

Segmentation and indexation of complex objects in comic book images

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Outlines

- Introduction
- Document image analysis
- State of the art of comics analysis
- Contributions
- Experimentations
- Conclusions

Outlines

- Introduction
 - Comic books
 - History of comics art
 - Market place
 - Comics project
 - Objectives of the thesis
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“juxtaposed pictorial and other images in deliberate sequence, intended to convey information and/or to produce an aesthetic response in the viewer” Mc Cloud, 1993

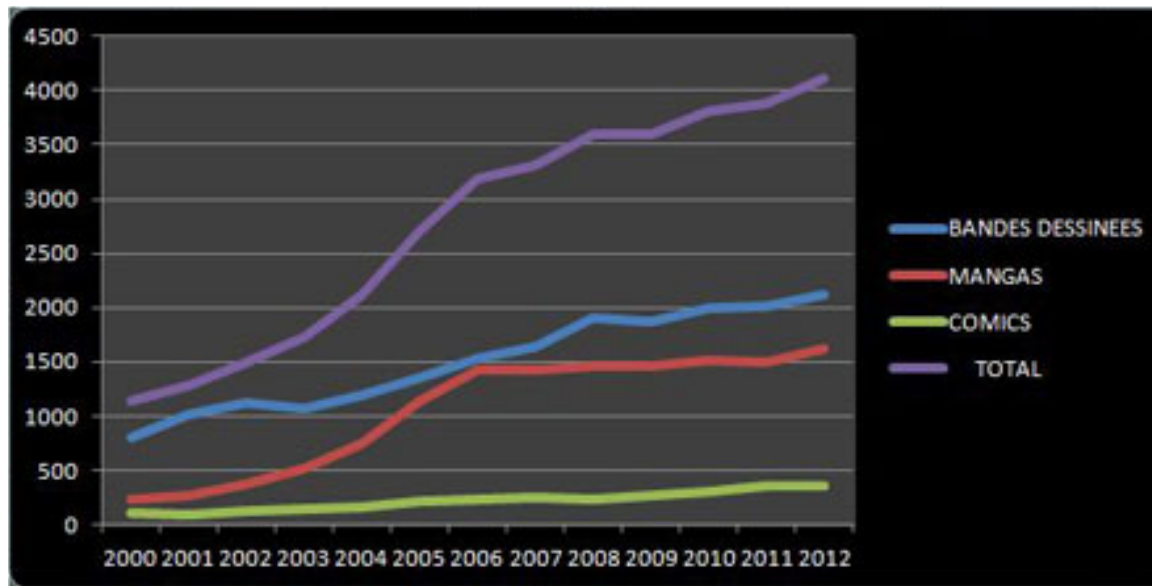
“a visual medium used to express ideas via images, often combined with text or visual information” Wikipédia, 2014

- One of the most popular and familiar forms of graphic content
-

- Prehistory: painting of animals and hunters in caves
- 1846: Rodolphe Töpffer, the inventor of the “bandes dessinées”
- 1930s: magazine-style comic books in the US
- 1950s: massive production of manga in Japan (Osamu Tezuka)
- 1971: the term of ninth art is attributed to comics art (Francis Lacassin)
- 1996: explosion of the Internet bubble and webcomics
- 2007: adaptation to social media sites and mobile devices

