



Department of Adaptive Systems
ÚTIA, AV ČR
P.O.Box 18, 182 08 Prague 8, Czech Republic



RESEARCH REPORT

Ivan Nagy, Lenka Pavelková, Evgenia Suzdaleva, Jitka Homolová,
Miroslav Kárný

Edukalibre

guide

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**Edukalibre 110330-CP-1-2003-1-ES-MINERVA-M,
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1 Linux distribution

1.1 Overview

This manual tells about the structure of directory at <http://marabu.utia.cas.cz:1800/svn/educalibre>, belonging to the Edukalibre project. The manual is believed to help the developer to test and edit the material.

1.2 Where Edukalibre is available

1.2.1 Svn repository

If you read this manual, it means, you have already made checkout (or you have obtained a copy) from <http://marabu.utia.cas.cz:1800/svn/educalibre>. It is strongly recommended to make update before the start of the work.

- `svn checkout http://marabu.utia.cas.cz:1800/svn/educalibre /home/your_directory/educalibre`
- or
- `svn update http://marabu.utia.cas.cz:1800/svn/educalibre /home/your_directory/educalibre .`

1.2.2 Moodle

Demo-versions of material and packages for download are also available at <http://moodle.utia.cas.cz>. If you have downloaded the edukalibre examples from Moodle or have obtained it on CD, don't change the order of location of the files.

1.3 Special requirements before work

First of all, a you should check, whether you have Octave (<http://www.octave.org/>) installed at your computer. If not, then use your package manager to install octave and gnuplot.

1.4 How to test and use Edukalibre

In order to run the edukalibre examples you should:

1. `cd /home/your_directory/educalibre/linux_distribution/template;`
2. `kpdf (or xpdf) edbook.pdf.`

Edbook.pdf will offer you a table of contents, where you have to choose the decision-making task, you are interested in. Read the description attentively. The important concepts of Bayesian decision-making as well as the variables provide their definitions and brief description by clicking on them. Use knob “Contents” to come back to the list of examples. In the bottom of page you will see the path to the corresponding m-file. Open Octave and run this file. Using the dialog, which Octave will offer to you, try to make the recommended experiments, provided in edbook.pdf.

Edbook.pdf will also provide a brief guide how to use it. The beginners are strongly recommended to read a guide.

1.5 How to edit Edukalibre

Your directory, where you have made checkout from repository or have copied, contains three subdirectories: `linux_distribution`, `windows_distribution` and `AS`. The last one will be used ONLY when editing the edukalibre material. It contains majority of style \LaTeX documents, created for preparation of examples and it serves, primarily, for setting the \LaTeX paths and preparing the termbase of Bayesian decision-making.

1.5.1 L^AT_EX path setting and the termbase preparing

To set the paths you should:

1. `cd /home/your_directory/AS/texutils/include/;`
2. `linsetup.sh;`
3. `cd /home/your_directory/AS/bibtex;`
4. `linsetup.sh;`

After you have set the paths, you can edit the Edukalibre material.

1.5.2 How to edit the examples

File `/home/your_directory/edukalibre/linux_distribution/template/edbook.tex` is the main document for the Edukalibre examples, that have to be compiled with `pdflatex` after editing.

Directory `/template` contains two subdirectories `edcoin` and `ednormal`, which provide both the L^AT_EX - and m-files for the chapters “Basic Tasks with Discrete Model – Controlled Coin with Memory (CCM)” (design by I.Nagy) and “Basic Tasks for Normal Auto-Regression Model with External Input (ARX)” (design by L.Pavelkova) respectively.

File `edbook.tex` includes the next files:

```
\include{edcoin/edcoin}          %% edcoin.tex in /template/edcoin
\include{ednormal/ednormal}      %% ednormal.tex in /template/ednormal
```

Both `edcoin.tex` and `ednormal.tex` have the same structure and include the files from their directories with examples’ text that should be edited.

