EPR Pair (Einstein Podoldky Rosen Paradox):

In quantum physics what happens to a particle over here and another particle some million of miles away can be affected. This is how it works when the two subatomic particles interact they can become entangled that is there spin positions or other properties become linked through a process unknown to modern science. The great physicist Albert Einstein describes quantum entanglement as “spooky at a distance “. Now as the particles communicate with each other faster than the speed of light they made Einstien’s theory that nothing can travel faster than light false.

As per the EPR paradox the then proposed quantum theory was lagging some hidden variable which Einstein suggested that this hidden information was responsible for the quantum entanglement.

A Bell state is defined as a maximally entangled quantum state of two qubits. The qubits are usually thought to be spatially separated. Nevertheless they exhibit
perfect correlations which cannot be explained without quantum mechanics.
quantum mechanics allows qubits to be in quantum superposition -- i.e. in 0 and 1 simultaneously, e.g. in either of the states $|+\rangle=1\sqrt{2}(|0\rangle+|1\rangle)$ or $|-\rangle=1\sqrt{2}(|0\rangle-|1\rangle)$

now an epr pair is $|psi\rangle=1\sqrt{2}(|00\rangle+|11\rangle)$ or $|psi\rangle=1\sqrt{2}(|00\rangle-|11\rangle)$