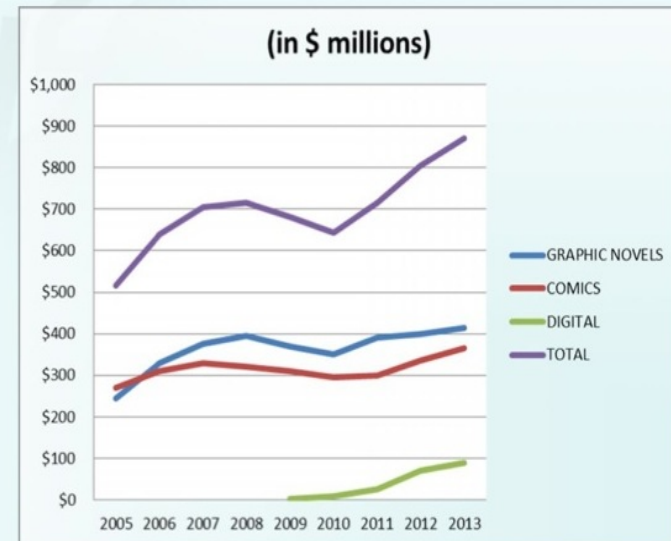
Market place

Introduction



Francophone comics production

Infographie (c) L'Agence BD d'après les chiffres de Gilles Ratier/ACBD.



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Comics market in the US

Milton Griepp's White Paper, ICv2 Conference 2014

- What?
 - Add value to paper-based comics using the new technologies
- Why?
 - Answer to a real need from librarians, advertisers, readers
 - Text/image search, reflowable document, augmented reading, translation assistant
- How?
 - Extracting content of digitalized comic books (e.g. panels, balloons, text, comic characters)
 - Retrieving the semantic of the elements (e.g. read before, said by, thought by, addressed to)
