

The Cards

(5x) $\hat{I} = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$: Identity Operation, otherwise known as 'do nothing'

(5x) $\hat{X} = \begin{bmatrix} 0 & 1 \\ 1 & 0 \end{bmatrix}$: X Operation, a.k.a 'bit flip', $0 \rightarrow 1$, $1 \rightarrow 0$, etc.

(5x) $\hat{Y} = \begin{bmatrix} 0 & -i \\ i & 0 \end{bmatrix}$: Y Operation, a.k.a 'imaginary bit flip', $0 \rightarrow -1$, $1 \rightarrow 0$, etc.

(5x) $\hat{Z} = \begin{bmatrix} 1 & 0 \\ 0 & -1 \end{bmatrix}$: Z Operation, a.k.a 'phase flip'

(10x) $\hat{H} = \frac{1}{\sqrt{2}} \begin{bmatrix} 1 & 1 \\ 1 & -1 \end{bmatrix}$: Hadamard Operation, a.k.a 'superposition maker', $0 \rightarrow \frac{0+1}{\sqrt{2}}$, $1 \rightarrow \frac{0-1}{\sqrt{2}}$

(8x) $CNOT = \begin{bmatrix} I & 0 \\ 0 & X \end{bmatrix}$: CNOT Operation, $\begin{matrix} 00 \rightarrow 00 \\ 01 \rightarrow 01 \\ 10 \rightarrow 11 \\ 11 \rightarrow 10 \end{matrix}$

(7x) $SWAP = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}$: Swap Operation, $\begin{matrix} 00 \rightarrow 00 \\ 01 \rightarrow 10 \\ 10 \rightarrow 01 \\ 11 \rightarrow 11 \end{matrix}$

(1x) *STEAL* : Steal a card, and play it this turn

(4x) *CANCEL* : Cancel a card that has been played this turn

(1x) Rules card

(1x) Extra ways to play card

(1x) List of cards

TOTAL: 50(+3) CARDS

Ways to play

Standard rules

2 - 5 players

7 cards per player, to last the entire game

3 rounds:

1st round: 3 actions/cards per player

2nd round: 2 actions/cards per player

3rd round: 1 action/card per player

Each round, the starting player is chosen randomly, and scores are calculated at the end of each round, to be summated at the end of the game

Actions/cards can be played on any player's qubit

Epic mode

3 - 5 players

7 cards per player, to last the entire game

1 round, starting player to be chosen randomly

Play until out of cards

Duel mode

2 players

7 cards per player, to last the entire game

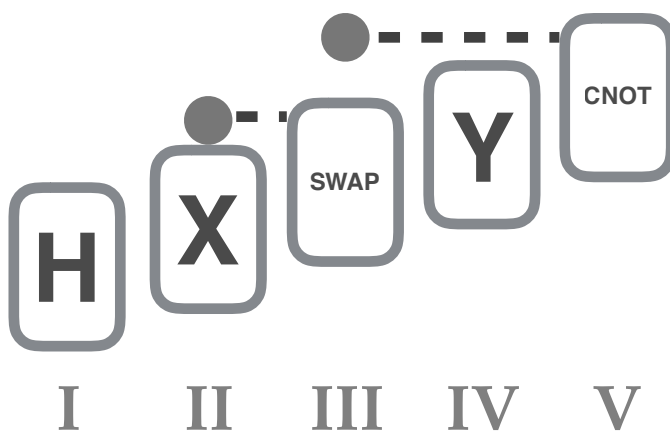
1 round, 5 cards to be played, starting player to be chosen randomly

Modalità italiana

Gioca con le regole standard, ma con più passione

Notation

If Player 1 goes first:



Would be entered into the simulator / quantum computer as:

H1X2S23Y4C35

(Remember: **CONTROL** then **TARGET**)

3 Ways to compute:

Simulate: A standard simulation, with a 'perfect' result

Simulate with noise: Our best guess at how the quantum computer will respond

Go Quantum: Run the experiment on the real IBM QExperience!