Lecture Notes in Computer Science:  
Authors’ Instructions for the Preparation  
of Camera-Ready Contributions  
to LNCS/LNAI/LNBI Proceedings

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**Abstract.** The abstract should summarize the contents of the paper and should contain at least 70 and at most 150 words. It should be set in 9-point font size and should be inset 1.0 cm from the right and left margins. There should be two blank (10-point) lines before and after the abstract. This document is in the required format.

1 Introdução

Com o presente documento pretende-se apresentar resumidamente o trabalho prático elaborado pelo grupo, no seguimento da UC de programação Orientada aos Objetos. Neste It is not possible to update files at a later stage. Please note that we do not need the printed paper.

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2 Arquitetura

Nesta proposta utilizamos vários tipos de classe com diferentes atributos. Desde classes concretas a classes abstratas, class com e sem implementações de *interfaces* e subclasses de classes abstratas.

Por questões de necessidade de gravação do estado da aplicação, todas as classes tem em comum a implementação da interface *Serializable*, oferecendo, assim, um método simples de gravação dos objetos com todos os seus estados atuais em ficheiro, para posterior consulta.

2.1. Classe UmeR

Utiliza *Maps* e tipos primitivos para guardar os seus dados. Possui um registo de toda a informação necessária para o bom funcionamento da empresa. Contem quatro estruturas de dados *Map* onde se encontram guardados 1. *User* como *Value* e email como *key,* para guardar todos os utilizadores registados na empresa, quer clientes, quer condutores ; 2. *Vehicle* como *Value* e *licensePlate* como *key,* para guardar a informação da viaturas ao serviço da empresa*; 3. Trip* como *Values*

e *id* de viagem como *key,* para manter um histórico de todas as viagens efetuadas através da empresa*; 4. Email* como *Values* e licensePlate como *key,* para manter um registo do veículo associado a cada condutor. Existe ainda a variável *isLogged*, do tipo *Boolean*, que indica se existe um utilizador logado. Se sim, então o seu e-mail estará presente na variável *loggedUserEmail*, do tipo String. Por último, existe na classe uma variável tripNumber, do tipo Integer, responsável por garantir a sequencialização dos identificadores únicos da viagem, utilizados no Map das Trips. the name(s) of the author(s) and 9-point type for the address(es) and the abstract. For the main text, please use 10-point type and single-line spacing. We recommend the use of Computer Modern Roman or Times. Italic type may be used to emphasize words in running text. Bold type and underlining should be avoided.

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Headings. Headings should be capitalized (i.e., nouns, verbs, and all other words except articles, prepositions, and conjunctions should be set with an initial capital) and should, with the exception of the title, be aligned to the left. Words joined by a hyphen are subject to a special rule. If the first word can stand alone, the second word should be capitalized. The font sizes are given in Table 1.

Here are some examples of headings: "Criteria to Disprove Context-Freeness of Collage Languages", "On Correcting the Intrusion of Tracing Non-deterministic Programs by Software", "A User-Friendly and Extendable Data Distribution System", "Multi-flip Networks: Parallelizing GenSAT", "Self-determinations of Man".

**Table 1.** Font sizes of headings. Table captions should always be positioned *above* the tables.

|  |  |  |
| --- | --- | --- |
| Heading level | Example | Font size and style |
| Title (centered) | **Lecture Notes …** | 14 point, bold |
| 1st-level heading | **1 Introduction** | 12 point, bold |
| 2nd-level heading | **2.1 Printing Area** | 10 point, bold |
| 3rd-level heading | **Headings.** Text follows … | 10 point, bold |
| 4th-level heading | *Remark.* Text follows … | 10 point, italic |

Lemmas, Propositions, and Theorems. The numbers accorded to lemmas, propositions, and theorems, etc. should appear in consecutive order, starting with Lemma 1, and not, for example, with Lemma 11.

2.1 Figures

Please check that the lines in line drawings are not interrupted and have a constant width. Grids and details within the figures must be clearly legible and may not be written one on top of the other. Line drawings should have a resolution of at least 800 dpi (preferably 1200 dpi). The lettering in figures should have a height of 2 mm (10-point type). Figures should be numbered and should have a caption which should always be positioned *under* the figures, in contrast to the caption belonging to a table, which should always appear *above* the table. Please center the captions between the margins and set them in 9-point type (Fig. 1 shows an example). The distance between text and figure should be about 8 mm, the distance between figure and caption about 6 mm.

