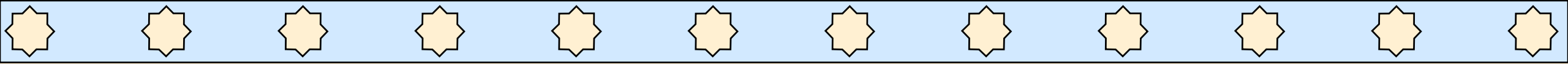


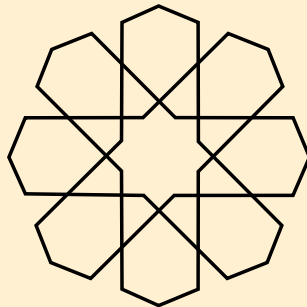
Scientific Method for Wikimedians

Introduction to the course



Michel BAKNI

2023



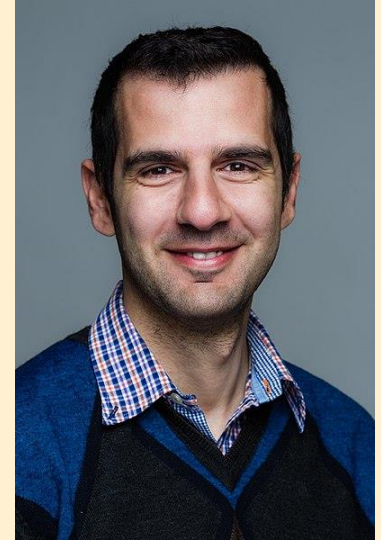


Outlines

- ✦ **Author Biography**
- ✦ **Course Structure**
- ✦ **Learning Outcomes**
- ✦ **General Notes**
- ✦ **Recommended References**

I Author Biography

★ **Michel BAKNI** (ORCID: 0000-0003-2963-8799 | ISNI: 0000 0005 0354 6620)



[Bakni CC BY]

◆ Ph.D. in Electronics

◆ +7 years experience: research & higher education

◆ Pedagogical engineer: ESTIA*, France

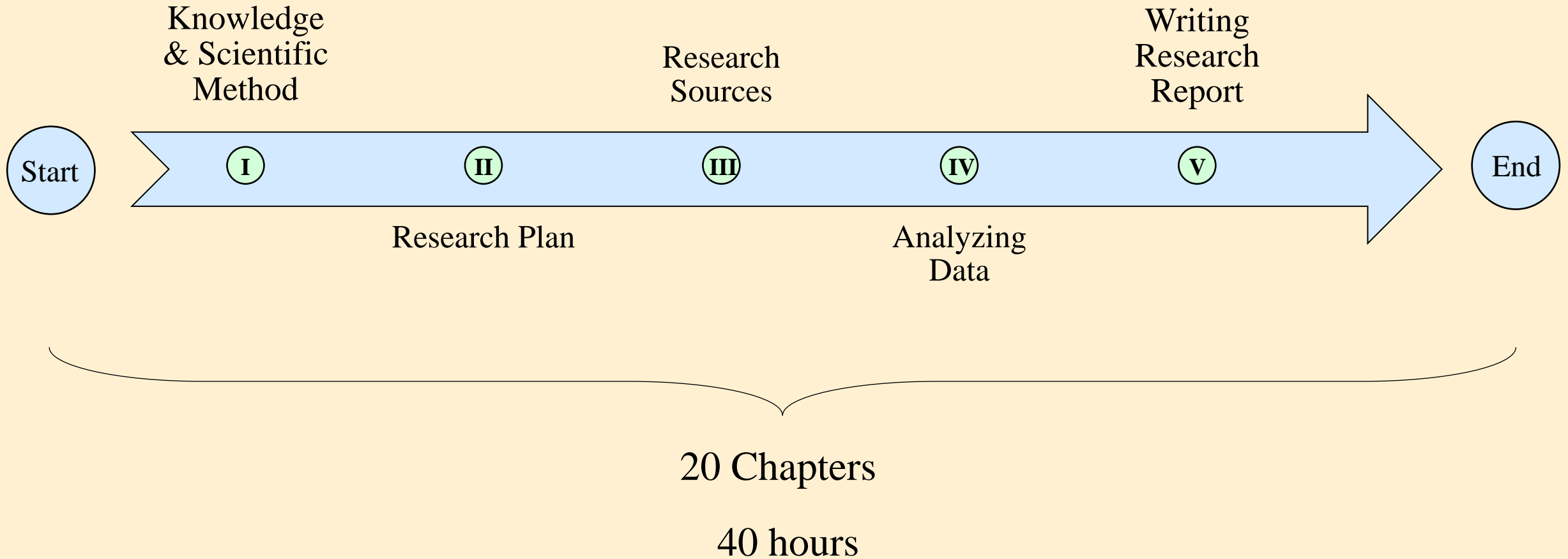
★ Recent Publications:

