



## METADATA

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**Authors:** Sgarbas, K., Associate Professor, UPATRAS

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### Abstract

This e-book is a laboratory guide that aims to meet the needs of students attending courses in Artificial Intelligence, Logic Programming or other courses of similar content. It contains 13 extensive lab exercises for learning the Prolog programming language with applications in Artificial Intelligence, problem solving, searching, constraint satisfaction, and game playing. The exercises are grouped into two parts. In the first part, exercises 1 through 7 focus on learning the Prolog language. In the second part, exercises 8 to 13 concern applications of Prolog to Artificial Intelligence problems. Each chapter contains separate sections with the presentation of the exercise, an indicative solution, a detailed explanation with the reasoning behind the solution, observations

on the solution and, where applicable, alternative solutions. The exercises are of increasing complexity. They start with simple questions in the Prolog knowledge base and work their way up to sophisticated algorithms that solve more complex problems. In the first 8 chapters, each exercise is preceded by a background section summarizing the elements of Prolog theory that the reader needs to know in order to solve the exercise. This lab guide assumes that the reader is already familiar with the basic theory of Logic Programming and Artificial Intelligence, so it does not attempt to repeat elements of the theory, but only briefly covers elements of the Prolog language in the background section of the initial exercises, so that the guide should be as self-contained as possible.

