Test Exam questions

These are example questions the real exam will have more questions than the ones shown here.

Name: Student id:

This is an exam where short answers questions and multiple choice questions are combined . In the multiple choice question just one answer is correct per question.

In the multiple choice questions one point is added for each correct answer; half a point is subtracted for each wrong answer. Nothing is added or subtracted if no answer is given. In short: Guessing can have a negative impact!
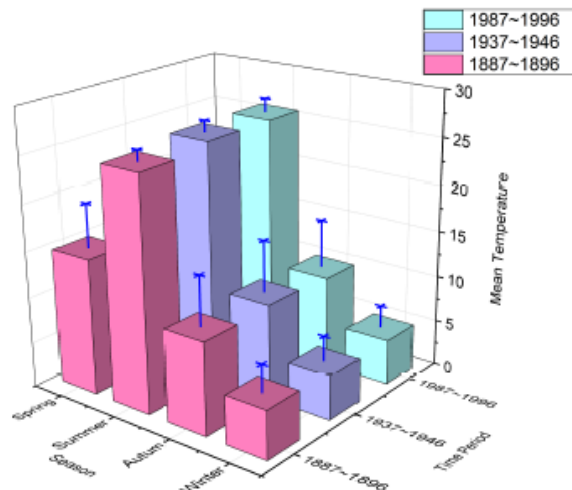
Please mark your answers directly below the exercise or next to it (but always before next question).

Make clear what is your answer; for ambiguous answers there will be half-point subtracted.

Good Luck!!

1. The visualization below summarizes the temperature of a country in the last 20 years.

   a. (1 point) Assuming this is tabular data, how many attributes are encoded in this visualization? Which data types are they (categorical, ordinal, or quantitative)?
   ………
   ………

   b. (1 point) Name two elements on the visual encoding choices (marks/visual channels) that can be considered wrong or inadequate ? Motivate each choice in one sentence.
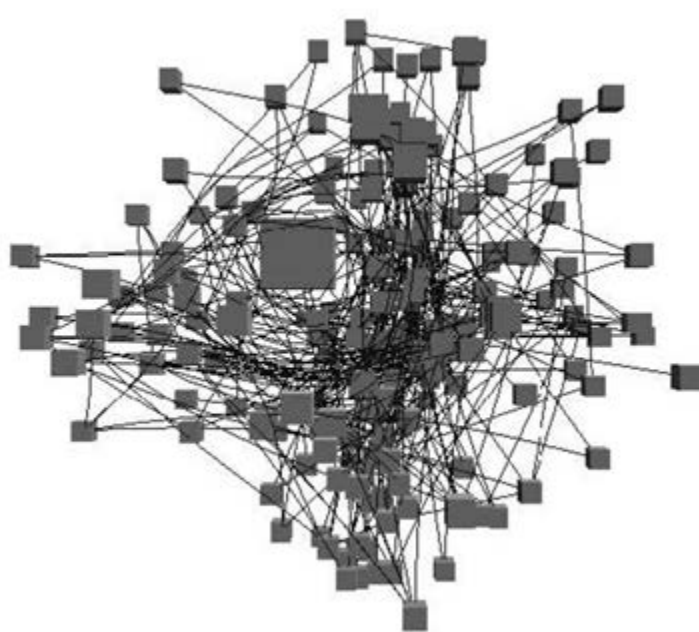
....
....
....
....

   c.   (1 point) Which visual encoding would you use? Motivate each choice in one sentence.

....
....
....
....

2.   (1 point) Points, lines and area are examples of:
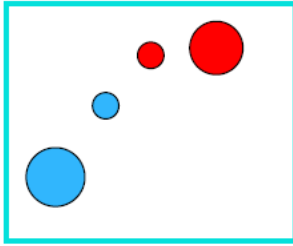   a. Visual channels
   b. Dimensions
   c. Marks
   d. Types of domains

3.   (1 point) Name two reasons why visualizing a graph in 3D as shown in the image is not desirable:

   a. ....
   b. ....

4. Which of the following statements is true regarding the dimensionality of the visual channels in the illustration above?

a. The visualization encodes 3 dimensions. There is no interference between the different visual-channel encodings. The channels are separable.

b. The visualization encodes 4 dimensions. There is interference between two of the visual-channel encodings.

c. The visualization encodes 4 dimensions. There is interference between all of the visual-channel encodings.

d. The visualization encodes 3 dimensions. There is interference between all of the visual-channel encodings.

5. Which of the following color coding would be the most adequate for categorical data?

a.

b.

c.

6. (1 point) Which visualization would be the best choice to visualize the average height of male and female?

Motivate (1 point)

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7. Visualization has three types of high-level goals
   a. Reasoning, designing, encoding
   b. Explore, analyze, present
   c. Consume, produce, search
   d. Identify, compare, summarize

8. Data is typically described with domain language. For example, a company organogram, the folder structure on a filesystem, a class hierarchy of a software product. These descriptions are an example of the abstract data type:
   a. Multi-dimensional table data
   b. Field data
   c. Tree data

9. Consider the following situation. A data scientist describes her task with the following sentence: "I am developing machine learning classification models and I need to convince the executive board that my time is well spent because the performance of my model keeps getting better."
   a. What (action, target) pair is a good task abstraction?

   ....

   b. Motivate your choice.

   ....

   ....

10. Temperature (in Centigrade degrees) as an attribute is an example of
   a. Quantitative cyclic data
   b. Categorical data
   c. Ordered diverging data
   d. None of the above