◆ Internet Protocol : IPv4 & IPv6 (2022), ISBN: 9782957688708

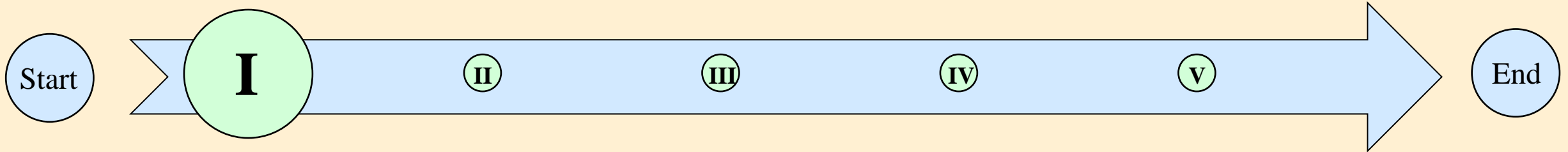
◆ The Bipolar Transistor: the concept and the applications (2019), ISBN: 9782957688708

* ESTIA: École Supérieure des Technologies Industrielles Avancées

II Course Structure



II Course Structure



Part I: Knowledge & Scientific Method

Chapter 1: Knowledge & its types

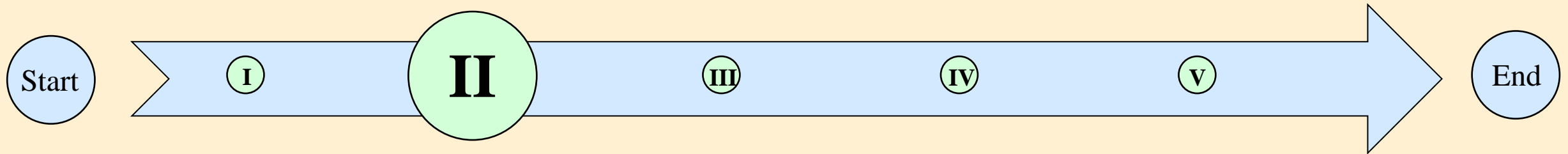
Chapter 3: Research Methodologies

Chapter 2: Scientific facts

Chapter 4: Scientific Methods

Chapter 5: Research Question

II Course Structure



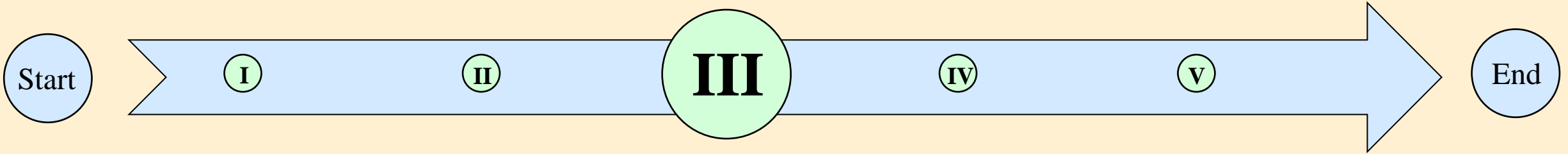
Part II: Research Plan

Chapter 6: Defining Research Question

Chapter 7: The state-of-the-art

Chapter 8: Designing a Research Method

II Course Structure



Part III: Research Sources

Chapter 9: Publication & How to use them **Chapter 12:** Direct Question

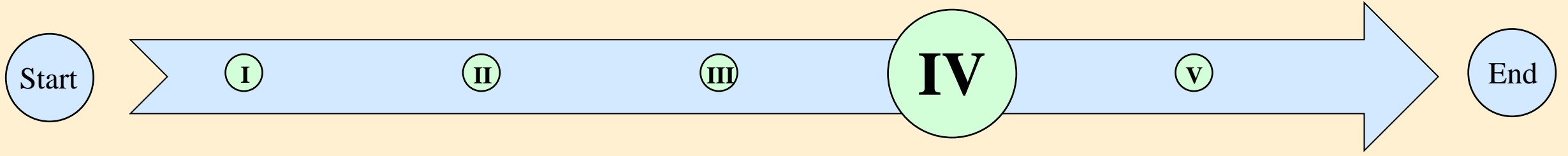
Chapter 10: Field Sampling

Chapter 13: Indirect Question

Chapter 11: Samples & their Types

Chapter 14: Ethics of the Research

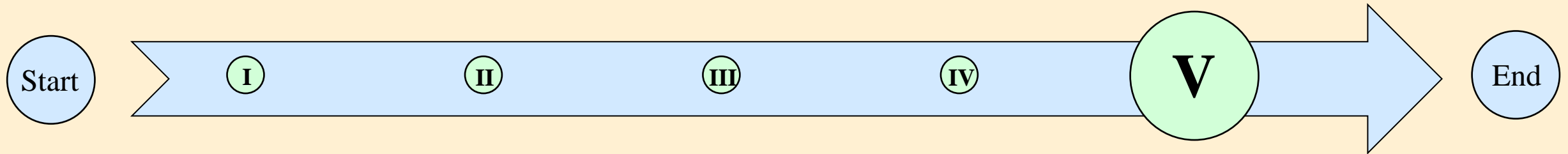
II Course Structure



Part IV: Analyzing Data

<u>Chapter 15:</u> Preparing Data	<u>Chapter 17:</u> Graphics
<u>Chapter 16:</u> Handling Data Tables	<u>Chapter 18:</u> Statistics

