Exploring Elementary Statistics with Statcato

Preface

Computer technology is frequently used for performing statistical computations, in fields such as business, medicine, psychology, and engineering. It is indispensable in many real-world applications, when datasets are so large that hand calculations are simply not feasible. Therefore, it is important for a student of statistics to not only understand and apply the concepts behind various statistical computations, but also to know how to use technology to facilitate such computations. Knowing how to effectively utilize technology for statistics is a great asset in many careers.

This laboratory manual explores elementary statistics with the use of Statcato, a free software application for elementary statistics. It is designed to accompany introductory statistics courses being taken by students who are majoring in fields other than math or engineering. It covers the major topics of such courses with detailed instructions on conducting statistical analysis using Statcato.

Each lab consists of (1) using a published data set, generating random data, or collecting sample data from the student's world, (2) using tools in Statcato to perform statistical analysis, and (3) interpreting computer-generated results and drawing conclusions.
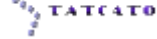
This manual follows the structure of and incorporates modules from the book *Collaborative Statistics*, a wonderful open educational resource developed by Barbara Illowsky and Susan Dean. I hope by providing this open laboratory manual along with the free software Statcato, all students can have access to explore and enjoy the study of statistics.

Margaret Yau

How to Use this Lab Manual

With the exception of the first chapter (Introduction to Statcato), each chapter is a standalone lab activity that illustrates the use of Statcato in performing a statistical experiment.

Students should complete a lab report for each lab activity, documenting the data, analysis, and conclusion of the experiment. Lab report templates are provided both in this manual and on the web at http://www.statcato.org/labs. In a lab activity, you may see the word **LR** followed by a short description. This refers to a corresponding section in the lab report that should be completed.

Procedures in Statcato are indicated by the icon . Each step using Statcato is described, including which menu item is used to invoke specific tools. A menu item location is represented as a path `menu > menu item > sub-menu item`. For example, `File > New Datasheet` refers to the **New Datasheet** menu item under the **File** menu.