Why $\mathbb{P}(\mathbb{N})$ is uncountable

Proof by contradiction.
If $\mathbb{P}(\mathbb{N})$ is countable, then there is a bijection between $\mathbb{P}(\mathbb{N})$ and $\mathbb{N}$, and so we can list these sets $A_0, A_1, A_2, \ldots$.
We will write down these sets in a matrix format with entries 0 and 1, where A_i is represented by i^{th} row.
Hence, $M[i, j] = 1$ if and only if $j \in A_i$.