

Question 1: Methods and Control Structures

9 points

Canonical solution

a. `public int walkDogs(int hour)` **4 points**

```

{
    int dogsToWalk = company.numAvailableDogs(hour);

    if (dogsToWalk > maxDogs)
    {
        dogsToWalk = maxDogs;
    }

    company.updateDogs(hour, dogsToWalk);
    return dogsToWalk;
}

```

b. `public int dogWalkShift(int startHour, int endHour)` **5 points**

```

{
    int totalPay = 0;

    for (int hour = startHour; hour <= endHour; hour++)
    {
        int dogs = walkDogs(hour);
        int hourPay = 5 * dogs;
        if (dogs == maxDogs || (hour >= 9 && hour <= 17))
        {
            hourPay += 3;
        }
        totalPay += hourPay;
    }
    return totalPay;
}

```

a. `walkDogs`

Scoring Criteria		Decision Rules	
1	Calls <code>DogWalkCompany</code> method(s) on <code>company</code>	Responses can still earn the point even if they - fail to save or use the returned value - call <code>numAvailableDogs</code> more than once - only call one of the methods Responses will not earn the point if they - use the incorrect parameter types - call either <code>numAvailableDogs</code> or <code>updateDogs</code> on nothing or on something other than <code>company</code>	1 point
2	Compares available dogs and <code>maxDogs</code> to determine number of dogs to walk	Responses can still earn the point even if they - call <code>numAvailableDogs</code> incorrectly - calculate an incorrect number of dogs that were walked	1 point
3	Calls <code>numAvailableDogs</code> with <code>hour</code> and <code>updateDogs</code> with <code>hour</code> and correct number of dogs to walk (<i>algorithm</i>)	Responses can still earn the point even if they - call either method on nothing or on something other than <code>company</code> Responses will not earn the point if they - calculate an incorrect number of dogs that were walked	1 point
4	Returns calculated value	Responses can still earn the point even if they - calculate an incorrect number of dogs that were walked - call <code>numAvailableDogs</code> multiple times Responses will not earn the point if they - return something other than an <code>int</code> - fail to return a value in some cases - print a value in addition to or instead of returning it	1 point

b. `dogWalkShift`

Scoring Criteria		Decision Rules	
5	Loops from <code>startHour</code> to <code>endHour</code> , inclusive	Responses can still earn the point even if they return from the loop early, as long as bounds would otherwise be correct	1 point
6	Calls <code>walkDogs</code> with <code>int</code> parameter (<i>in the context of a loop</i>)	Responses can still earn the point even if they - fail to save or use the returned value Responses will not earn the point if they - use an incorrect parameter type on any call to <code>walkDogs</code> - call the method on the class or on an object other than <code>this</code> (use of <code>this</code> is optional)	1 point
7	Calculates base pay for an hour	Responses can still earn the point even if they - fail to include the calculation in the loop - call <code>walkDogs</code> incorrectly	1 point
8	Calculates possible bonus for an hour's pay	Responses can still earn the point even if they - call <code>walkDogs</code> multiple times inside the loop - fail to include the calculation in the loop Responses will not earn the point if they - count the bonus twice when both conditions are true - count the bonus only when both conditions are true - count the bonus when it has not been earned - calculate bonus incorrectly	1 point
9	Accumulates total pay (<i>algorithm</i>)	Responses can still earn the point even if they - calculate base pay or bonus incorrectly - fail to return total pay (<i>return not assessed in this part</i>) Responses will not earn the point if they - fail to initialize variable used for total pay - call <code>walkDogs</code> multiple times inside the loop - do not accumulate base and bonus in the context of a loop - return from the loop early	1 point
Question-specific penalties			
None			

Applying the Scoring Criteria

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1-Point Penalty

v) Array/collection access confusion (`[] get`)

w) Extraneous code that causes side-effect (e.g., printing to output, incorrect precondition check)

x) Local variables used but none declared

y) Destruction of persistent data (e.g., changing value referenced by parameter)

z) Void method or constructor that returns a value

No Penalty

• Extraneous code with no side-effect (e.g., valid precondition check, no-op)