- Supported by L3i lab
- 2 Ph.D. student, 6 professors, 1 engineer and post doc (one year)
- Public founding
 - CPER 2007-2013 (State-Region Project Contract)
 - PHC-Sakura 2014-2016 (France/Japan Bilateral Joint Research Project)
 - PIA-Big Data 2015-2017??? (future investment project with French company/labs)

- **Propose** generic methods for **content extraction** of **digitalized comic books**
- **Indexation of content???**
- Duration 36 months
- Challenges:
 - **Recent** field of research with a **largely unknown**
 - The documents are **semi-unstructured**, **free-form** and with **complex background**

Outlines

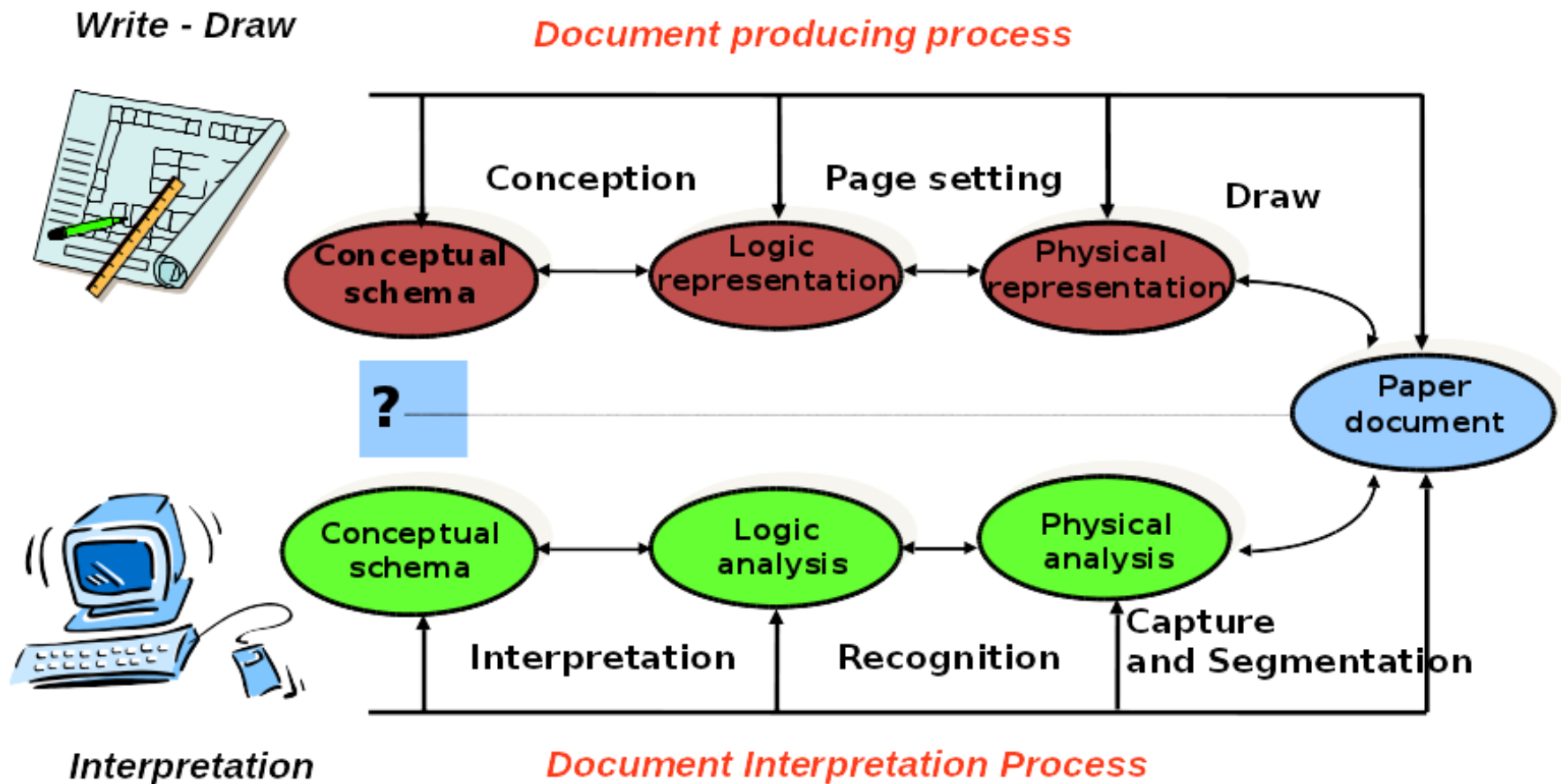
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Outlines

