GATS Companion to Writing Exams

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Overview

This is a guide to how to better write essay exams and written interview questions.

Studying Preparations

Study preparation are best done well in advance of the exam. Ideally, as an on-going process. From personal experience, I have found that studying falls on a continuum with cramming at one end and subject emersion on the other. Cramming is dangerous and is not useful beyond trying to remember facts. Deep understanding is best acquired by routine use over a long period of time.

Let's look at what you can do to prepare.

Make a preparation guide

The purpose of this guide to help you focus on what needs review and what doesn't. Exam preparation is time management.

1. Make a topics list starting with what is listed on the syllabus.
    a. For each week of the syllabus, indicate the most important functions, skills, and concepts learned.
2. Expand the list with topics from the **reading**, **lectures**, and **projects**.
3. Sequence the topics by dependency. Which topics depend on a previous topic to be understandable.
4. For each topic, identify the *knowledge*, *skills*, and *concepts* (theory) that make up the topic. I use these categories because *knowledge* can be memorized, but *skills* must be practiced. *Concepts* are the most challenging as it is difficult to know if they are understood, without being ***applied***.
5. For each category indicate whether you have *memorized*, *practiced*, or *applied* the *knowledge*, *skill*, or *concept*.
6. Rate each category 1 to 7 to indicate your comfort with the topic. One meaning "I don't have a clue", to seven that indicates, "I know it inside out…"

Using the guide

You should be using the guide weekly, updating it as necessary.

- Focus on the weakest ranked topics.
- Write programs to practice skills, and apply concepts.
- Focus on memorizing key knowledge. Key knowledge is the information that allows you to think about a subject. In programming, the data types and order of a function parameter is less important than knowing that the function exists, or that a library exists containing that type of function.

Answering Exam Questions

1. First is preparation for the exam. Bring pencil, eraser, and highlighters.
2. Read the questions carefully.
3. Ensure you how much the question is worth and write your answer accordingly. If a question asks to compare two things, make sure your answer discusses what those things have in common or what is different. Don't just spew out disconnected

facts about each thing (e.g. if asked to compare a string and a vector, don't replay that they are both six letters, and are C++ classes. Indicate that they are both array-like, but strings are optimized for handling characters, whereas vectors are better suited to non-character data types, such as integers, Booleans, or objects.)

If the question asks to explain the purpose of something, again – don't spew random facts, or how it works. Focus on why someone uses it, or what its benefits are.

4. If a question asks you to **write a function**, make sure you include the function signature with its implementation. For example, write a function that counts the number of spaces in a string. A function has a return type, a function name, and a parameter list. Then write the body of the function. What you don't need is the main and the include statements.
    a. *Implement a function*…, or *create a function*… is the same as *write a function.*
5. **Write a complete program** requires that you provide the header file includes and the main.
6. **Write a section of code** is simply the minimal amount of code to demonstrate the solution. No function signature, no main, no includes.
7. Manage your time – 2 hours for 75 marks means 1.6 minutes per mark or that you should be completing 5 marks worth of questions every 8 minutes.
8. Do the easy questions first, banking your time for the harder questions.
9. Use highlighters to illuminate keyword in the question. Words like *compare, differentiate, not* all have a significant impact on the interpretation of a question. Use highlighters to draw attention to modifier words, and words that indicate how the question is to be answered (e.g. *describe, explain, etc.*)