Quantum field theory is quintessentially the algebra and analysis of infinite-dimensional dynamical systems, as constrained by quantum phenomenology, causality, and symmetry. Although it has a clear-cut central goal, that of the realistic description of particle production and annihilation in terms of the localized interactions of fields in space-time, it is clear from this description that it is a multifaceted subject. Much of the quantum field theory is of a very general character independent of the nature of space-time. Indeed, a universal formalism applies whether or not there exists an underlying space in the usual geometrical sense. In its primary form, this Abstract: We give a pedagogical introduction to algebraic quantum field theory (AQFT), with the aim of explaining its key structures and features. Topics covered include: algebraic formulations of quantum theory and the GNS representation theorem, the appearance of unitarily inequivalent representations in QFT (exemplified by the van Hove model), the main assumptions of AQFT and simple models thereof, the spectrum condition, Reeh–Schlieder theorem, split property, the universal type of local algebras, and the theory of superselection sectors. Some formulations improved; some explanation and figures added. To appear in “Progress and Visions in Quantum Theory in View of Gravity - Bridging Foundations of Physics and Mathematics” (eds. Introduction to algebraic and constructive quantum field theory I. by John C. Baez, Irving E. Segal, Zhengfang Zhou. p. cm. Â Quantum field theory is quintessentially the algebra and analysis of infinite-dimensional dynamical systems, as constrained by quantum phenomenology, causality, and symmetry. Although it has a clear-cut central goal, that of the realistic description of particle production and annihilation in terms of the localized interactions of fields in space-time, it is clear from this description that it is a multifaceted subject.