

AP Computer Science A

Exam Overview

- The AP Computer Science A Exam assesses student understanding of the computational thinking practices and learning objectives outlined in the course framework. The exam is 3 hours long and includes 40 multiple-choice questions and 4 free-response questions. As part of the exam, students will be given the Java Quick Reference, which lists accessible methods from the Java library that may be included in the exam. The details of the exam, including exam weighting and timing, can be found below:
 - Section
 - 1 - Multiple Choice
 - 40 problems
 - 50% Exam Weighting
 - 90 minutes
 - 2.25 minutes per problem
 - 2 - Free Response
 - 4 questions
 - Question 1 - Methods and Control Structures
 - Question 2 - Class
 - Question 3 - Array/ArrayList
 - Question 4 - 2D Array
 - 50% Exam Weighting
 - 90 minutes
 - 22.5 minutes per problem

- Every AP CSA exam problem uses at least one of these:
 - data types
 - identifiers (names given to variables)
 - operators
 - control structures
- In the free response section, you will be required to write your own class(es).
 - You will also need to interpret at least one class that is given, including:
 - methods
 - subclasses
 - abstract classes
 - interfaces
- 2-D array problems have become more prominent in AP CSA exam in recent years. You need to understand the following:
 - create, initialize, modify, and traverse 2-D arrays
 - row-column traversals
 - for-each loop traversals
 - row-by-row array processing
- Sorting and Searching (know these algorithms)
 - selection sort
 - insertion sort
 - merge sort
 - binary search
- Hints for Taking the Exam
 - Multiple Choice Section
 - Guess if you have to, but only after eliminating the obviously wrong choices.
 - You have on average 1.875 minutes per problem so DO NOT WASTE TIME on any one problem.
 - Label the problems that you need to revisit.
 - Use hand tracing for the complicated problems especially iteration and arrays.
 - Problems that involves the comparison of two pieces of code usually involve one program segment that does not handle endpoint conditions properly.
 - Erase any mistakes completely!
 - Free Response

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- Read through the whole exam first so that you can start with a problem you feel more confident about.
- Do not skip a problem just because you cannot come up with a complete solution. Partial credit is given so do not skip a part because you could not do the previous part.
- When writing solutions, you must use the public methods of classes provided in that problem wherever possible. You will not receive full credit if you write code that can be replaced by a call to one of those methods.
- If an algorithm is suggested to solve a problem, use it.
- Do not waste time writing comments.
- Efficiency is not part of the problems unless it is specifically stated, so you generally do not have to worry about it.
- Most of the standard Java library methods are not included in the Quick Reference sheet, but they are accepted on the exam if used correctly.
- Do not cross out an answer until you have a written replacement. Graders DO NOT read crossed out writing.
- The free response section is graded by humans so it can go a long way if you write neatly and clearly with clear and meaningful variable names.
- Use the correct identifiers that are given in the problems. You will lose usage points if you persist in using the wrong names.

Time—1 hour and 15 minutes

Number of questions—40

Percent of total grade—50

Directions: Determine the answer to each of the following questions or incomplete statements, using the available space for any necessary scratchwork. Then decide which is the best of the choices given and fill in the corresponding oval on the answer sheet. Do not spend too much time on any one problem.

Notes:

- Assume that the classes in the Quick Reference have been imported where needed.
- Assume that variables and methods are declared within the context of an enclosing class.
- Assume that method calls that have no object or class name prefixed, and that are not shown within a complete class definition, appear within the context of an enclosing class.
- Assume that parameters in method calls are not null unless otherwise stated.

Practice Exam

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- 2.