II Course Structure



Part V: Writing Research Report

Chapter 19: Writing down the Research

Chapter 20: Formatting of the Research

III Learning Outcomes

- ★ Understand the philosophical and historical aspects of the scientific method
- ★ Learn how to create a research plan
- ★ Understand what the are the acceptable sources in the scientific domain & learn how to cite correctly
- ★ Learn how to create surveys & how to analyze collected data
- ★ Learn how to write & format the research report

IV General Notes

*** Prerequisite**

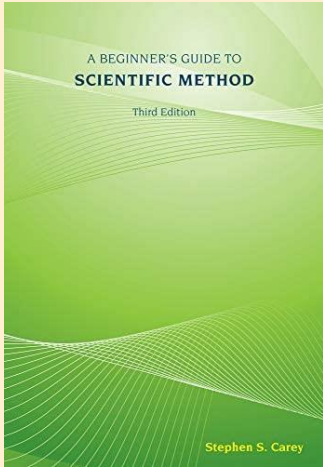
- ◆ Solid Knowledge of English
- ◆ Basic knowledge of Math & Statistics
- ◆ Basic knowledge of Microsoft office (Word & Excel)

*** Recommendations**

- ◆ Abstract concepts & philosophical ideas
- ◆ Stay present & close all windows
- ◆ Take notes
- ◆ 40h Course: Organize time & create your rhythm



Recommended References



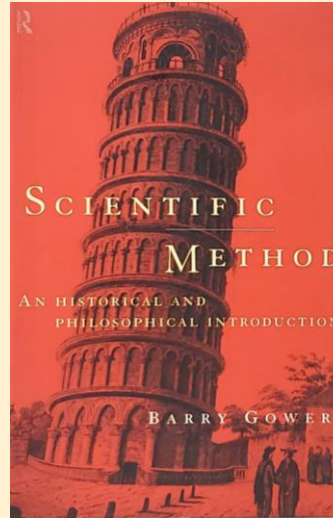
Stephen S. Carey (2012)

A Beginner's Guide to Scientific Method

United States: Cengage Learning

ISBN: 978-1-111-30555-0

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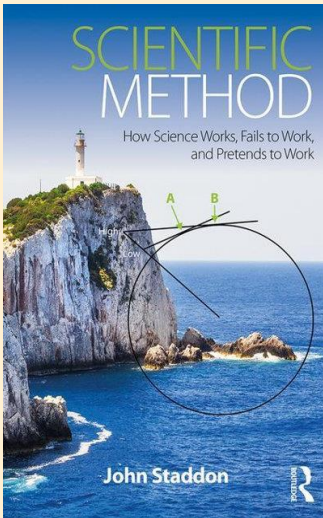


Barry Gower (2012)

Scientific Method: A Historical and Philosophical Introduction

United Kingdom, Taylor & Francis

ISBN: 978-1-134-80630-0

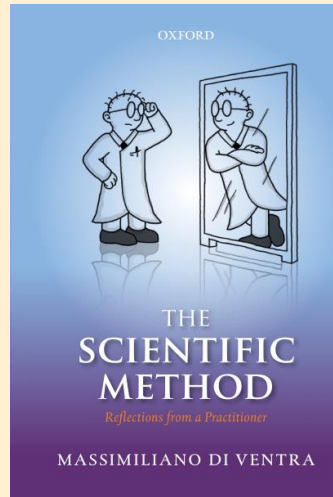


John Staddon (2017)

Scientific Method: How Science Works, Fails to Work, and Pretends to Work

United Kingdom: Taylor & Francis

ISBN: 978-1-351-58690-0



Massimiliano Di Ventra (2018)

The Scientific Method: Reflections from a Practitioner

United Kingdom: Oxford University Press

ISBN: 978-0-19-882562-3

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Recommended References

- ★ Cameron, S., Soutee, S., Craig, C. (2010). **Scientific Method Investigation: A Step-by-Step Guide for Middle-School Students**. United States: Mark Twain Media.
- ★ Kosso, P. (2011). **A Summary of Scientific Method**. Netherlands: Springer Netherlands.
- ★ Sankey, H., Nola, R. (2014). **Theories of Scientific Method: An Introduction**. United Kingdom: Taylor & Francis.
- ★ MacRitchie, F. (2018). **The Need for Critical Thinking and the Scientific Method**. United Kingdom: CRC Press, Taylor & Francis Group.
- ★ Armstrong, J. S., Green, K. C. (2022). **The Scientific Method: A Guide to Finding Useful Knowledge**. United Kingdom: Cambridge University Press.

Course Title: Scientific Method for Wikimedians

Course Creator: Michel BAKNI

Video Title: Introduction to the course

Film Editing : Sandra HANBO

Date: January 2023



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