To ensure that the reproduction of your illustrations is of a reasonable quality, we advise against the use of shading. The contrast should be as pronounced as possible.

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Remark 1. In the printed volumes, illustrations are generally black and white (halftones), and only in exceptional cases, and if the author is prepared to cover the extra costs involved, are colored pictures accepted. Colored pictures are welcome in the electronic version free of charge. If you send colored figures that are to be printed in black and white, please make sure that they really are legible in black and white. Some colors show up very poorly when printed in black and white.



**Fig. 1.** One kernel at *xs* (*dotted kernel*) or two kernels at *xi* and *xj* (*left and right*) lead to the same summed estimate at *xs*. This shows a figure consisting of different types of lines. Elements of the figure described in the caption should be set in italics, in parentheses, as shown in this sample caption.

2.2 Formulas

Displayed equations or formulas are centered and set on a separate line (with an extra line or halfline space above and below). Displayed expressions should be numbered for reference. The numbers should be consecutive within each section or within the contribution, with numbers enclosed in parentheses and set on the right margin.

|  |  |
| --- | --- |
| x + y = z . | (**1**) |

Please punctuate a displayed equation in the same way as ordinary text but with a small space before the end punctuation.

2.3 Footnotes

The superscript numeral used to refer to a footnote appears in the text either directly after the word to be discussed or – in relation to a phrase or a sentence – following the punctuation mark (comma, semicolon, or period). Footnotes should appear at the bottom of the normal text area, with a line of about 5cm set immediately above them[[1]](#footnote-1).

2.4 Program Code

Program listings or program commands in the text are normally set in typewriter font, e.g., CMTT10 or Courier.

Example of a Computer Program from Jensen K., Wirth N. (1991) Pascal user manual and report. Springer, New York

program Inflation (Output)  
 {Assuming annual inflation rates of 7%, 8%, and  
 10%,... years};  
 const MaxYears = 10;  
 var Year: 0..MaxYears;  
 Factor1, Factor2, Factor3: Real;  
 begin  
 Year := 0;  
 Factor1 := 1.0; Factor2 := 1.0; Factor3 := 1.0;  
 WriteLn('Year 7% 8% 10%'); WriteLn;  
 repeat  
 Year := Year + 1;  
 Factor1 := Factor1 \* 1.07;  
 Factor2 := Factor2 \* 1.08;  
 Factor3 := Factor3 \* 1.10;  
 WriteLn(Year:5,Factor1:7:3,Factor2:7:3,  
 Factor3:7:3)  
 until Year = MaxYears  
end.

2.5 Citations

The list of references is headed “References” and is not assigned a number. The list should be set in small print and placed at the end of your contribution, in front of the appendix, if one exists. Please do not insert a pagebreak before the list of references if the page is not completely filled. An example is given at the end of this information sheet. For citations in the text please use square brackets and consecutive numbers: [1], [2], [3], etc.

2.6 Page Numbering and Running Heads

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3 Hierarquia

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5 Lecture Notes in Computer Science in the ISI SCI Expanded

The Lecture Notes in Computer Science volumes are sent to ISI for inclusion in their Science Citation Index Expanded.

Acknowledgments. The heading should be treated as a 3rd level heading and should not be assigned a number.

References

1. Baldonado, M., Chang, C.-C.K., Gravano, L., Paepcke, A.: The Stanford Digital Library Metadata Architecture. Int. J. Digit. Libr. 1 (1997) 108–121

2. Bruce, K.B., Cardelli, L., Pierce, B.C.: Comparing Object Encodings. In: Abadi, M., Ito, T. (eds.): Theoretical Aspects of Computer Software. Lecture Notes in Computer Science, Vol. 1281. Springer-Verlag, Berlin Heidelberg New York (1997) 415–438

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4. A readme giving the first name(s) and the surname(s) of all the authors of the paper as well as the name and email address of the corresponding author

1. The footnote numeral is set flush left and the text follows with the usual word spacing. [↑](#footnote-ref-1)