Основи на LaTeX

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1 Bibliography

2 LaTeX vs Word processors

3 First LaTeX Document

4 Structure of a LaTeX document

5 Tools you need

6 Environments and commands

7 Spaces & Special characters

8 Advanced topics

Литература:

- T. Oetiker *et al*, *The not so Short Introduction to LaTeX*, version 5.01 (2011).
  Превод от Ст. Караколева, *Не много кратко въведение в LaTeX, версия 4.04 (2004).*
- G. Gonzato, *LaTeX for Word Processor Users, version 1.0.6* (2003).
- P. Flynn, *A beginner's introduction to typesetting with LaTeX* (2003).
- …

Дисертация (около 100 страници)

- Title page
- Foreword
- Table of contents
- Chapter 1
- …
- Chapter $i - 1$
- Chapter i
- Chapter $i + 1$
- …
- Chapter n
- Appendices
- Bibliography

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Проблеми с фигури, формули (ако има такива) и *особено* с литературата и съдържанието.

WYSIWYG editors (MS word, LO writer, OO writer, …)

- May loose logical structures
- Automatic numbering & cross-referencing hard to achieve (mostly completed by hand)
- Different results on different computers & versions
- No control over the document
- Large in size files

LaTeX

- Result is machine (hardware & software) independent
- Document control
- Automation of cross-referencing, bibliographies, table of contents
- Global changes (formatting, bibliography style …) are easily implemented

LaTeX

Pros:

- Result is machine (hardware & software) independent
- Document control
- Automation of cross-referencing, bibliographies, table of contents
- Global changes (formatting, bibliography style …) are easily implemented

Cons:

- Not easy to learn
- Complex formatting may take more time than WYSIWYG editors

- LaTeX – a markup language
- Editing in text files
- LaTeX decides how to format the document
- Output – a device-independent file (DVI) or a PDF

The very first document

- Input

```
\documentclass{article}

\begin{document}

Hello World!

% This is a comment.
\end{document}
```

- Output

Hello World!

```
\documentclass{article}
...
\begin{document}
Come up and C++ me some time.

You won't regret it!
$$
ax^2+bx+c=0
$$
% This is a comment.
\end{document}
```

Preambles

Body

```
\documentclass{article}
...
\begin{document}
Come up and C++ me some time.

You won't regret it!
$$
ax^2+bx+c=0
$$
% This is a comment.
\end{document}
```

Preambles

Body

Come up and C++ me some time.
You won't regret it!

$$ax^2 + bx + c = 0$$

How to write the input file and eventually get the correct output?

- Good LaTeX editor
  - LyX – nearly WYSIWYG, open source
  - …
  - Texmaker
  - TeXstudio, LaTeX made comfortable;
  - Winedt – commercial
- TeX (LaTeX) typesetting system
  - MiKTeX ...typesetting beautiful documents...;
  - TeXLive;

