The Bourbaki Project is a collection of documents describing mathematical concepts, terms, results and notation.

Sheets

We call these documents *sheets*. They are only ever two-pages long and sometimes shorter. They can be printed on a single sheet of paper, hence the name sheet. In a book, they occupy two facing pages. The decision to cap at two pages is arbitrary. But our experience suggests it is convenient.

Prerequisites

Each sheet is labeled with the names of those sheets which are its immediate prerequisites, with the names of those sheets for which it is an immediate prerequisite, and a diagram illustrating the dependencies between all its prerequisites.

For example, the sheet Relations needs the sheet Ordered Pairs. The reason, in this case, is that the concept of a relation is discussed using the concept of an ordered pair of objects. And since the phrase "ordered pair of objects" makes sense only if we know what is meant by object (discussed in the sheet Objects), the sheet Relations needs the sheet Objects also. The reader unacquainted with ordered pairs and objects must read (at least) these two sheets before the sheet on relations. In this case (and in every case) the prerequisites are naturally ordered. Objects ought to be read first, before Ordered Pairs, before Relations. Such an ordering always exists because we ensure that if a sheet X needs a sheet Y, then Y can not need X or any sheet that needs X. A sheet is an immediate prerequisite if it is not prerequisite to any other prerequisite.

Preface

The project is like a map. The landmarks are sheets, or really concepts. Walking is reading. And you must walk along the trails specified by the prerequisites.

Aims

Our primary aim is two-fold. First, to provide useful exposition to teach the concepts to an unacquainted reader (here the prerequisites help). And second, to serve as a reference for further work. It is a welcomed concomitant that we better understand and develop the mathematical concepts ourselves.

Caveats

There are two caveats. First, we give only one path to concepts. The point is that our way of structuring the concepts (and hence the prerequisites) is just one way, and there are many ways, since there are equivalent concepts, alternate proofs, and so on. The second caveat is a wink. These sheets are fiction. They contain only ideas. We have done our best to eliminate all false statements. The game for the practical cogitator is to fit these puzzle pieces to reality.

Introduction