Stochastic integer programming can be used to model a wide range of design, planning, and operational decisions under uncertainty. The presence of integer decision variables in these models makes them incredibly useful for modeling, e.g., yes/no decisions, but also makes these problems particularly challenging to solve. We provide an introduction to several solution methods for these types of problems, including Benders decomposition, Benders branch-and-cut, and Nonanticipative Lagrangian relaxation. The tutorial will in particular place emphasis on techniques for obtaining stronger relaxations within the Benders framework, which is critical for the success of the method.