

1. The tasks described in this worksheet are part of the formative assessment. They serve the purpose to prepare you for the examination. We will discuss the solutions during the next **interactive session** after they are handed out – while they fit to the lecture of the week they are handed out, they might be discussed in two weeks time due to the bi-weekly exercise schedule.
2. Make sure to plan your time for the whole sheet carefully. The complete exercise should represent approximately three hours of independent study. The time limit indicates how much time you should spend on each task, and not how much time you may actually need; it is important that you engage with the material and not that you complete all tasks perfectly. Feel free to collaborate and team up.
3. The exercises are designed to challenge you and train you further as guided self-study. The time limit might be too ambitious for you; you may team up with colleagues. It is not an issue as long as you manage to at least partially resolve each task within the time budget. If you (and team) are struggling, reach out for help in Teams! You may also share your thoughts on the channel.
4. We recommend that you create a (private) GIT repository where you store your findings and outcomes while processing the exercises. This portfolio of work could be useful in the future.

Contents

Task 1: Performance Analysis (60 min) **1**

Task 2: Data Visualization with GoJS (180 min) **1**

Task 1: Performance Analysis (60 min)

Apply our performance assessment method for the results obtained with Pig and Hive (Slide 52, Lecture “Designing Distributed Systems and Performance Modelling”). First, think how the different workloads may be implemented on the given hardware. Discuss the efficiency and potential causes of inefficiency.

Portfolio (directory: 11/performance)

`11/performance/discussion.txt` Your discussion of the performance analysis.

Task 2: Data Visualization with GoJS (180 min)

As part of this tutorial, we want to create an interactive visualization created in HTML, JavaScript, and GOJS by adjusting an existing sample. Goal is to create an interactive visualization for a (trivial) educational purpose. The level of interactivity can be low. You should not develop everything from scratch but rather reuse 95% of a given example.

- Watch the tutorial: <https://www.youtube.com/watch?v=7cfHF7yAoJE>; try to follow the steps and create `gojs-tutorial.html` with the content.
- Watch the additional (short) tutorial: <https://youtu.be/dsC7Tf5mD08>

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- Browse quickly over the examples of GoJS: <https://gojs.net/latest/samples/>. While browsing think about a prospect educational purpose.
 - Adapt the example for the educational purpose. Modify the HTML to describe the use case.

Portfolio (directory: 11/gojs)

11/gojs/gojs-tutorial.html The GOJS Webpage from the tutorial.
11/gojs/education.html The GOJS Webpage for educational purpose.