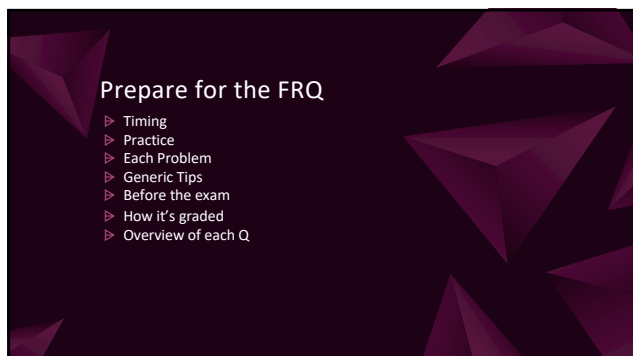
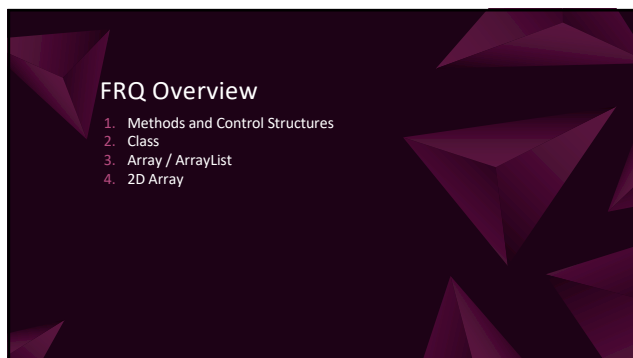


1



2



3

Timing

- ▶ The FRQ section is 90 minutes long
- ▶ 22.5 minutes per Q
- ▶ Pace down to 20 per Q means you have 10 minutes to review your answers
- ▶ Q1 is **designed** to be the easiest. Start here!
- ▶ If you don't know exactly how to solve the entire problem solve what you can and continue

4

Practice

- ▶ Use the released exams on AP Central to practice
- ▶ Login to your MyAP account and do the practice assignments from your teacher!
- ▶ CodingBat
- ▶ Barrons, 5 Steps, Skylit

5

Each problem

- ▶ Read the pre/post condition comments at the top of each method
- ▶ Identify what you **NEED** to do and what is useful
- ▶ Start with the appropriate headers in the answer document!
- ▶ Curly brackets!
- ▶ If this method has a return type, declare and initialize the correct type of variable and return that variable at the bottom
- ▶ Do the things the instructions say to do, even if you can only do part

6

Mark up the test document

2019 AP® COMPUTER SCIENCE A FREE-RESPONSE QUESTIONS

- (a) A string containing text and possibly delimiters has been split into *tokens* and stored in `tokens`. Each token is either an *open delimiter*, a *close delimiter*, or a *substring* that is *not* a delimiter. You will write the method `getDelimiterList`, which returns an *ArrayList* containing all the open and close delimiters found in `tokens` in their original order.

Example 1

```

openDel: "*"
closeDel: "*"
tokens: ["12", "x", "2", "15", "x", "5"]
ArrayList of delimiters: ["*", "*"]
getDelimiterList (tokens):

```

Example 2

```

openDel: "<div>"
closeDel: "</div>"
tokens: ["<div>", "x", "</div>", "y", "<div>", "z", "</div>"]
ArrayList of delimiters: ["<div>", "</div>", "<div>", "</div>"]
getDelimiterList (tokens):

```

7

Generic Tips

- ▶ Identify what you need to do for the question
- ▶ Write slow
- ▶ Print is better than cursive
- ▶ Big letters are better than tiny letters every time
- ▶ Unless **EXPLICITLY** told to in the question **DO NOT WRITE** `System.out.println` statements or any other random code
- ▶ Answer **ONLY** what is asked
- ▶ Full solutions are not very long (5-9 lines per part)
- ▶ Use parameters and methods that are given to you!
- ▶ Remember to use the Quick Reference Sheet!

8

Before the exam

- ▶ SLEEP!!!!
- ▶ Eat Food!!!
- ▶ Exercise!
- ▶ Use the bathroom!
- ▶ Breathe!!!!

9

FRQ Grading

- ▶ Each Q is graded with a 9 point rubric
- ▶ Each rubric point is a Y/N option
- ▶ Rubric points are DIRECTLY linked to specific ideas of the CED
- ▶ Each point tests a specific part
- ▶ Losing one point on the rubric does not mean other points are automatically lost

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Q1: Methods and Control Structures

Free-response question 1: Methods and Control Structures focuses on assessing students' ability to:

- write program code to create objects of a class and call methods (Skill 3.A)
- write program code to satisfy method specifications using expressions, conditional statements, and iterative statements (Skill 3.C)

- ▶ This means you will be given information about objects and writing methods that:
 - ▶ Create objects
 - ▶ Assign to variables
 - ▶ Use those objects to call other methods
 - ▶ Use parameters and data members
 - ▶ Use if/else if/else logic to determine what methods to call
 - ▶ Use loops to perform actions more than once
 - ▶ Use Math methods
 - ▶ Use String methods

11

Q2: Class

Free-response question 2: Class focuses on assessing students' ability to:

- write program code to define a new type by creating a class (Skill 3.B)
- write program code to satisfy method specifications using expressions, conditional statements, and iterative statements (Skill 3.C)

- ▶ Given the supplied specifications you will:
 - ▶ Declare class and all specified data members
 - ▶ Remember to initialize any/all data members inside the constructor
 - ▶ Implement all specified methods
 - May require arithmetic, Math methods, String methods, loops, and/or logic

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Q3: Array / ArrayList

Free-response question 3: **Array/ArrayList** focuses on assessing students' ability to:

- write program code to satisfy method specifications using expressions, conditional statements, and iterative statements (Skill 3.C)
- write program code to create, traverse, and manipulate elements in 1D array or `ArrayList` objects (Skill 3.D)

- ▶ Using the supplied specifications write methods that initialize the correct data structure
- ▶ Iterate over the structure without bounds errors
- ▶ Use the contents of the structure while inside the loop
- ▶ Use logic, math, and other methods as needed

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Q4: 2D Array

Free-response question 4: **2D Array** focuses on assessing students' ability to:

- write program code to satisfy method specifications using expressions, conditional statements, and iterative statements (Skill 3.C)
- write program code to create, traverse, and manipulate elements in 2D array objects (Skill 3.E)

- ▶ Using the supplied specifications write methods that can create and/or use a 2D array
- ▶ Remember a 2D array is really an array of arrays
 - ▷ Each row is an array
- ▶ `arrayName.length` for rows
- ▶ `arrayName[0].length` for columns
- ▶ Nested for loops for traversal

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