For instance, `edcoin.tex` looks like:

```
\chapter{Basic Tasks with Discrete Model -- Controlled Coin with Memory (CCM)}
several words about a chapter...

\renewcommand{\path}{edcoin/}

\section{Simulation of Discrete Model}
several words about a section...

\newpage\input{\path d01sim}
\newpage\input{\path d02sim}
```

Find the file, which you want to edit, among the files included either in `edcoin.tex` or `ednormal.tex` and edit it. Then

1. `cd /home/your_directory/edukalibre/linux_distribution/template;`
2. `pdflatex edbook.tex`
3. AND `pdflatex termbase.tex;`
4. `kpdf edbook.pdf` and check the results.

1.5.3 Definitions and commands

Definitions and commands are in file `/template/edrootdef.tex`.

1.5.4 How to edit m-files

Majority of m-files have the same names as the L^AT_EX files, corresponding to them. In order to see the name of m-file, open the respective .tex-file and look in the end of document. You will see, for instance:

```
\Combs{d01Sim}{edcoin}          %% see newcommands in edrootdef.tex
```

1.5.5 How to edit termbase

File `/template/termbase.tex` is renewed automatically after making `pdflatex` for `/template/edbook.tex`. Don't edit it manually! Make `pdflatex` for `/template/termbase.tex`, if you have changed something concerned with the links to `termbase.pdf`.

For more details about editing the termbase, see `/home/.../AS/textutils/doc/termbase`.

1.5.6 How to edit the theory

File `linux_distribution/badecmak.tex` is the main \LaTeX document for theoretical part of Edukalibre that should be compiled after editing of the files included. `badecmak.tex` includes the next files, located at the same directory:

```
\include{01}           % introduction
\include{02}           % underlying theory
\include{03}           % decision making tasks
\include{04}           % evaluation (sub-optimal decisions)
\include{11norm}       % scalar static regression model with normal noise
\include{21disc}       % controlled coin with memory
\include{99app}        % appendix
```

Edit what you find reasonable and make `pdflatex` for `badecmak.tex`.

1. `cd /home/your_directory/edukalibre/linux_distribution;`
2. `pdflatex badecmak.tex`
3. `kpdf badecmak.pdf` and look at results.

1.5.7 Bibliography

`badecmak.tex` uses `\bibliography{mk,dept,world}` from `/home/your_directory/AS/bibtex`.

2 Windows distribution

2.1 Overview

This manual tells about the structure of directory at <http://marabu.utia.cas.cz:1800/svn/educalibre>, belonging to the Edukalibre project. The manual is believed to help the developer to test and edit the material.

2.2 Where Edukalibre is available

2.2.1 Svn repository

If you read this manual, it means, you have already made checkout (or you have obtained a copy) from <http://marabu.utia.cas.cz:1800/svn/educalibre>. It is strongly recommended before the start of the work to make update from <http://marabu.utia.cas.cz:1800/svn/educalibre> with the help of your svn-client by the button of mouse.

2.2.2 Moodle

Demo-versions of material and packages for download are also available at <http://moodle.utia.cas.cz>. If you have downloaded the edukalibre examples from Moodle or have obtained it on CD, don't change the order of location of the files.

2.3 Special requirements before work

First of all, a you should check, whether you have Octave (<http://www.octave.org/>) installed at your computer. If not, then:

- GNU Octave 2.1.50.exe is in `/svn/educalibre/windows_distribution/octave_install/`.
- Attention: Edukalibre setup is prepared now only for Octave 2.1.50.

2.4 How to test and use Edukalibre

To run the edukalibre examples you should:

1. go to `\educalibre\windows_distribution` and run `setup.msi`. It is recommended to close all the programs before installation.
2. choose directory (whatever you want) to install the examples. Attention: it is not recommended to install Examples to a directory under version control;
3. go to your desktop and run `Edukalibre.pdf`, which will be created automatically.