- Introduction
- Document analysis
 - Conception to interpretation
 - Document type comparison
 - Comic books creation process
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Conception to interpretation

Document analysis

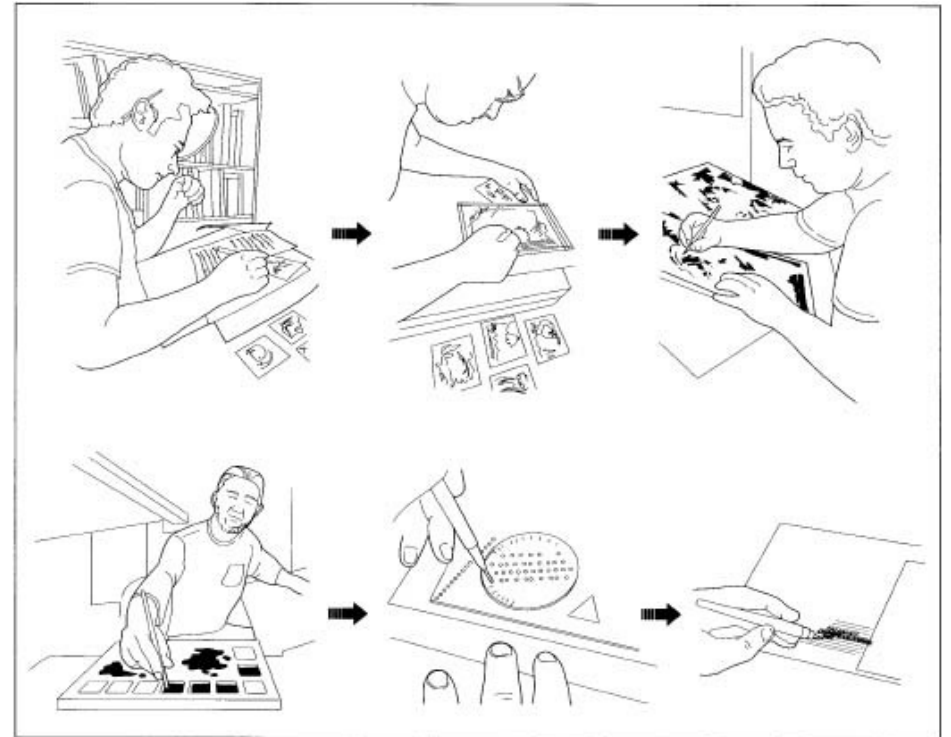


Handbook of Document Image Processing and Recognition. Springer, 2014

Comic books production

Document analysis

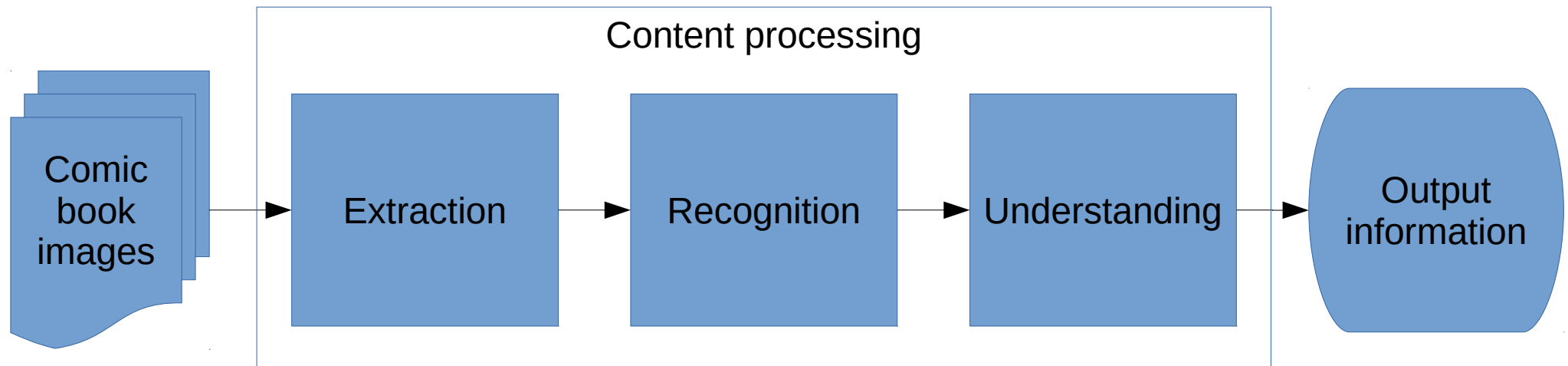
- Synopsis and scenario
- Pencil drawing
- Inking
- Flatting and colouring
- Lettering and sound effects



