Different approach to modification source code with using graphical elements

Marek Brath, Feješ Adrián, Jendrej Maroš, Jozef Krajčovič, Ľuboš Staráček, Lukáš Tursky [[1]](#footnote-1)\*

Slovak University of Technology in Bratislava

Faculty of Informatics and Information Technologies

Ilkovičova 3, 842 16 Bratislava, Slovakia

krajcovicj3@fiit.stuba.sk

**Abstract.** Today´s integrated development environments (IDE) usually do not use any graphic enrichment text, only simple highlighting colour. Enriching the source code of the graphics elements can get a better understanding of the structure code and thus facilitate the programmer to read and manipulate the code. Another disadvantage today´s IDE is than not support rich-text blocks that allow you to write directly documentation into source files and support the idea of ​​literate programming by Mr. Donald Knuth. We present our experiences and results about different approach to modification source code with using graphical elements.

# Introduction

Each paper represents the results of the authors’ work on a project related to the area of informatics and information technology. The required parts are the title, abstract and introduction where the problem and the state of the art in the respective area are introduced; the main part where the contribution and the achieved results are presented and finally the conclusion with references. The header consists of the title, author’s name (or co-authors) and address.

In the footnote place the degree and field of your study and the name of the supervisor together with his/her position, i.e. Professor (*profesor* in Slovakia), Assoc. Professor (*docent* in Slovakia), Dr. (PhD. title received) together with supervisor’s affiliation. Each student should have a supervisor.

The abstract[[2]](#footnote-2) should describe the main ideas and the contribution of the paper. The rest of the paper should be structured into several sections with each section being introduced by its title. The final camera ready version of the paper should contain no more than 8 pages formatted according to this template for doctoral students and no more than 6 pages for bachelor and master students.

Online electronic submission of papers (MS Word or pdf) is requested. For the camera ready version, the source, i.e. the MS Word file or the TeX source files are required. When submitting, pleases follow the submission guidelines to be announced on the IIT.SRC homepage.

# Text and graphics layout

This section describes text and graphics formatting and layout guidelines that should be followed while writing your paper.

## Paragraphs

For texts use the *Times New Roman* font, the use of other fonts than defined in this template is not allowed. However, in figures and tables other fonts are permitted.

Consider the use of italic and bold font styles in your paper before you actually use them. The bold font is appropriate only in specific cases when it is necessary to emphasize a term (thought). We rather recommend using *italic* to emphasize keywords in the text. Please, avoid using underlined fonts.

The first paragraph after a heading has to be formatted using the style *Normal First*, while each following paragraph is formatted using the style *Normal*. For other texts use standard formatting techniques, such as unnumbered list (*Style Bulleted*):

* Item 1
* Item 2
  + Item 2.1
    - Item 2.1.1
* Item 3

The text which follows right after an itemized list (e.g., *Style Bulleted* or *Style Numbered*), figures, tables or equations should be formatted as *Normal First*. A numbered list should be formatted as follows:

1. Item 1
2. Item 2
   1. Item 2.1
      1. Item 2.1.1
3. Item 3

## Formulas, equations, figures and tables

If a description of formulas or equations is needed (e.g., to be referred to from the text), use numbering on the right side enclosed in the brackets:

 (1)

where inputs are restricted by following equations:

 (2)

Each figure and table must have a caption, which consists of the figure (table) number and a meaningful description. The numbering for figures is independent from the numbering for tables. The numbering is ascending for the entire paper, i.e. the numbering continues independently from particular sections. We encourage the use of black and white only pictures (see Figure 1). Furthermore, each figure and table should be referenced from the main text of the paper.



Figure 1. Sample output of a fractal tree drawing algorithm.

When you prepare your figures, keep in mind that the paper will be copied, therefore use halftones where possible (shadow is better expressed by raster, not in gray). The use of vector graphics whenever possible is preferred over bitmaps. The minimal recommended line thickness is 0.25 mm.

Table example: The meaning of specific elements of the strategy vector *s(a)* for different cases is described in Table 1, where the last column shows interaction types.

Table 1. Specification of the strategy vector s(a).

|  |  |  |  |
| --- | --- | --- | --- |
|  | Penalty for agent *a* | Penalty for  agent *b* | Movement of agent *a* |
| 1 | *p*(*a*)=0 | *p*(*b*)=0 | *S*1(*a*) |
| 2 | *p*(*a*)=0 | *p*(*b*)>0 | *S*2(*a*) |
| 3 | *p*(*a*)>0 | *p*(*b*)=0 | *S*3(*a*) |
| 4 | *p*(*a*)>0 | *p*(*b*)>0 | *S*4(*a*) |

To format fragments of source code or pseudocode use the character style *Code*, e.g. pp:title "Director" indicates job title as a fragment of a job definition. If the fragment stands as a separate paragraph use the style *Code Paragraph*:

<div class="title">

<a href="#">Director of Business Development</a>

</div>

## Page numbering

Do not add any page numbering to your paper other than the one predefined in this template as the final numbering will be provided by proceedings editor. Similarly, avoid the use of references using page numbers.

