Institute for Informatics of the Ludwig-Maximilians-Universität München
Prof. Dr. Jasmin Blanchette
Dr. Martin Desharnais-Schäfer
Dr. Michael Kirsten
Elisabeth Lempa

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Regular Examination in the Seminar

Scientific and Technical English for Computer Scientists

You have **90 minutes** at your disposal. Written or electronic aids are not permitted except for normal watches. Carrying forbidden devices, even turned off, will be considered a cheating attempt.

Write your full name and matriculation number legibly on this cover sheet, as well as your name in the header on each sheet. Hand in all sheets. Leave them stapled together. Use only **pens** and **neither** the color **red nor green**.

Check that you have received all the sheets. Questions can be found on **pages 2–12**. There are 10 questions for a total of 100 points; 50 points are sufficient to pass.

You may use the blank pages at the end for your own notes. If you use these pages to answer, clearly mark what belongs to which question and indicate in the corresponding question where all parts of your answer can be found. Cross out everything that should not be graded.

With your signature, you confirm that you are sufficiently healthy at the beginning of the examination and that you accept the examination bindingly.

Last name (in CAPITAL LETTERS):

First name (in CAPITAL LETTERS):

Matriculation number:

Program of study:

Hereby I confirm the correctness of the above information: _____

Signature

Please leave the following table blank:

Question	1	2	3	4	5	6	7	8	9	10	$\sum$
Points	10	10	10	10	10	10	10	10	10	10	100
Score											

Question 1 (American vs. British English): **(10 points)**

Underline five Americanisms in the text below, and explain how they would be expressed in British English.

> It was on February 29, 2024, that I met him for the first time. I could hardly discern the color of his eyes. He was not exactly a "prince charming," but I quickly took a liking to him nonetheless. I learned that he came from the Far North, and his behavior revealed his unease with people. Did he have any skeletons in the closet? It was too early to tell—and anyway my judgment was clouded, as I could recognize myself.

Question 2 (Informality): **(10 points)**

Underline five informal expressions in the text below, and suggest a more formal alternative for each.

> We can clear the memory either in one swoop or one byte at a time. By the way, this impacts not only the program's performance but also its security properties. If we code up a program without caring about such aspects, the program might come back to bite us in the ass later. In other words, it pays off to pay attention to details early. This is especially true if we write the program from scratch. We can't always predict the future, and we can't therefore avoid all goofs, but we can avoid some.

Question 3 (Gender Neutrality): **(10 points)**

Rephrase the following text to make it gender-neutral. Perform the modifications in place.

> Crucially, the user is not an isolated individual. She interacts with other users through the collaboration processes she is involved in. The notion of a user's collaborative context is based on the concept of group awareness. Awareness refers to the knowledge a user has about her colleagues and their actions inside the group's work. By actively participating in discussions and shared activities, she strengthens the group's cohesion and contributes to its overall success.

Question 4 (Verbosity): **(10 points)**

Underline five verbose expressions in the text below, and suggest a more concise alternative for each.

> The next point we want to emphasize is that a mathematical education is no substitute for a literary education, in any shape or form. Because of that fact, as far as we are concerned, we consider it important to choose a minor subject that is complementary to the major subject. For instance, let us consider the example of a student whose major is computer science and whose minor is geography. For all intents and purposes, these are subjects that are widely different.

Question 5 (Mistakes): **(10 points)**

Underline and correct five language mistakes in the following text. Perform the corrections in place.

> Chu's and Xu's book is one of the best computer science textbooks I have ever read. It's focus is on databases in the age of artificial intelligence. It emphasizes abstract principals, a sensitive choice given the target audience. This design decision effects everything about the book, from the table of contents to the index. The readers have two alternatives: read the book from cover to cover or use it as a reference. Compared to similar books, it stands out as the only one bounded in leather.

Question 6 (*Shall* vs. *Will*): (10 points)

There are two main approaches to the issue of *shall* vs. *will*: traditional and modern. The following text is written in the traditional style. Rewrite it to use the modern approach. Perform the modifications in place.

> In this chapter, we shall explore Swing's two-dimensional drawing engine. We shall review the classes responsible for drawing geometric shapes, such as points, lines, rectangles, ellipses, and polygons, as well as images and text. The chapter will be followed by a set of exercises that will test what you have learned. In Chapter 20, we shall learn to use OpenGL for rendering three-dimensional scenes.

Question 7 (Left-Heaviness): **(10 points)**

The following sentence is left-heavy and difficult to parse:

> The fact that the scheduled speaker is unable to attend because he missed his train and the next train was full is mitigated by the fact that the conference organizers have prepared a backup plan.

Rewrite the sentence so that it becomes easy to parse.

Question 8 (Punctuation): **(10 points)**

The following text contains some punctuation mistakes. Underline five such mistakes, and correct them directly in the text.

In the long European campaign to distinguish art from craft, woven images ended up on the "decorative" (i.e, nonmeaningful) side of the fence. Painting - first on panel and then on fabric—went its highbrow way, expressing ideas unimpeded by the demands of warp and weft. It is true, that the Vatican spent more on Raphaels Sistine Chapel tapestries than on Michelangelo's frescoes but the tapestries—woven to replicate the artist's vast scenographic drawings of the lives, of the apostles Peter and Paul—were textiles playing by the rules of painting. Then, in the early years of the twentieth century, something peculiar happened; painting—and sculpture and installation art and what have you—began to play by the rules of weaving.

Question 9 (Revision): **(10 points)**

The following 213-word abstract is long and verbose. Shorten it by at least 25% using the haircut and amputation approaches while preserving its essence.

> During the decades of development of artificial intelligence (AI), a spectrum of applications involving image, speech, text data, etc. are successfully powered by machine learning. The advantages are mainly derived from the learning ability from data, which most traditional databases lack. Recent years have seen a surge in approaches that explore artificial intelligence to power traditional databases, i.e. learnable databases, making databases more adaptive and intelligent. Specifically, they can be automatically optimized according to historical metric statistics and current query workload, which significantly improves the database performance and relieves the trivial routine maintenance suffering. However, one of the major issues, especially for practitioners, is the lack of consensus in their definitions as well as a lack of clear categorization from a machine learning perspective. To alleviate these problems, this paper introduces concepts and algorithms related to learnable databases and investigates the progress in learnable databases in five aspects: database parameter configuration, data storage management, query optimization, query interface, and benchmark of learnable databases. Additionally, we survey AI-empowered technique development in commercial databases and new approaches to learning-based database security. We develop a categorizing framework in terms of input features, model selection, and output results (mostly being viewed as class labels). Finally, we conclude the current work and discuss future work on learnable databases.

The question continues on the next page.

Continuation of Question 9:

Question 10 (Capitalization): **(10 points)**

The following table of contents is inconsistently capitalized:

1. Introduction
2. Background and preliminaries
3. The method
4. The Implementation of the Method
5. Case study: A tale of two users
6. Empirical evaluation
7. Related work
8. Discussion and Conclusion

First, recast it to use headline-style capitalization. Second, recast it to use sentence-style capitalization.