<http://www.madehow.com/Volume-6/Comic-Book.html>

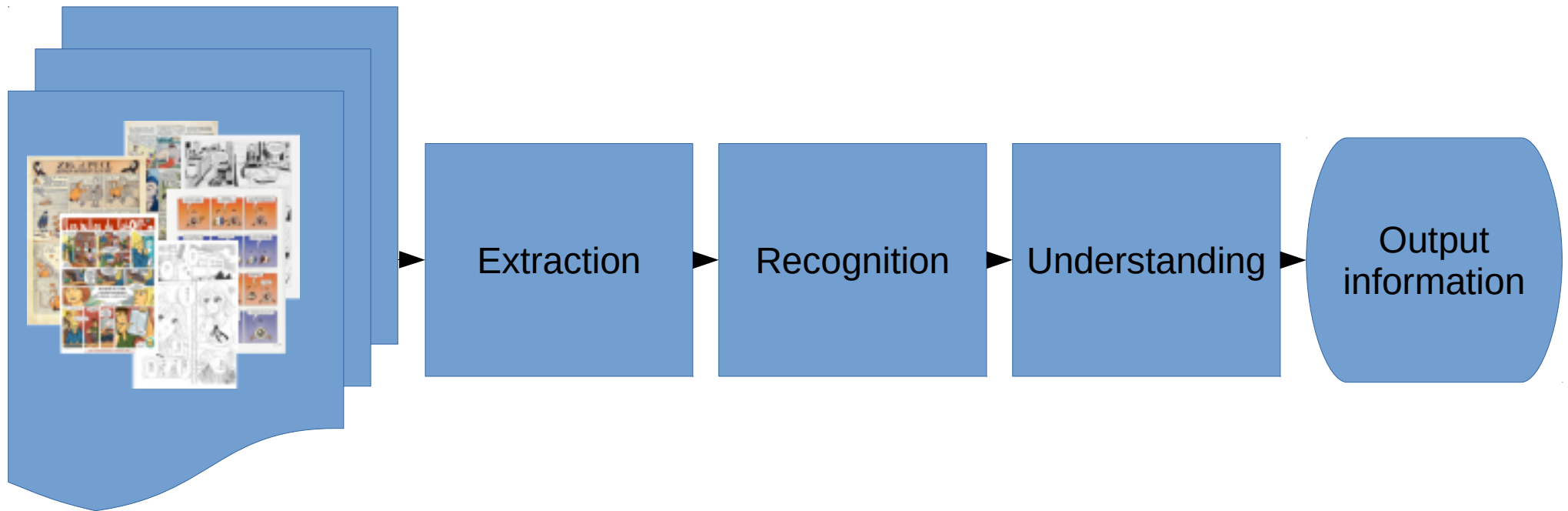
Comic books interpretation

Document analysis



