Introduction

The Bourbaki Project is a directed acyclic graph of mathematical concept sheets. A **sheet** is a two-page document of concepts, terms, results and notation. The graph is defined implicitly by the dependencies between concepts, terms, results and notation introduced in the sheets.

The graph is defined in such a way as to order the sheets for an unacquainted reader. Suppose the reader wants to understand the mathematical concept of function, defined in the sheet *Functions*. The concept of function uses the concept of a relation, defined in the sheet *Relations*. In turn, the concept of relation uses the concept of ordered pairs, defined in the sheet *Ordered Pairs*. And so on. To understand functions, the reader must first understand ordered pairs.

We say that the sheet *Functions* **needs** the sheet *Relations*. In this sense, it needs all concepts, terms, notation or results in the *Relations* sheet. Likewise the sheet *Relations* needs the sheet *Ordered Pairs*. Of course, in a second sense, the sheet *Functions* needs the sheet *Ordered Pairs*, since any term, concept, result, or notation defined in *Ordered Pairs* may appear in *Functions*.

Naturally, needs are based not only on terms, but also by results and notation, and in the broadest sense, by things that are said in the needed sheet.

We must not forget that the modern digital computer and the screen are the *envy* of every scholar in every age before ours. Let us not rely so much on our prudence in doing as they would.

Yes, there are several things which different people call least squares. And with good reason. But let us decide on what we mean by least squares and so know what we are talking about.

These sheets contain nothing but fiction. And yet, to the best of my knowledge, everything is true.