Title

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Intro — Introduction to the Mata manual

Contents Description Remarks and examples References
Also see

Contents

Section	Description
[M-1]	**Introduction and advice**
[M-2]	**Language definition**
[M-3]	**Commands for controlling Mata**
[M-4]	**Categorical guide to Mata functions**
[M-5]	**Alphabetical index to Mata functions**
[M-6]	**Mata glossary of common terms**

Description

Mata is a matrix programming language that can be used by those who want to perform matrix calculations interactively and by those who want to add new features to Stata.

The *Mata Reference Manual* is comprehensive. If it seems overly comprehensive and too short on explanation as to why things work the way they do and how they could be used, we have a suggestion. See *The Mata Book* by William Gould (428 pages) or *An Introduction to Stata Programming* by Christopher Baum (412 pages). Baum's book assumes that you are familiar with Stata but new to programming. Gould's book assumes that you have some familiarity with programming and goes on from there. The books go well together.

Remarks and examples

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This manual is divided into six sections. Each section is organized alphabetically, but there is an introduction in front that will help you get around.

If you are new to Mata, here is a helpful reading list. Start by reading

[M-1] **First**	Introduction and first session
[M-1] **Interactive**	Using Mata interactively
[M-1] **How**	How Mata works

You may find other things in section [M-1] that interest you. For a table of contents, see

[M-1] **Intro**	Introduction and advice

Whenever you see a term that you are unfamiliar with, see

[M-6] **Glossary**	Mata glossary of common terms

Now that you know the basics, if you are interested, you can look deeper into Mata's programming features:

[M-2] **Syntax**	Mata language grammar and syntax

[M-2] **Syntax** is pretty dense reading, but it summarizes nearly everything. The other entries in [M-2] repeat what is said there but with more explanation; see

[M-2] **Intro**	Language definition

because other entries in [M-2] will interest you. If you are interested in object-oriented programming, be sure to see [M-2] **class**.

Along the way, you will eventually be guided to sections [M-4] and [M-5]. [M-5] documents Mata's functions; the alphabetical order makes it easy to find a function if you know its name but makes learning what functions there are hopeless. That is the purpose of [M-4]—to present the functions in logical order. See

[M-4] **Intro**	Categorical guide to Mata functions
Mathematical	
[M-4] **Matrix**	Matrix functions
[M-4] **Solvers**	Matrix solvers and inverters
[M-4] **Scalar**	Scalar functions
[M-4] **Statistical**	Statistical functions
[M-4] **Mathematical**	Other important functions
Utility and manipulation	
[M-4] **Standard**	Functions to create standard matrices
[M-4] **Utility**	Matrix utility functions
[M-4] **Manipulation**	Matrix manipulation functions
Stata interface	
[M-4] **Stata**	Stata interface functions
Date and time	
[M-4] **Dates**	Date and time functions
String, I/O, and programming	
[M-4] **String**	String manipulation functions
[M-4] **IO**	I/O functions
[M-4] **Programming**	Programming functions

References

Baum, C. F. 2016. *An Introduction to Stata Programming*. 2nd ed. College Station, TX: Stata Press.

Gould, W. W. 2018. *The Mata Book: A Book for Serious Programmers and Those Who Want to Be*. College Station, TX: Stata Press.

Also see

[M-1] **First** — Introduction and first session

[M-6] **Glossary**

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