`Edukalibre.pdf` will offer you a table of contents, where you have to choose the decision-making task, you are interested in. Read the description attentively. The important concepts of Bayesian decision-making as well as the variables provide their definitions and brief description by clicking on them. In the bottom of page you will see several hyperlinks. The most important among them is “Run example”. Click on it and it will open Octave and run the corresponding example. Using the dialog, which Octave will offer to you, try to make the recommended experiments, provided in `Edukalibre.pdf`. If you need to start Octave without running the example, use the link “Run Octave”. If you want either look at the source code or edit it, use “Edit m-file”. Use link “Contents” to come back to the list of examples.

`Edukalibre.pdf` will also provide a brief guide how to use it. The beginners are strongly recommended to read a guide.

2.5 How to edit Edukalibre

Your directory, where you have made checkout from repository or have copied, contains three subdirectories: `linux_distribution`, `windows_distribution` and `AS`. The last one will be used ONLY when editing the edukalibre material. It contains majority of style \LaTeX documents, created for preparation of examples and it serves, primarily, for setting the \LaTeX paths and preparing the termbase of Bayesian decision-making.

2.5.1 L^AT_EX path setting and the termbase preparing

To set the paths you should:

1. go to `your disk:\your_directory\AS\texutils\include;`
2. run `winsetup.bat;`
3. `cd your disk:\your_directory\AS\bibtex;`
4. run `winsetup.bat;`

After you have set the paths, you can edit the Edukalibre material.

2.5.2 How to edit the examples

File `\windows_distribution\template\edbook.tex` is the main document for the Edukalibre examples, that have to be compiled with `pdflatex` after editing.

Directory `\template` contains two subdirectories `edcoin` and `ednormal`, which provide both the L^AT_EX - and m-files for the chapters “Basic Tasks with Discrete Model – Controlled Coin with Memory (CCM)” (design by I.Nagy) and “Basic Tasks for Normal Auto-Regression Model with External Input (ARX)” (design by L.Pavelkova) respectively.

File `edbook.tex` includes the next files:

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Both files `edcoin.tex` and `ednormal.tex` have the same structure and include the files from their directories with examples' text that should be edited.

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several words about a chapter...

\renewcommand{\path}{edcoin/}

\section{Simulation of Discrete Model}
several words about a section...

\newpage\input{\path d01sim}
\newpage\input{\path d02sim}
```

Find the file, which you want to edit, among the files included either in `edcoin.tex` or `ednormal.tex` and edit it. Then

1. go to `\windows_distribution\template;`
2. make `pdflatex` for `edbook.tex`
3. AND for `termbase.tex`;
4. open `edbook.pdf` and check the results.

2.5.3 Definitions and commands

Definitions and commands are in file `\template\edrootdef.tex`.

2.5.4 How to edit m-files

Majority of m-files have the same names as the L^AT_EX files, corresponding to them. In order to see the name of m-file, open the respective .tex-file and look in the end of document. You will see, for instance:

```
\Combs{d01Sim}{edcoin}          %%% see newcommands in edrootdef.tex
```

2.5.5 How to edit termbase

File `\template\termbase.tex` is renewed automatically after making `pdflatex` for `\template\edbook.tex`. Don't edit it manually! Make `pdflatex` for `\template\termbase.tex`, if you have changed something concerned with the links to `termbase.pdf`.

For more details about editing the termbase, see `\AS\texutils\doc\termbase`.

2.5.6 How to edit the theory

File `windows_distribution/badecmak.tex` is the main \LaTeX document for theoretical part of Edukalibre that should be compiled after editing of the files included. `badecmak.tex` includes the next files, located at the same directory:

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\include{11norm}       % scalar static regression model with normal noise
\include{21disc}       % controlled coin with memory
\include{99app}        % appendix
```

Edit what you find reasonable and make `pdflatex` for `badecmak.tex`.

2.5.7 Bibliography

`badecmak.tex` uses `\bibliography{mk,dept,world}` from `\...\AS\bibtex`.