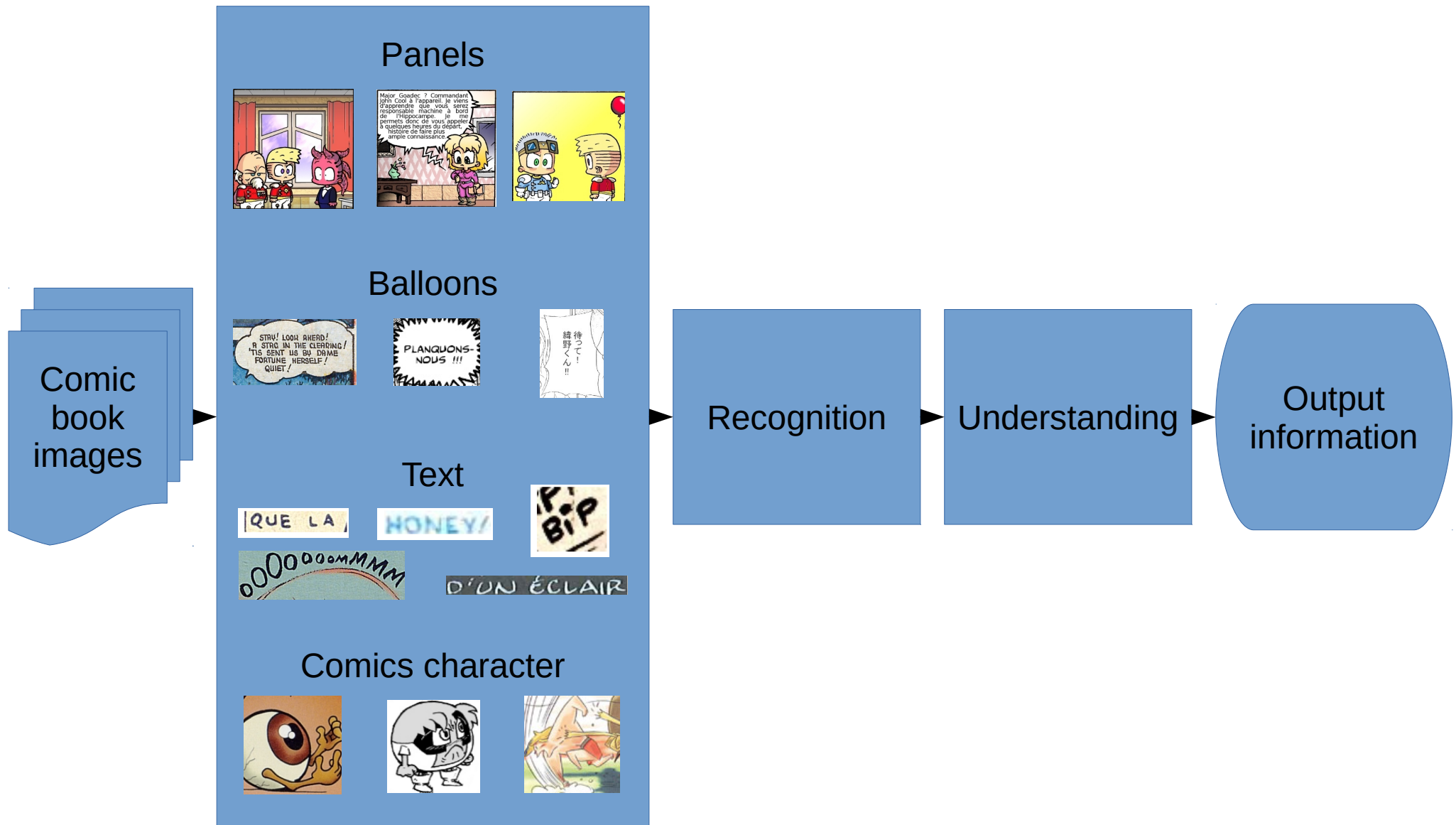
Comic books interpretation

Document analysis



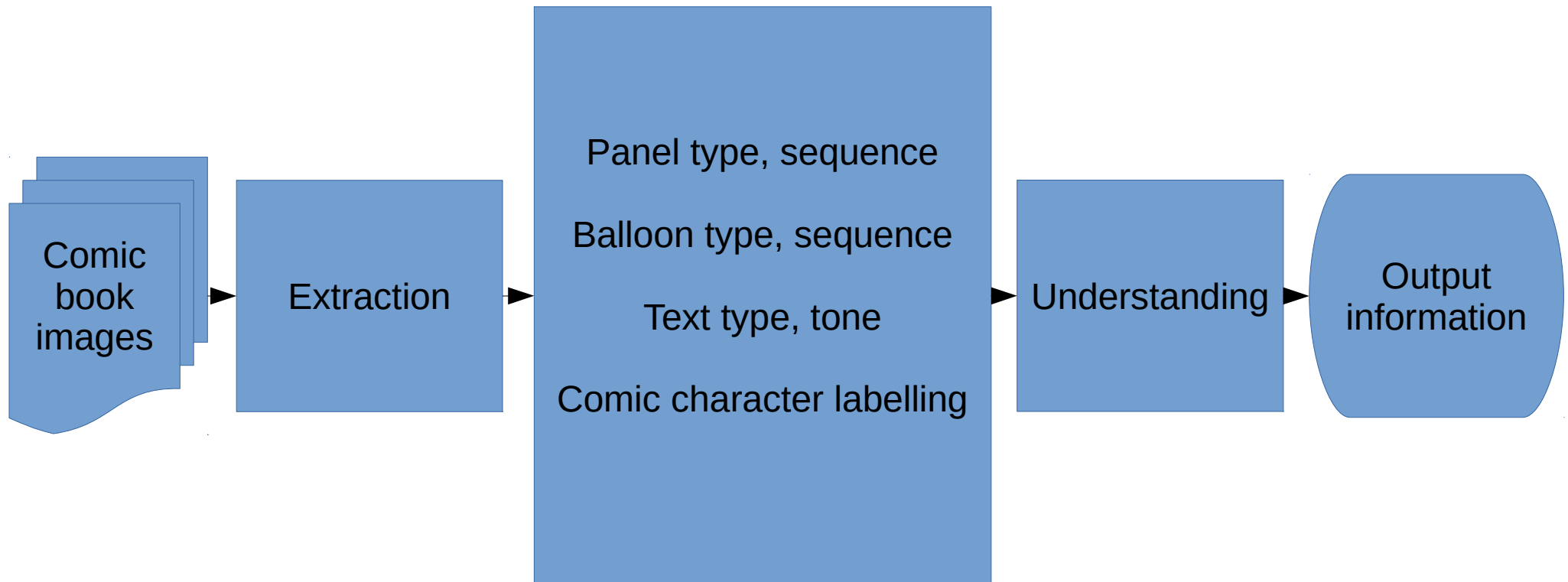
Comic books interpretation