• Spelling/case discrepancies where there is no ambiguity*

• Local variable not declared provided other variables are declared in some part

• `private` or `public` qualifier on a local variable• Missing `public` qualifier on class or constructor header

• Keyword used as an identifier

• Common mathematical symbols used for operators ($\times$, $\div$, $\leq$, $\geq$, $<>$, $\neq$)• `[]` vs. `()` vs. `<>`• `=` instead of `==` and vice versa• `length/size` confusion for array, `String`, `List`, or `ArrayList`; with or without `()`• Extraneous `[]` when referencing entire array• `[i,j]` instead of `[i][j]`• Extraneous size in array declaration, e.g., `int[size] nums = new int[size];`• Missing `;` where structure clearly conveys intent• Missing `{ }` where indentation clearly conveys intent• Missing `()` on parameter-less method or constructor invocations• Missing `()` around `if` or `while` conditions

*Spelling and case discrepancies for identifiers fall under the "No Penalty" category only if the correction can be **unambiguously** inferred from context, for example, "`ArrayList`" instead of "`Arraylist`". As a counterexample, note that if the code declares `"int G=99, g=0;"`, then uses `"while (G < 10)"` instead of `"while (g < 10)"`, the context does **not** allow for the reader to assume the use of the lower case variable.

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No Penalty

- : instead of ; and vice versa
- , instead of ; and vice versa

Question 2: Class

9 points

Canonical solution

9 points

```
public class SignedText
{
    private String firstName;
    private String lastName;

    public SignedText(String first, String last)
    {
        firstName = first;
        lastName = last;
    }

    public String getSignature()
    {
        String sig = "";
        if (!firstName.equals(""))
        {
            sig += firstName.substring(0, 1) + "-";
        }
        sig += lastName;
        return sig;
    }

    public String addSignature(String textStr)
    {
        String sig = getSignature();
        int index = textStr.indexOf(sig);

        if (index == -1)
        {
            return textStr + sig;
        }
        else if (index == 0)
        {
            return textStr.substring(sig.length()) + sig;
        }
        else
        {
            return textStr;
        }
    }
}
```

SignedText

Scoring Criteria		Decision Rules	
1	Declares class header: <code>class SignedText</code>	Responses will not earn the point if they - declare the class as <code>private</code> - include extraneous code outside the class - include <code>()</code> with or without parameters in the class header	1 point
2	Declares all appropriate <code>private</code> instance variable(s) and constructor initializes instance variable(s) using appropriate parameters	Responses can still earn the point even if they - create and store the signature using only one <code>String</code> instance variable Responses will not earn the point if they - declare any instance variables <code>static</code> - omit <code>private</code> in instance variable declaration - declare variables outside the class - declare an instance variable inside the constructor - fail to use either parameter - assign values to instance variables from an unknown source - assign initial value to local variable instead of instance variable, even if the local variables are declared as <code>private</code> - assign parameter(s) to variable(s) with incompatible data type - return a value from the constructor - define the constructor inside a method or define a method inside the constructor	1 point
3	Declares constructor header: <code>SignedText(String ____, String ____)</code>	Responses will not earn the point if they declare the constructor as <code>private</code> or <code>static</code>	1 point
4	Declares method headers: <code>public String getSignature() public String addSignature(String ____)</code>	Responses will not earn the point if they - omit <code>public</code> in either method header or declare either method as something other than <code>public</code> - use incorrect method name - use incorrect return or parameter type	1 point
5	Compares first name to the empty string	Responses can still earn the point even if they perform the comparison implicitly (e.g., by comparing the string's length to 0)	1 point