# Bibliography

Bibliography sources are referenced in the main text by using Arabic numbers enclosed in square brackets (e.g., [1]). The numbered list of the bibliography sources is at the end of paper in alphabetical order sorted by the authors’ names (use the style *ReferenceItem*). If the original language of the cited source is different than English, enclose the original language at the end in brackets (e.g., (in Slovak)).

To add a reference, click Insert → Reference → Cross Reference (Reference type: Numbered Item; Insert reference to: Paragraph number) or use Bookmarks. We provide these reference examples:

* journal article,
* book,
* proceedings article.

Appropriate citation and references to the bibliography sources are an integral part of writing culture of research papers. Therefore, pay proper attention to this fact and do not forget to reference each source with all the required information in the right form (see STN ISO 690 for more information).

If you refer to an electronic source do not use the default MS Word style (i.e., blue underlined font), but rather use style *Code* (*Courier New* font) or *Italic* font.

# Conclusions

In the conclusions you should summarize your contribution. Throughout the entire paper it is important to use proper English grammar and use a formal style of writing. Your supervisor will be helpful in advising you on the content of your paper. We wish you good luck in writing your paper.

If you need any further information feel free to contact Zuzana Marušincová (marusincova@fiit.stuba.sk). This file is available at the IIT.SRC web page: www.fiit.stuba.sk/iit-src.

If your paper was written as a part of a research project it is recommended to add an Acknowledgement at the end of the paper.

*Acknowledgement:* This work was partially supported by the Science and Technology Assistance Agency under the contract No. XX-XXXXXX.

References

1. Caromel, D., Henrio, L., Serpette, B.P.: Asynchronous and deterministic objects. In: *Proc. of the 31st ACM SIGPLAN-SIGACT Symposium on Principles of programming languages*, ACM Press, (2004), pp. 123–134.
2. Friedman, A.D., Menon, P.R.: *Theory and Design of Switching Circuits*. Computer Science Press, Inc., (1975).
3. Henessy, J., Patterson, D.: *Computer Organization and Design: The Hardware/ Software Interface.* Morgan Kaufmann Publishers, San Mateo California, (1994).
4. Henrio, L.: *Asynchronous Object Calculus: Confluence and Determinacy*. PhD. thesis, Universite´ de Nice-Sophia Antipolis, (2003).
5. Horridge, M., Knublauch, H., Rector, A., Stevens, R., Wroe, C.: *A Practical Guide to Building OWL Ontologies Using the Protégé–owl Plugin and CO-ODE Tools.* [Online; accessed January 7, 2008]. Available at: http://www.co-ode.org/resources/tutorials/ Protege-OWLTutorial.pdf
6. Manna, Z., Pnueli, A.: Verification of Concurrent Programs: the Temporal Framework. In Boyer, R. et al., eds.: *The Correctness Problem in Computer Science*. Academic Press, London, (1981), pp. 215–273.
7. Misra, J., Chandy, K.: Proofs of Networks of Processes. *IEEE Transactions on Software Engineering*, (1981), vol. 7, no. 7, pp. 417–426.
8. Owicki, S., Gries, D.: Verifying properties of Parallel Programs: an Axiomatic Approach. *Communications of the ACM*, (1976), vol. 19, no. 5, pp. 279–285.
9. Vardhan, A.: Distributed Garbage Collection: A Transformation and its Applications to Java Programming. Master’s thesis, (1998).
10. Widom, J., Panangaden, P.: Expressiveness Bounds for Completeness in Trace-based Network Proof Systems. In: *CAAP’88: Proc. of the 13th Colloquium on Trees in Algebra*, LNCS 209. Springer, Berlin, (1988), pp. 200–214.

1. \* Bachelor/Master/Doctoral degree study programme in field: Informatics/Computer Engineering/Software Engineering/Information Systems/Applied Informatics/Artificial Intelligence  
   Supervisor: Professor/Assoc. Professor/Dr. Xxxx Yyyyy, Institute of Applied Informatics/ Institute of Informatics and Software Engineering/ Institute of Computer Systems and Networks, Faculty of Informatics and Information Technologies STU in Bratislava [↑](#footnote-ref-1)
2. Abstract should be no longer than 100 words. [↑](#footnote-ref-2)