One of the most striking property of our Universe is that it is expanding, namely the distance between the different galaxies is increasing with time. This fact is theoretically well-understood and is well described by the standard cosmological model, the so-called hot Big-Bang scenario, which is based on General Relativity, the theory of the gravitational field developed by Einstein at the beginning of the 20th century. However, in 1998, two teams of astrophysicists carried out more accurate measurements of the expansion and realized that this one is in fact accelerated. This came as a surprise since it was expected to be decelerated simply because gravity, being an attractive force, was supposed to slow down the expansion. The discovery mentioned above is therefore a great mystery and, so far, no satisfactory explanation has been proposed to solve it. This problem has in fact profound and far-reaching theoretical implications since it stands at the cross-roads between General Relativity and Quantum Mechanics. In this talk, I will discuss these questions in a simple and pedagogical manner and I will review the solutions that have been proposed so far with a specific emphasize on one of them, the so-called dark energy.