Aiding conceptualisation in first-year statistics with interactive applets

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Visualisation is an important part of conceptualisation, and interactive computer applets are a medium well-suited for aiding visualisation of statistical concepts. Interactive applets have been used for this purpose in statistics education for many years, however there are still important statistical concepts for which no suitable interactive resources exist. We will report on a series of online interactive demonstration applets currently being developed which explore fundamental concepts of statistics in ways that existing resources do not. The applets are written largely in Mathematica and freely accessible in a browser via the Wolfram Demonstrations Project. We will discuss the pedagogical and technical principles informing the design of the applets and their implementation in first-year statistics classes, and discuss our experiences with Mathematica as a platform for such resources.