Logarithmic Geometry

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Logarithmic geometry was invented, or at least assembled, in the 80's, with the goal of extending an important set of theorems in arithmetic algebraic geometry to the case of "bad reduction." Since then it has grown into a broad and powerful framework for the systematic study of compactification and degeneration in a wide range of settings. It brings together many classical themes, including toric geometry, differential equations, and Hodge theory. I will try to describe the main ideas of the subject, concentrating on the classical case of log schemes over the complex numbers, their associated topological spaces, and their Betti and de Rham realizations.