6	Determines appropriate signature string in both cases (<i>algorithm</i>)	Responses can still earn the point even if they - fail to return a value in some cases (<i>return from getSignature not assessed</i>) Responses will not earn the point if they - construct the correct string but return something else - define another method inside the signature method or vice versa	1 point
7	Calls <code>String</code> methods using correct syntax throughout the class	Responses can still earn the point even if they - call <code>substring</code> only one time - call <code>indexOf</code>, <code>contains</code>, <code>charAt</code>, or other appropriate methods Responses will not earn the point if they - only call <code>length</code> and/or <code>equals</code> without using other <code>String</code> methods - fail to call at least one <code>String</code> method which accesses elements of a string	1 point
8	Identifies the three required cases for <code>addSignature</code> using appropriate conditions	Responses can still earn the point even if they return an incorrect string in one or more cases	1 point
9	<code>addSignature</code> returns appropriate <code>String</code> in all three cases (<i>algorithm</i>)	Responses can still earn the point even if they - identify one or more of the three cases incorrectly, as long as they are unambiguously no-match, match-start, and match-end - implement <code>getSignature</code> incorrectly Responses will not earn the point if they - call <code>getSignature</code> incorrectly, or incorrectly implement its functionality in <code>addSignature</code> - fail to identify three distinct cases - build correct strings but assign them to cases incorrectly - print the string instead of or in addition to returning it - define another method inside <code>addSignature</code> or vice versa	1 point

Question-specific penalties

None

Alternate canonical:

```

public class SignedText
{
    private String signature;

    public SignedText(String first, String last)
    {
        signature = last;
        if (first.length() > 0)
        {
            signature = first.substring(0, 1) + "-" + last;
        }
    }

    public String getSignature()
    {
        return signature;
    }

    public String addSignature(String textStr)
    {
        String result = textStr;
        int index = textStr.indexOf(signature);
        if (index < 0)
        {
            result += signature;
        }
        else if (index == 0)
        {
            result = result.substring(signature.length()) + signature;
        }
        return result;
    }
}

```

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- x) Local variables used but none declared
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- z) Void method or constructor that returns a value

No Penalty

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- Spelling/case discrepancies where there is no ambiguity*
- Local variable not declared provided other variables are declared in some part
- `private` or `public` qualifier on a local variable
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- Common mathematical symbols used for operators ($\times$ $\div$ $\leq$ $\geq$ $<>$ $\neq$)
- [] vs. () vs. <>
- = instead of == and vice versa
- length/size confusion for array, String, List, or ArrayList; with or without ()
- Extraneous [] when referencing entire array
- [i,j] instead of [i][j]
- Extraneous size in array declaration, e.g., `int[size] nums = new int[size];`
- Missing ; where structure clearly conveys intent
- Missing { } where indentation clearly conveys intent
- Missing () on parameter-less method or constructor invocations
- Missing () around if or while conditions

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No Penalty

- : instead of ; and vice versa
- , instead of ; and vice versa

Question 3: Array / ArrayList

9 points

Canonical solution

- | | | |
|----|--|----------|
| a. | <pre>public Round(String[] names) { competitorList = new ArrayList<Competitor>(); for(int i = 0; i < names.length; i++) { Competitor c = new Competitor(names[i], i + 1); competitorList.add(c); } }</pre> | 4 points |
| b. | <pre>public ArrayList<Match> buildMatches() { ArrayList<Match> matches = new ArrayList<Match>(); if (competitorList.size() % 2 == 0) { for(int i = 0; i < competitorList.size()/2; i++) { matches.add(new Match(competitorList.get(i), competitorList.get(competitorList.size() - i - 1))); } } else { for(int i = 1; i < competitorList.size() / 2 + 1; i++) { matches.add(new Match(competitorList.get(i), competitorList.get(competitorList.size() - i))); } } return matches; }</pre> | 5 points |

a. Round

Scoring Criteria		Decision Rules	
1	Accesses* all elements of <code>names</code> (<i>no bounds errors</i>)	Responses will not earn the point if they access <code>names</code> incorrectly	1 point
2	Initializes and maintains rank associated with each accessed competitor, beginning at 1	Responses can still earn the point even if they - maintain a rank variable with initial value 0, as long as it is offset by 1 when accessed - fail to construct a <code>Competitor</code> object Responses will not earn the point if they - compute rank incorrectly for any competitor	1 point
3	Constructs <code>Competitor</code> with provided name and computed rank	Responses can still earn the point even if they - access <code>names</code> incorrectly - compute rank incorrectly Responses will not earn the point if they - omit <code>new</code> in the construction of a <code>Competitor</code> or fail to use the correct number and type of parameters	1 point
4	Adds all constructed competitors to <code>competitorList</code> in the correct order (<i>algorithm</i>)	Responses can still earn the point even if they - fail to initialize <code>competitorList</code> (<i>ArrayList creation not assessed in this part</i>) - omit <code>new</code> in the construction of a <code>Competitor</code> - fail to access all elements of <code>names</code> - add elements with an incorrect or missing rank Responses will not earn the point if they - add items without constructing a <code>Competitor</code> - access <code>competitorList</code> incorrectly - fail to update the instance variable <code>competitorList</code> (e.g. by redeclaring as a local variable) - print or return a value instead of or in addition to updating <code>competitorList</code>	1 point

