



HOW MANY TIMES ON AVERAGE YOU EXPECT AN UNCERTAIN EVENT TO HAPPEN AFTER A NUMBER OF REPETITIONS

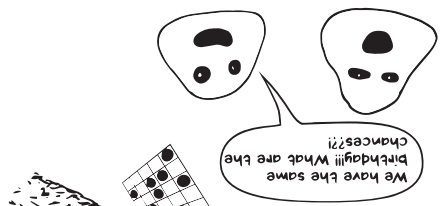
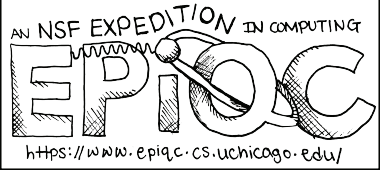
PROBABILITY

Find more Quantum Computing zines here:

<https://www.epiqc.cs.uchicago.edu/resources/>

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UNCERTAINTY & CHANCE... SHOW UP ALL THE TIME IN EVERYDAY LIFE

PROBABILITY JUST THE BASICS