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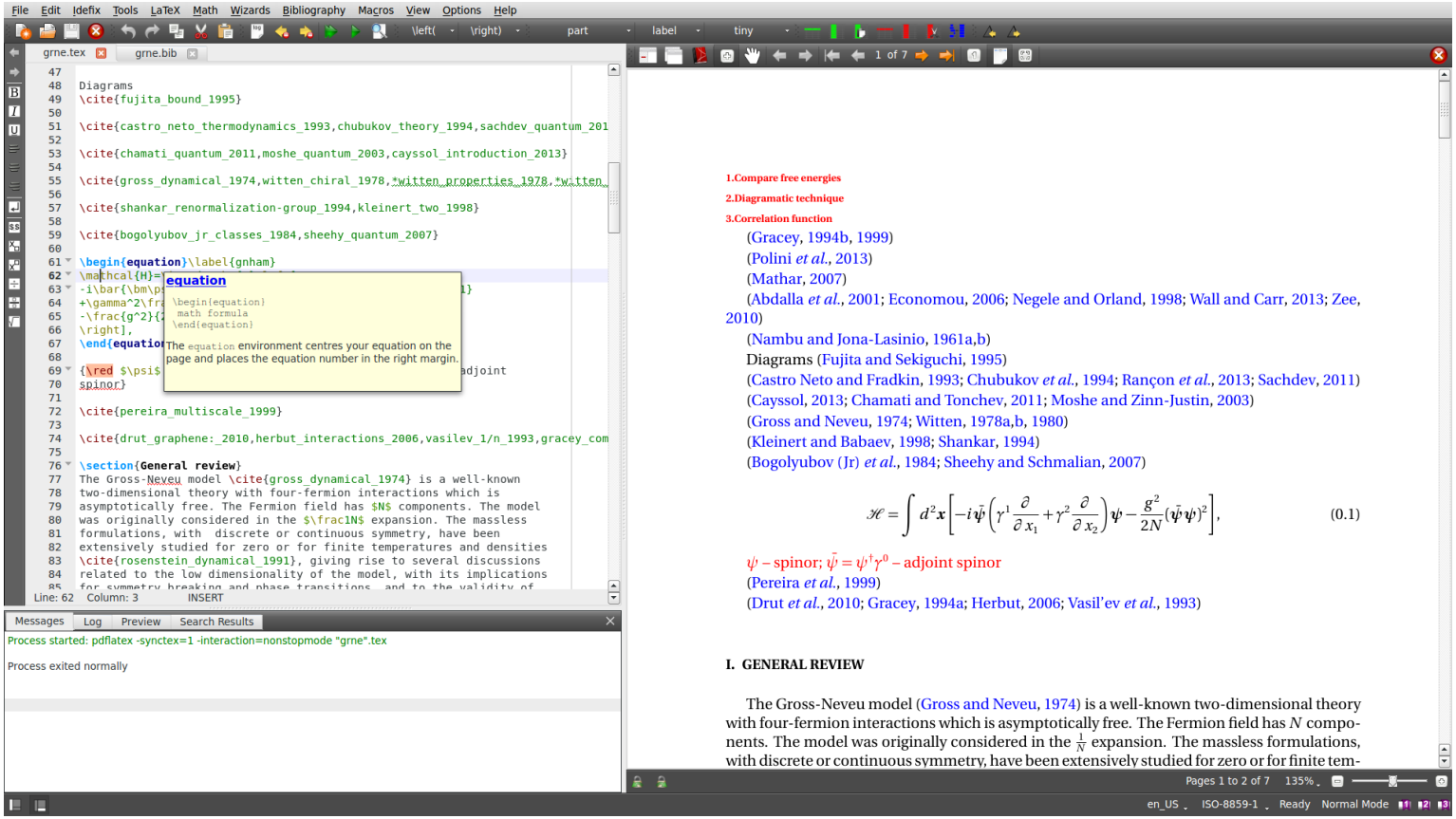
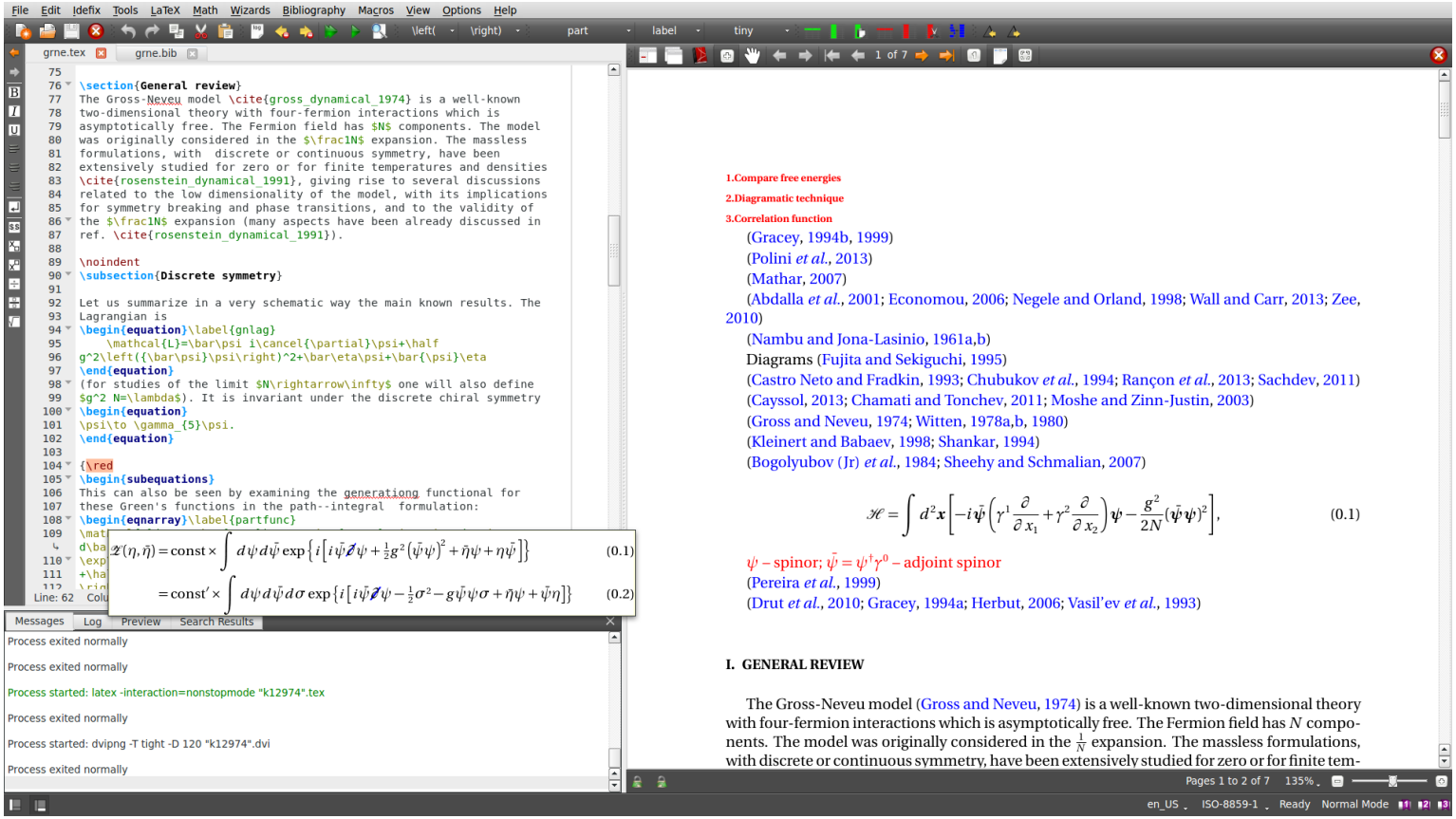
  - TeXLive; https://www.tug.org/texlive

TeXstudio screenshot – I



TeXstudio screenshot – II



Environment

```
\begin{name}

Content of the environment.

\end{name}
```

name – name of the environment.

Examples:

- document
- equation
- figure
- theorem
- ...

Commands

```
\commandname[options]{argument}
```

– Argument in braces are mandatory

– Option in brackets are not

Example:

```
\includegraphics[rotate=90]{fig.png}
```

The spaces in

- How are you?
- How are you?
- How are you?

play no role. The output is always

How are you?

i.e. spaces between words and tabs are ignored.

In a similar fashion one or more blank lines are regarded as as one blank line.

Special characters

The characters

%, #, $, &, ~, _, ^, \, {, }

are special in the sense that if you want to produce them, you need some special code.
For example:

- "\&" stands for &
- "\%" produces %
- "\$" for $
- ...

Beware

To produce \ you need to type \backslash.

PSTricks: Drawing figures with LaTeX