*An enhanced `for` loop inherently accesses all elements of an `ArrayList`

b. buildMatches

Scoring Criteria		Decision Rules	
5	Declares and initializes local <code>ArrayList</code> of <code>Match</code> objects	Responses will not earn the point if they fail to declare the <code>ArrayList</code>, even if they have other local variables declared	1 point
6	Initializes and maintains an index used to move from both ends of <code>competitorList</code> (<i>algorithm</i>)	Responses can still earn the point even if they - start at 0 instead of 1 or vice versa - make a bounds error with the "high" index, as long as it is counting down from the end of the list - maintain two separate index variables instead of a single offset or other equivalent strategy, as long as it is used to count up from the start and down from the end - fail to use the indices to construct a <code>Match</code>	1 point
7	Computes starting low index based on even/odd comparison	Responses can still earn the point even if they - compute the index incorrectly, as long as the even/odd cases start at different indices - call the <code>size</code> method incorrectly - modifies <code>competitorList</code> instead of skipping an index Responses will not earn the point if they - determine even and odd number of competitors incorrectly	1 point
8	Gets two elements of <code>competitorList</code> based on maintained index, constructs a <code>Match</code> object from them, and adds it to the local list	Responses can still earn the point even if they - omit <code>new</code> in the creation of the <code>Match</code> object (<i>use of <code>new</code> not assessed for this type</i>) - use incorrect indices Responses will not earn the point if they - access <code>competitorList</code> incorrectly - fail to create an object of type <code>Match</code> - use incorrect number or type of parameters on any of the method calls	1 point

9	Populates the list with the correct number of pairs of competitors, omitting the first competitor in the odd case, without bounds errors (<i>algorithm</i>)	Responses can still earn the point even if they - fail to return the <code>ArrayList</code> (<i>return not assessed in this question</i>) - determine even and odd number of competitors incorrectly, as long as the cases are unambiguous - fail to create or use a <code>Match</code> object Responses will not earn the point if they - fail to guard against even and odd numbers of competitors - include the first competitor for odd numbers of competitors or omit the first for even numbers - include too many matches (e.g. due to continuing past the middle of the list) - add indices instead of competitors - make syntactically incorrect call(s) to <code>size</code> or other <code>ArrayList</code> methods - permanently modify <code>competitorList</code>	1 point
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Question-specific penalties

None

Alternate canonical solution:

```

public Round(String[] names)
{
    competitorList = new ArrayList<Competitor>();

    int rank = 1;

    for (String name : names)
    {
        Competitor c = new Competitor(name, rank);
        competitorList.add(c);
        rank++;
    }
}

public ArrayList<Match> buildMatches()
{
    ArrayList<Match> matches = new ArrayList<Match>();

    int low = 0;
    if (competitorList.size() % 2 == 1)
    {
        low = 1;
    }
    int high = competitorList.size() - 1;

    while (low < high)
    {
        Match m = new Match(competitorList.get(low),
                             competitorList.get(high));

        matches.add(m);
        low++;
        high--;
    }
    return matches;
}

```

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No Penalty

- `:` instead of `;` and vice versa
- `,` instead of `;` and vice versa

Question 4: 2D Arrays

9 points

Canonical solution

a. `public SumOrSameGame(int numRows, int numCols)` **4 points**

```

{
    puzzle = new int[numRows][numCols];

    for (int row = 0; row < numRows; row++)
    {
        for (int col = 0; col < numCols; col++)
        {
            puzzle[row][col] = (int)(Math.random() * 9) + 1;
        }
    }
}

