Molecular electronics is currently a rapidly evolving field of science that uses both experimental and theoretical methods. Their combination is in many cases unavoidable. This paper will provide the reader with an overview of the experimental methods to investigate nanojunctions and the theoretical description of transport in them. Graphene is a promising candidate in replacing or improving silicon electronics because of its properties. For this reason, our examined systems are derivatives of graphene. The Kwant programming package can simulate quantum transport in nanoscopic systems. Its simplicity of use and low computational requirements make it an ideal environment for simulation. We have simulated quantum transport in graphene nanoribbons using this package and obtained their electronic properties.