Document analysis



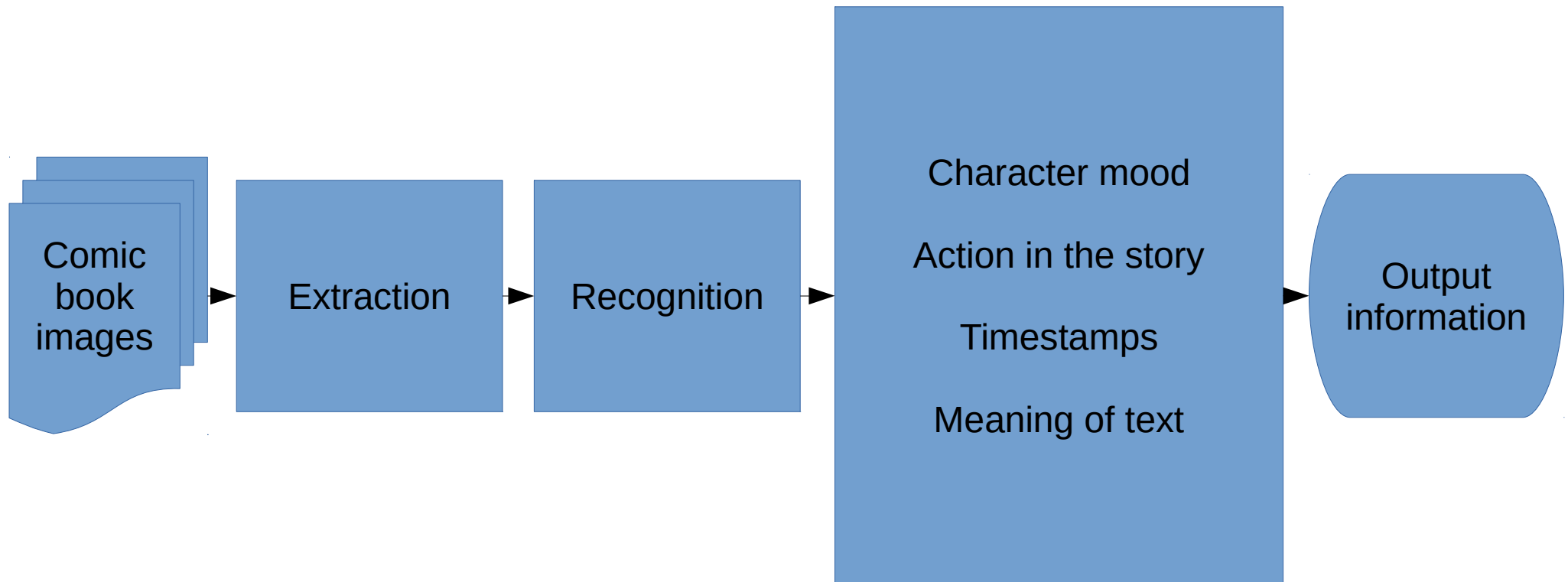
Comic books interpretation

Document analysis



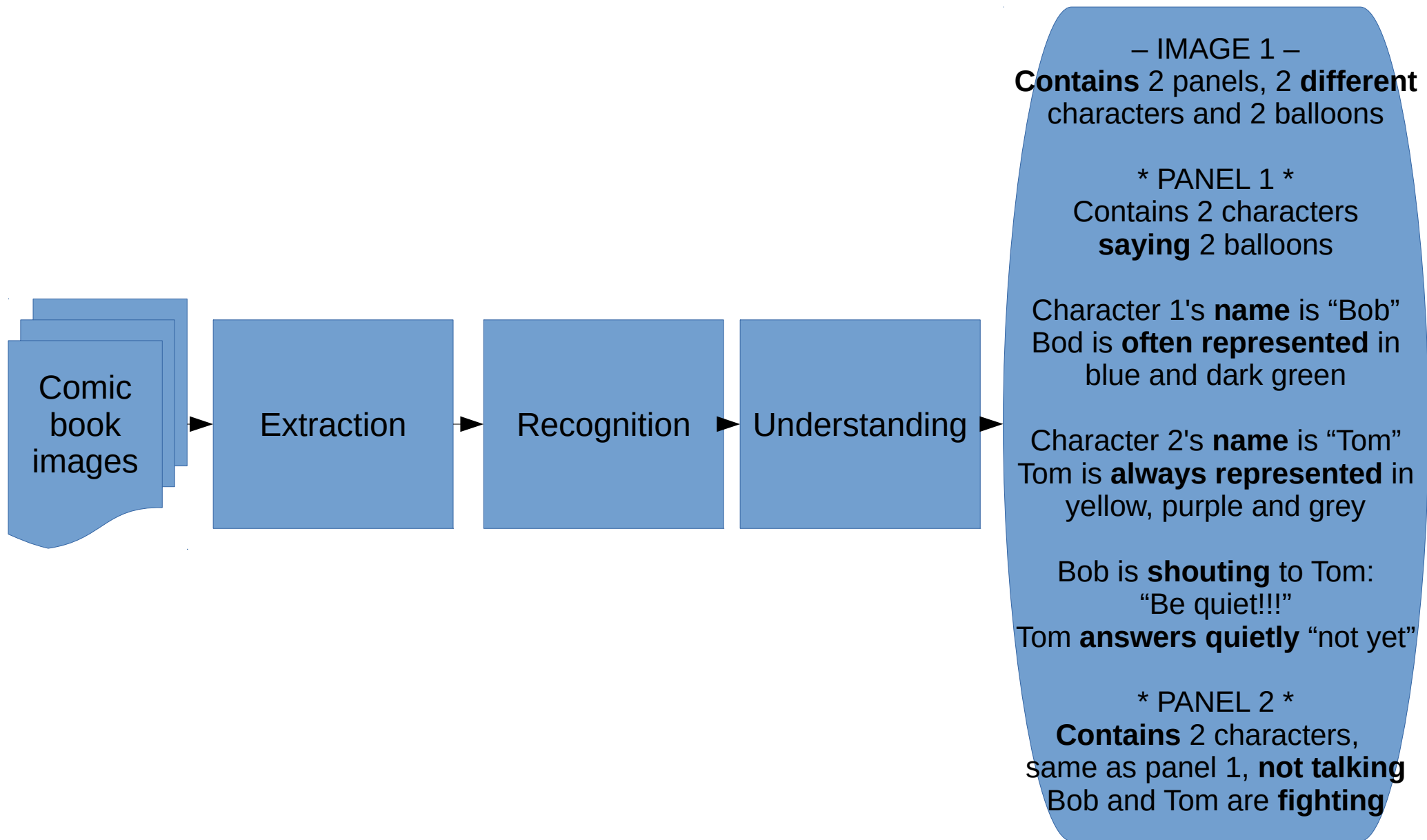
Comic books interpretation

Document analysis



Comic books interpretation

Document analysis



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