```

b. `public boolean clearPair(int row, int col)` **5 points**

```

{
    int val1 = puzzle[row][col];
    for (int currRow = row; currRow < puzzle.length; currRow++)
    {
        for (int currCol = 0; currCol < puzzle[0].length; currCol++)
        {
            int val2 = puzzle[currRow][currCol];
            if (currRow != row || currCol != col)
            {
                if (val1 == val2 || val1 + val2 == 10)
                {
                    puzzle[row][col] = 0;
                    puzzle[currRow][currCol] = 0;
                    return true;
                }
            }
        }
    }
    return false;
}

```

a. SumOrSameGame

Scoring Criteria		Decision Rules	
1	Constructs correctly sized 2D array of <code>int</code> and assigns to instance variable <code>puzzle</code>	Responses will not earn the point if they - fail to update the instance variable <code>puzzle</code>, e.g., by redeclaring as a local variable - print or return a value instead of or in addition to updating <code>puzzle</code>	1 point
2	Traverses 2D array (<i>no bounds errors</i>)	Responses can still earn the point even if they - fail to construct the 2D array, as long as traversal uses correct bounds - fail to assign to the 2D array elements Responses will not earn the point if they - fail to access an element of the 2D array in the traversal	1 point
3	Generates a random integer that is uniform in the range <code>[1, 9]</code>	Responses will not earn the point if they - fail to call <code>Math.random</code> or an equivalent method - make any incorrect call to <code>Math.random</code> or an equivalent method - call <code>random</code> without <code>Math.</code> - fail to cast to an <code>int</code>	1 point
4	Assigns values to 2D array elements (<i>algorithm</i>)	Responses can still earn the point even if they - generate the random value incorrectly - assign to a local 2D array instead of the instance variable - fail to assign some elements due to a bounds error Responses will not earn the point if they - assign a value other than the attempted randomly generated value - correctly initialized the 2D array but now assign somewhere else - assign the same value to all visited elements - fail to assign to all visited elements	1 point

b. clearPair

Scoring Criteria		Decision Rules	
5	Accesses all and only necessary elements of puzzle in rows <code>>= row</code> (no bounds errors)	Responses can still earn the point even if they - access additional rows, as long as they also guard against pairing them - pair the element at <code>row</code> and <code>col</code> with itself - omit extra elements due to incorrect self-pairing guard, as long as the bounds would otherwise support accessing all necessary elements - return early, as long as bounds and indices would otherwise support accessing all necessary elements Responses will not earn the point if they - fail to access elements of puzzle correctly	1 point
6	Guards against pairing an element with itself	Responses will not earn the point if they - omit extra potential pairs with their self-pairing guard - have no loop	1 point
7	Determines whether two elements are the same or sum to 10	Responses can still earn the point even if they - pair the element at <code>row</code> and <code>col</code> with itself - have no loop Responses will not earn the point if they - test only one of the conditions	1 point
8	Sets a 2D array element to 0 (in the context of a loop)	Responses can still earn the point even if they - set only one identified element to 0 - incorrectly identify elements - set more than 2 elements to 0	1 point
9	Sets identified elements to 0 when match is found and returns appropriate boolean in both cases (algorithm)	Responses can still earn the point even if they - identify elements incorrectly, as long as there is some conditional selection Responses will not earn the point if they - set only one identified element to 0 - change more than 1 element besides the element at <code>row</code> and <code>col</code> - return an incorrect value due to an early return - return an incorrect value due to not returning after clearing once	1 point
Question-specific penalties			
None			

Question 1: Methods and Control Structures

9 points

Canonical solution

(a)	<pre>public int getScore() { int score = 0; if (levelOne.goalReached()) { score = levelOne.getPoints(); if (levelTwo.goalReached()) { score += levelTwo.getPoints(); if (levelThree.goalReached()) { score += levelThree.getPoints(); } } } if (isBonus()) { score *= 3; } return score; }</pre>	4 points
(b)	<pre>public int playManyTimes(int num) { int max = 0; for (int i = 0; i < num; i++) { play(); int score = getScore(); if (score > max) { max = score; } } return max; }</pre>	5 points

(a) `getScore`

Scoring Criteria		Decision Rules	
1	Calls <code>getPoints</code> , <code>goalReached</code> , and <code>isBonus</code>	Responses will not earn the point if they - fail to call <code>getPoints</code> or <code>goalReached</code> on a <code>Level</code> object - call <code>isBonus</code> on an object other than <code>this</code> (use of <code>this</code> is optional) - include parameters	1 point
2	Determines if points are earned based on <code>goalReached</code> return values	Responses can still earn the point even if they - calculate the score total incorrectly - call <code>goalReached</code> incorrectly - fail to distinguish all cases correctly Responses will not earn the point if they - fail to use a nested <code>if</code> statement or equivalent	1 point
3	Guards update of score for bonus game based on <code>isBonus</code> return value	Responses can still earn the point even if they - triple the calculated score incorrectly - update the score with something other than tripling - call <code>isBonus</code> incorrectly Responses will not earn the point if they - use the <code>isBonus</code> return value incorrectly	1 point
4	Initializes and accumulates appropriate score (<i>algorithm</i>)	Responses can still earn the point even if they - call methods incorrectly, as long as method calls are attempted - fail to return the score (<i>return is not assessed</i>) Responses will not earn the point if they - calculate the score total incorrectly - triple the calculated score incorrectly	1 point
Total for part (a)			4 points

(b) `playManyTimes`

Scoring Criteria		Decision Rules	
5	Loops <code>num</code> times	Responses can still earn the point even if they return early	1 point
6	Calls <code>play</code> and <code>getScore</code>	Responses will not earn the point if they - call either method on an object other than <code>this</code> (use of <code>this</code> is optional) - include parameters	1 point
7	Compares a score to an identified max or to another score	Responses can still earn the point even if they - make the comparison outside the loop - call <code>getScore</code> incorrectly - fail to call <code>play</code> between calls to <code>getScore</code>	1 point
8	Identifies the maximum score (<i>algorithm</i>)	Responses will not earn the point if they - fail to initialize the result variable - compare a score to an identified max or to another score outside the loop - fail to call <code>play</code> exactly once each time through the loop	1 point
9	Returns identified maximum score	Responses can still earn the point even if they - calculate the maximum score incorrectly Responses will not earn the point if they - assign a value to the identified maximum score without any loop or logic to find the maximum	1 point
Total for part (b)			5 points
Question-specific penalties			
None			
Total for question 1			9 points

Applying the Scoring Criteria

Apply the question scoring criteria first, which always takes precedence. Penalty points can only be deducted in a part of the question that has earned credit via the question rubric. No part of a question (a, b, c) may have a negative point total. A given penalty can be assessed only once for a question, even if it occurs multiple times or in multiple parts of that question. A maximum of 3 penalty points may be assessed per question.

1-Point Penalty

- v) Array/collection access confusion (`[] get`)
- w) Extraneous code that causes side-effect (e.g., printing to output, incorrect precondition check)
- x) Local variables used but none declared
- y) Destruction of persistent data (e.g., changing value referenced by parameter)
- z) Void method or constructor that returns a value

No Penalty

- Extraneous code with no side-effect (e.g., valid precondition check, no-op)
- Spelling/case discrepancies where there is no ambiguity*
- Local variable not declared provided other variables are declared in some part
- `private` or `public` qualifier on a local variable
- Missing `public` qualifier on class or constructor header
- Keyword used as an identifier
- Common mathematical symbols used for operators ($\times$ $\div$ $\leq$ $\geq$ $\lt$ $\gt$ $\neq$)
- `[]` vs. `()` vs. `<>`
- `=` instead of `==` and vice versa
- `length/size` confusion for array, `String`, `List`, or `ArrayList`; with or without `()`
- Extraneous `[]` when referencing entire array
- `[i,j]` instead of `[i][j]`
- Extraneous `size` in array declaration, e.g., `int[size] nums = new int[size];`
- Missing `;` where structure clearly conveys intent
- Missing `{ }` where indentation clearly conveys intent
- Missing `()` on parameter-less method or constructor invocations
- Missing `()` around `if` or `while` conditions

*Spelling and case discrepancies for identifiers fall under the "No Penalty" category only if the correction can be **unambiguously** inferred from context, for example, "Arraylist" instead of "ArrayList". As a counterexample, note that if the code declares `"int G=99, g=0;"`, then uses `"while (G < 10)"` instead of `"while (g < 10)"`, the context does **not** allow for the reader to assume the use of the lower case variable.

Question 3: Array / ArrayList

9 points

Canonical solution

- | | | |
|-----|--|----------|
| (a) | <pre>public double getAverageRating() { int sum = 0; for (Review r : allReviews) { sum += r.getRating(); } return (double) sum / allReviews.length; }</pre> | 3 points |
| (b) | <pre>public ArrayList<String> collectComments() { ArrayList<String> commentList = new ArrayList<String>(); for (int i = 0; i < allReviews.length; i++) { String comment = allReviews[i].getComment(); if (comment.indexOf("!") >= 0) { String last = comment.substring(comment.length() - 1); if (!last.equals("!") && !last.equals(".")) { comment += "."; } commentList.add(i + "-" + comment); } } return commentList; }</pre> | 6 points |

(a) `getAverageRating`

Scoring Criteria		Decision Rules	
1	Initializes and accumulates sum	Response can still earn the point even if they - fail to use a loop to accumulate - fail to call <code>getRating</code> or call <code>getRating</code> incorrectly	1 point
2	Accesses every element of <code>allReviews</code> (<i>no bounds errors</i>)	Responses will not earn the point if they access the elements of <code>allReviews</code> incorrectly	1 point
3	Computes and returns <code>double</code> average rating based on <code>getRating</code> return values (<i>algorithm</i>)	Response can still earn the point even if they - fail to initialize the accumulator for the sum Responses will not earn the point if they - fail to accumulate the sum of all ratings - use integer division to compute average - include parameters on call to <code>getRating</code> - fail to call <code>getRating</code> on all elements of <code>allReviews</code>	1 point
Total for part (a)			3 points

(b) `collectComments`

Scoring Criteria		Decision Rules	
4	Instantiates an <code>ArrayList</code> capable of holding <code>String</code> objects		1 point
5	Accesses every element of <code>allReviews</code> (<i>no bounds errors</i>)	Responses can still earn the point even if they - fail to keep track of the index Responses will not earn the point if they - access the elements of <code>allReviews</code> incorrectly	1 point
6	Calls <code>getComment</code> on an element of <code>allReviews</code> , calls at least one <code>String</code> method appropriately on the <code>getComment</code> return value, and all <code>String</code> method calls are syntactically	Responses can still earn the point even if they - call some of the <code>String</code> methods on objects other than <code>getComment</code> return values Responses will not earn the point if they - include a parameter when calling <code>getComment</code> - call any <code>String</code> methods incorrectly - call any <code>String</code> methods on objects other than <code>String</code> values	1 point
7	Compares the final character of the comment to both a period and an exclamation point	Responses can still earn the point even if they - use incorrect logic in the comparison - call <code>String</code> methods incorrectly Responses will not earn the point if they - use <code>==</code> instead of <code>equals</code> when comparing <code>String</code> objects	1 point
8	Assembles string appropriately based on result of comparison of last character with period and exclamation point (<i>algorithm</i>)	Responses can still earn the point even if they - call <code>String</code> methods incorrectly - use <code>==</code> instead of <code>equals</code> Responses will not earn the point if they - fail to keep track of the element index - use incorrect logic in the comparison	1 point
9	Adds all and only appropriate constructed strings to the <code>ArrayList</code> (<i>algorithm</i>)	Responses can still earn the point even if they - initialize the <code>ArrayList</code> incorrectly - fail to return the constructed <code>ArrayList</code> (<i>return is not assessed</i>) - assemble the review string incorrectly - access the elements of <code>allReviews</code> incorrectly	1 point

Total for part (b) 6 points

Question-specific penalties

None

Total for question 3 9 points

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